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## APPENDICES

**APPENDIX I****REAGENTS AND GEL PREPARATION FOR SDS-PAGE**

## 1. 30% Acrylamide – 0.8% Bis-acrylamide

Acrylamide 30.0 g

Bis-acrylamide 0.8 g

Distilled water to 100.0 ml

Filter and store at 4 ° C in the dark (30 days maximum).

## 2. Separating gel buffer pH 8.8 (1.5 M Tris-HCl)

Trizma base 18.15 g

Distilled water to 100.00 ml

Adjust to pH 8.8 with 6 N HCl. Store at 4 ° C.

## 3. Stacking gel buffer pH 6.8 (0.5 M Tris-HCl)

Trizma base 6.0 g

Distilled water to 100.0 ml

Adjust to pH 6.8 with 6 N HCl. Store at 4 ° C.

## 4. 10% Sodium dodecyl sulfate (SDS)

SDS 10.0 g

Distilled water to 100.0 ml

Store at room temperature.

## 5. 10% Ammonium persulfate (freshly prepared)

Ammonium persulfate 0.1 g

Distilled water to 1.0 ml

## 6. Sample buffer

Stock sample buffer (store at room temperature)

Distilled water	4.8	ml
0.5 M Tris-HCl pH 6.8	1.2	ml
Glycerol	1.0	ml
10% w/v SDS	2.0	ml
0.1% w/v Bromophenol blue	0.5	ml

SDS reducing sample buffer (prepare immediately before use)

$\beta$ - mercaptoethanol	50	$\mu$ l
Stock sample buffer	950	$\mu$ l

## 7. Running buffer pH 8.3 (5X electrode buffer)

Trizma base	15.0	g
Glycine	72.0	g
SDS	5.0	g
Distilled water to	1000.0	ml

Store at 4 °C. Warm to room temperature before use if precipitation occurs. Dilute 60 ml 5X stock with 240 ml distilled water for one electrophoretic run.

## 8. 12% Separating gel preparation (0.375 M Tris, pH 8.8)

Distilled water	3.35	ml
1.5 M Tris-HCl, pH 8.8	2.50	ml
10% w/v SDS stock	100.00	$\mu$ l
30% Acrylamide/Bis	4.00	ml
10% Ammonium persulfate	50.00	$\mu$ l
TEMED	5.00	$\mu$ l

## 9. Stacking gel preparation (4% gel, 0.125 M Tris, pH 6.8)

Distilled water	6.10	ml
0.5 M Tris-HCl, pH 8.8	2.50	ml
10% w/v SDS stock	100.00	$\mu$ l
30% Acrylamide/Bis	1.33	ml
10% Ammonium persulfate	50.00	$\mu$ l
TEMED	10.00	$\mu$ l

## 10. Staining solution

Coomassie brilliant blue R-250	1.0	g
Methanol	400.0	ml
Acetic acid	100.0	ml
Distilled water	500.0	ml

## 11. Destaining solution

Methanol	400.0	ml
Acetic acid	100.0	ml
Distilled water	500.0	ml



**APPENDIX II**  
**REAGENTS FOR ELISA**

1. 0.05 M Carbonate-bicarbonate buffer pH 9.6 (coating buffer)

Sodium carbonate	0.8	g
Sodium hydrogen carbonate	1.5	g
Distilled water to	500.0	ml

2. Citrate-phosphate buffer pH 5.0 (substrate buffer)

Citric acid	9.3	g
Sodium hydrogen phosphate	18.3	g
Thimerosol	0.1	g
Distilled water to	1,000.0	ml

3. Phosphate buffer saline pH 7.4 with Tween 20 (PBS-T, washing buffer)

Sodium chloride	8.0	g
Potassium dihydrogen phosphate	0.2	g
Sodium hydrogen phosphate	2.9	g
Potassium chloride	0.2	g
Thimerosol	0.1	g
Tween 20	0.5	ml
Distilled water to	1,000.0	ml

4. 1% gelatin in PBS-T (diluent)

Gelatin	1.0	g
PBS-T to	100.0	ml

## 5. 3% gelatin in PBS-T (blocking solution)

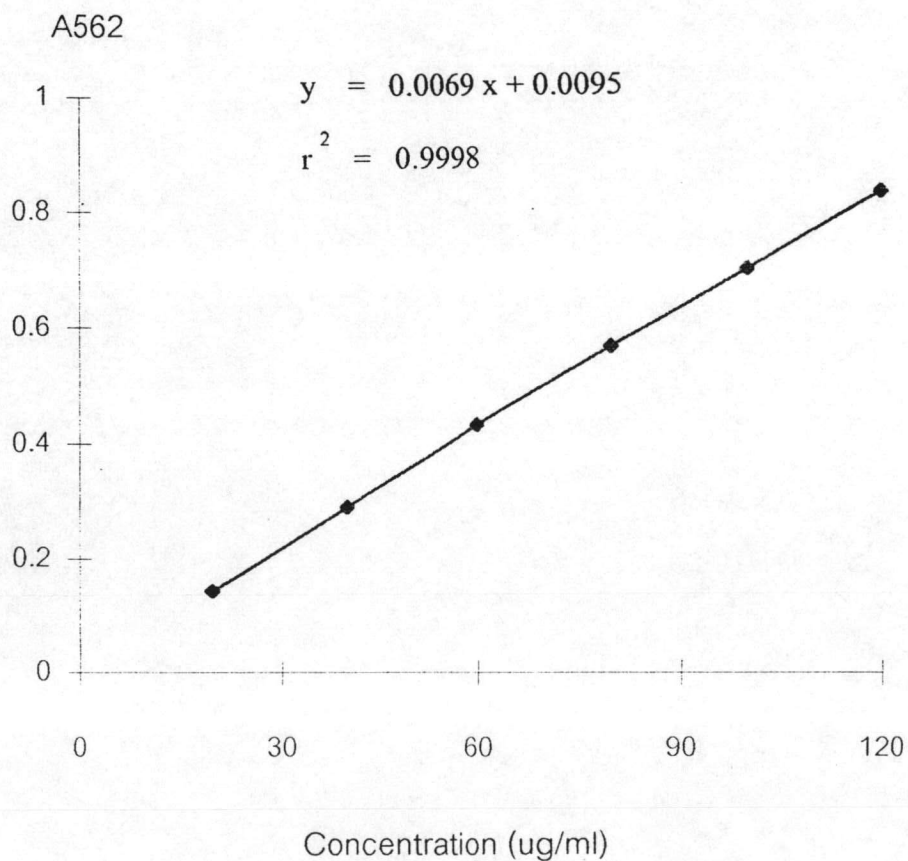
Gelatin	3.0	g
PBS-T to	100.0	ml

## 6. 4 N Sulfuric acid

98% Sulfuric acid	54.4	ml
Distilled water to	500.0	ml

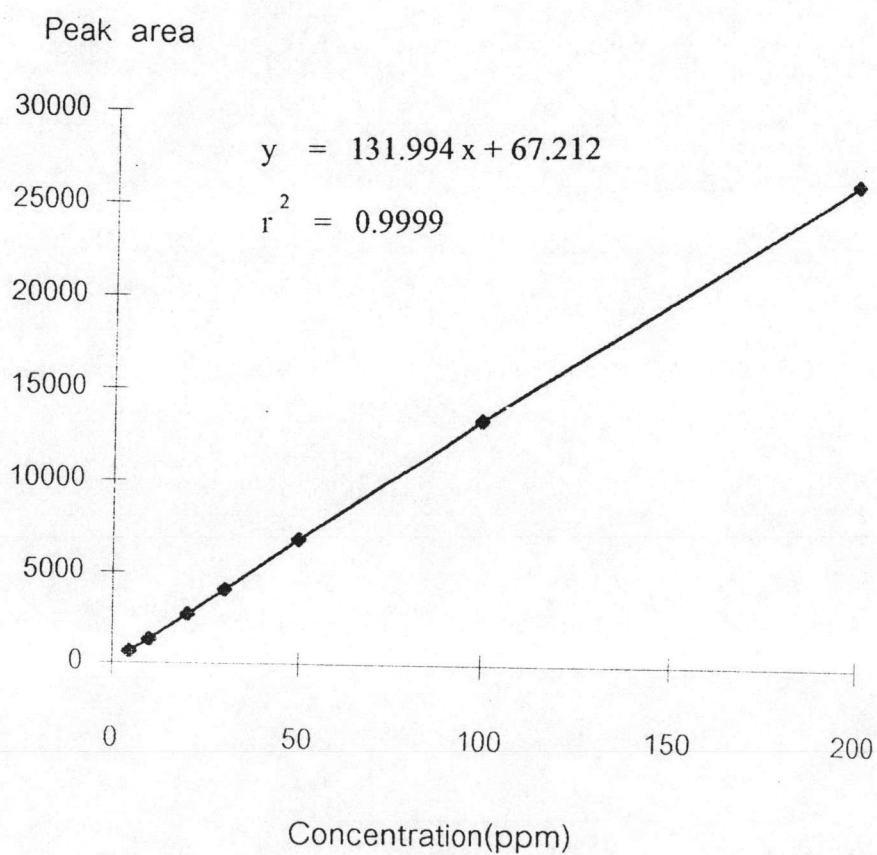
**APPENDIX III**  
**CALIBRATION CURVE OF STANDARD BSA**

BSA Concentration ( $\mu\text{g/ml}$ )	A <sub>562</sub>	SD
20	0.142	0.0015
40	0.290	0.0032
60	0.433	0.0028
80	0.570	0.0037
100	0.705	0.0035
120	0.840	0.0040



**APPENDIX IV**  
**CALIBRATION CURVE OF DICHLOROMETHANE**

Concentration of dichloromethane ( ppm )	Peak area	SD
5	616	36.75
10	1290	40.20
20	2700	44.46
30	4038	43.01
50	6827	47.29
100	13422	66.90
200	26355	93.38





**APPENDIX V**

**PARTICLE SIZE AND SIZE DISTRIBUTION CURVE OF  
POLY( LACTIDE - CO - GLYCOLIDE ) MICROPARTICLES**

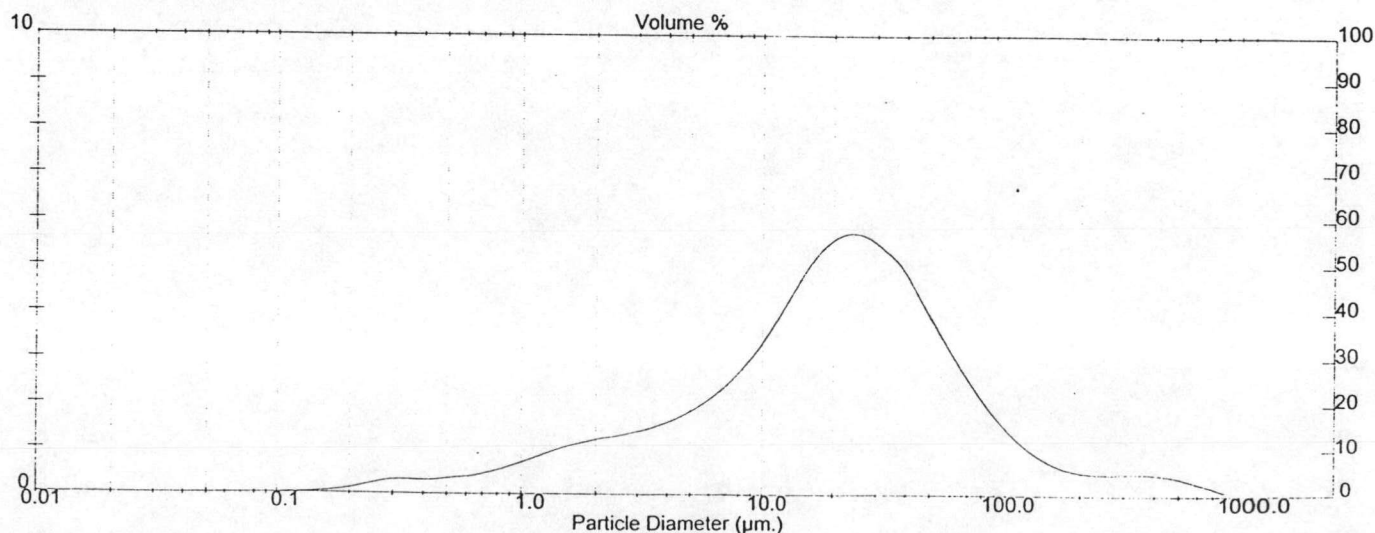
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 DL 150/9	Run Number: 4	Measurement Date: Fri, Mar 02, 2000
Sample File: PARI	Record Number: 24	Analysis Date: Fri, Mar 02, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Centre Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 8.7 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.158 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0084 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2239 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.35 um	D (v, 0.5) = 20.37 um	D (v, 0.9) = 81.07 um
D [4, 3] = 41.98 um	D [3, 2] = 4.90 um	Span = 3.864E+00	Uniformity = 1.627E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	2.45	7.72	23.72
0.06	0.00	0.07	0.01	7.72	2.81	9.00	26.53
0.07	0.01	0.08	0.01	9.00	3.25	10.48	29.77
0.08	0.01	0.09	0.02	10.48	3.76	12.21	33.54
0.09	0.02	0.11	0.04	12.21	4.32	14.22	37.85
0.11	0.02	0.13	0.06	14.22	4.87	16.57	42.72
0.13	0.04	0.15	0.10	16.57	5.33	19.31	48.05
0.15	0.06	0.17	0.15	19.31	5.62	22.49	53.67
0.17	0.09	0.20	0.25	22.49	5.71	26.20	59.38
0.20	0.16	0.23	0.40	26.20	5.60	30.53	64.98
0.23	0.24	0.27	0.64	30.53	5.34	35.56	70.33
0.27	0.31	0.31	0.95	35.56	5.01	41.43	75.33
0.31	0.33	0.36	1.28	41.43	4.40	48.27	79.74
0.36	0.32	0.42	1.59	48.27	3.76	56.23	83.50
0.42	0.33	0.49	1.92	56.23	3.12	65.51	86.62
0.49	0.37	0.58	2.30	65.51	2.53	76.32	89.15
0.58	0.40	0.67	2.70	76.32	2.01	88.91	91.16
0.67	0.47	0.78	3.17	88.91	1.56	103.58	92.72
0.78	0.58	0.91	3.75	103.58	1.20	120.67	93.92
0.91	0.70	1.06	4.44	120.67	0.92	140.58	94.85
1.06	0.83	1.24	5.27	140.58	0.72	163.77	95.56
1.24	0.97	1.44	6.24	163.77	0.58	190.80	96.14
1.44	1.08	1.68	7.32	190.80	0.51	222.28	96.65
1.68	1.17	1.95	8.49	222.28	0.48	258.95	97.13
1.95	1.24	2.28	9.73	258.95	0.49	301.68	97.62
2.28	1.30	2.65	11.03	301.68	0.50	351.46	98.12
2.65	1.37	3.09	12.40	351.46	0.49	409.45	98.61
3.09	1.46	3.60	13.87	409.45	0.46	477.01	99.07
3.60	1.58	4.19	15.45	477.01	0.38	555.71	99.45
4.19	1.74	4.88	17.18	555.71	0.28	647.41	99.73
4.88	1.93	5.69	19.11	647.41	0.18	754.23	99.92
5.69	2.16	6.63	21.27	754.23	0.08	878.67	100.00



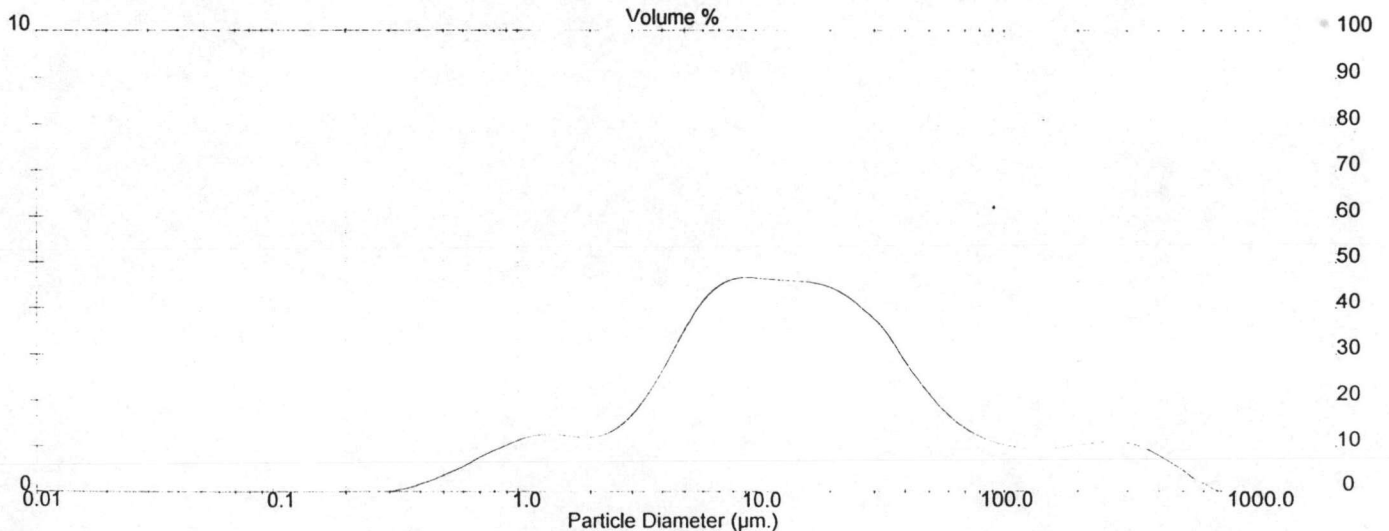
**Result: Analysis Report**

Sample Details		
Sample ID: I.5.DL 250/12	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 22	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 26.7 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.369 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0241 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1263 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.12 um	D (v, 0.5) = 13.29 um	D (v, 0.9) = 106.08 um
D [4, 3] = 42.15 um	D [3, 2] = 5.33 um	Span = 7.820E+00	Uniformity = 2.722E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.51	7.72	33.53
0.06	0.00	0.07	0.00	7.72	4.64	9.00	38.17
0.07	0.00	0.08	0.00	9.00	4.65	10.48	42.82
0.08	0.00	0.09	0.00	10.48	4.62	12.21	47.44
0.09	0.00	0.11	0.00	12.21	4.59	14.22	52.03
0.11	0.00	0.13	0.00	14.22	4.57	16.57	56.60
0.13	0.00	0.15	0.00	16.57	4.52	19.31	61.12
0.15	0.00	0.17	0.00	19.31	4.40	22.49	65.53
0.17	0.00	0.20	0.00	22.49	4.18	26.20	69.71
0.20	0.00	0.23	0.00	26.20	3.88	30.53	73.59
0.23	0.00	0.27	0.00	30.53	3.52	35.56	77.11
0.27	0.00	0.31	0.00	35.56	2.99	41.43	80.10
0.31	0.07	0.36	0.07	41.43	2.47	48.27	82.57
0.36	0.16	0.42	0.23	48.27	2.02	56.23	84.59
0.42	0.28	0.49	0.51	56.23	1.65	65.51	86.24
0.49	0.44	0.58	0.95	65.51	1.37	76.32	87.62
0.58	0.61	0.67	1.56	76.32	1.18	88.91	88.79
0.67	0.81	0.78	2.37	88.91	1.05	103.58	89.84
0.78	0.97	0.91	3.33	103.58	0.97	120.67	90.82
0.91	1.11	1.06	4.45	120.67	0.94	140.58	91.75
1.06	1.22	1.24	5.67	140.58	0.94	163.77	92.69
1.24	1.26	1.44	6.93	163.77	0.97	190.80	93.66
1.44	1.23	1.68	8.16	190.80	1.03	222.28	94.69
1.68	1.19	1.95	9.36	222.28	1.08	258.95	95.77
1.95	1.21	2.28	10.57	258.95	1.09	301.68	96.86
2.28	1.32	2.65	11.89	301.68	1.02	351.46	97.88
2.65	1.58	3.09	13.47	351.46	0.87	409.45	98.75
3.09	1.98	3.60	15.45	409.45	0.65	477.01	99.40
3.60	2.52	4.19	17.97	477.01	0.42	555.71	99.82
4.19	3.13	4.88	21.10	555.71	0.18	647.41	100.00
4.88	3.72	5.69	24.82	647.41	0.00	754.23	100.00
5.69	4.20	6.63	29.02	754.23	0.00	878.67	100.00



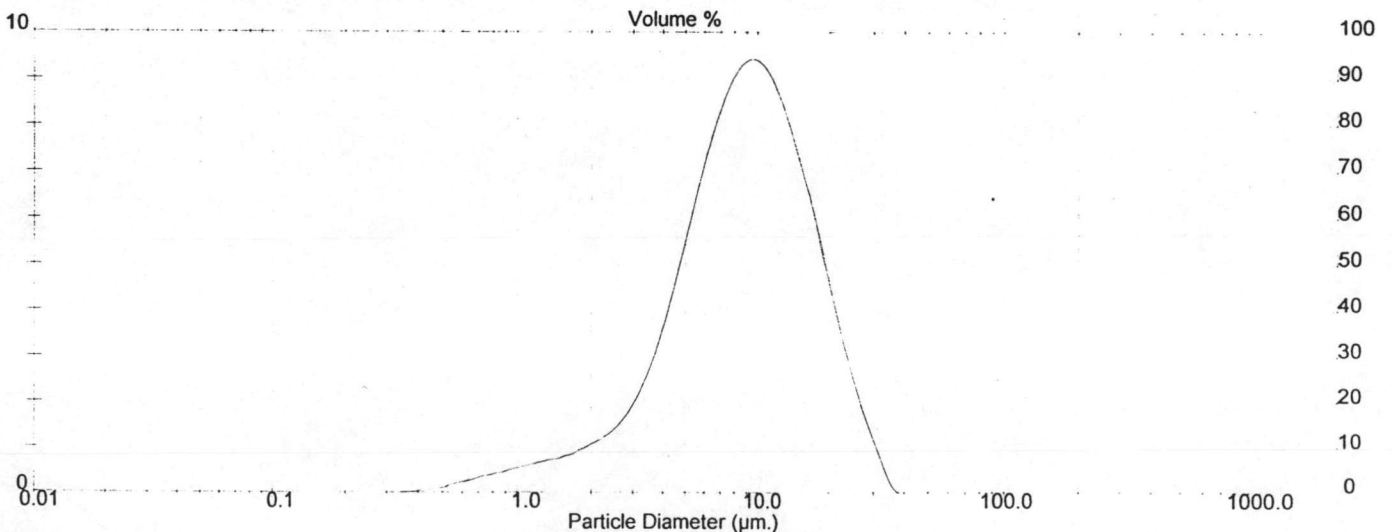
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 DL 250 / 15	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 5	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 4.595 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0201 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0687 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.09 um	D (v, 0.5) = 8.81 um	D (v, 0.9) = 18.80 um
D [4, 3] = 10.06 um	D [3, 2] = 5.61 um	Span = 1.784E+00	Uniformity = 5.479E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	8.43	7.72	42.10
0.06	0.00	0.07	0.00	7.72	9.17	9.00	51.27
0.07	0.00	0.08	0.00	9.00	9.39	10.48	60.66
0.08	0.00	0.09	0.00	10.48	9.08	12.21	69.75
0.09	0.00	0.11	0.00	12.21	8.27	14.22	78.02
0.11	0.00	0.13	0.00	14.22	7.10	16.57	85.12
0.13	0.00	0.15	0.00	16.57	5.77	19.31	90.89
0.15	0.00	0.17	0.00	19.31	4.19	22.49	95.07
0.17	0.00	0.20	0.00	22.49	2.78	26.20	97.85
0.20	0.00	0.23	0.00	26.20	1.56	30.53	99.41
0.23	0.00	0.27	0.00	30.53	0.59	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.01	0.36	0.01	41.43	0.00	48.27	100.00
0.36	0.04	0.42	0.05	48.27	0.00	56.23	100.00
0.42	0.08	0.49	0.13	56.23	0.00	65.51	100.00
0.49	0.15	0.58	0.28	65.51	0.00	76.32	100.00
0.58	0.24	0.67	0.52	76.32	0.00	88.91	100.00
0.67	0.37	0.78	0.89	88.91	0.00	103.58	100.00
0.78	0.51	0.91	1.40	103.58	0.00	120.67	100.00
0.91	0.66	1.06	2.06	120.67	0.00	140.58	100.00
1.06	0.80	1.24	2.86	140.58	0.00	163.77	100.00
1.24	0.90	1.44	3.76	163.77	0.00	190.80	100.00
1.44	0.96	1.68	4.73	190.80	0.00	222.28	100.00
1.68	1.02	1.95	5.75	222.28	0.00	258.95	100.00
1.95	1.13	2.28	6.89	258.95	0.00	301.68	100.00
2.28	1.35	2.65	8.24	301.68	0.00	351.46	100.00
2.65	1.76	3.09	10.01	351.46	0.00	409.45	100.00
3.09	2.42	3.60	12.43	409.45	0.00	477.01	100.00
3.60	3.37	4.19	15.80	477.01	0.00	555.71	100.00
4.19	4.59	4.88	20.39	555.71	0.00	647.41	100.00
4.88	5.96	5.69	26.35	647.41	0.00	754.23	100.00
5.69	7.31	6.63	33.67	754.23	0.00	878.67	100.00





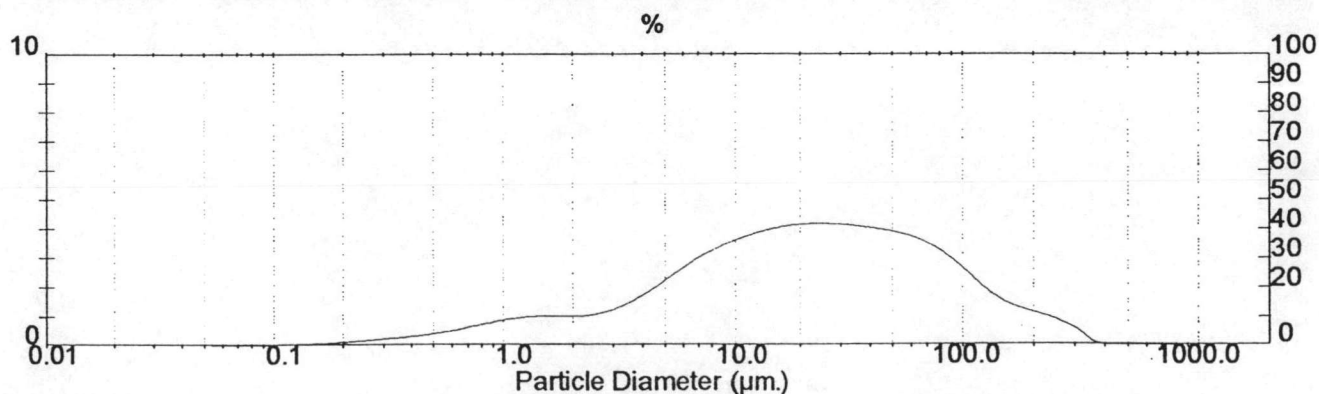
## Result: Analysis Report

Sample Details		
Sample ID: I.5 DL 500/g	Run Number: 15	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 18	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 13.7 %
Presentation: 30HD	[Particle R.I. = (1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.891 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0131 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.18 um	D (v, 0.5) = 20.55 um	D (v, 0.9) = 104.40 um
D [4, 3] = 41.15 um	D [3, 2] = 4.38 um	Span = 4.973E+00	Uniformity = 1.599E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	3.04	7.72	25.67
0.06	0.02	0.07	0.02	7.72	3.32	9.00	28.98
0.07	0.02	0.08	0.05	9.00	3.55	10.48	32.54
0.08	0.03	0.09	0.08	10.48	3.75	12.21	36.28
0.09	0.05	0.11	0.13	12.21	3.90	14.22	40.18
0.11	0.06	0.13	0.19	14.22	4.02	16.57	44.20
0.13	0.07	0.15	0.26	16.57	4.10	19.31	48.30
0.15	0.10	0.17	0.36	19.31	4.15	22.49	52.45
0.17	0.12	0.20	0.48	22.49	4.16	26.20	56.60
0.20	0.16	0.23	0.63	26.20	4.14	30.53	60.75
0.23	0.20	0.27	0.83	30.53	4.10	35.56	64.84
0.27	0.24	0.31	1.06	35.56	4.04	41.43	68.88
0.31	0.28	0.36	1.34	41.43	3.96	48.27	72.84
0.36	0.32	0.42	1.66	48.27	3.87	56.23	76.71
0.42	0.38	0.49	2.03	56.23	3.71	65.51	80.42
0.49	0.45	0.58	2.49	65.51	3.50	76.32	83.92
0.58	0.54	0.67	3.03	76.32	3.19	88.91	87.10
0.67	0.65	0.78	3.69	88.91	2.77	103.58	89.87
0.78	0.76	0.91	4.45	103.58	2.28	120.67	92.15
0.91	0.87	1.06	5.31	120.67	1.82	140.58	93.98
1.06	0.95	1.24	6.26	140.58	1.49	163.77	95.46
1.24	0.99	1.44	7.25	163.77	1.27	190.80	96.73
1.44	1.01	1.68	8.26	190.80	1.11	222.28	97.85
1.68	1.00	1.95	9.26	222.28	0.95	258.95	98.80
1.95	1.01	2.28	10.28	258.95	0.72	301.68	99.52
2.28	1.06	2.65	11.33	301.68	0.40	351.46	99.92
2.65	1.18	3.09	12.51	351.46	0.08	409.45	100.00
3.09	1.38	3.60	13.89	409.45	0.00	477.01	100.00
3.60	1.66	4.19	15.55	477.01	0.00	555.71	100.00
4.19	2.00	4.88	17.55	555.71	0.00	647.41	100.00
4.88	2.36	5.69	19.91	647.41	0.00	754.23	100.00
5.69	2.72	6.63	22.63	754.23	0.00	878.67	100.00



## Result: Analysis Report

## Sample Details

Sample ID: I.5 DL 500/12

Run Number: 4

Measurement Date: Wed, Aug 01, 2000

Sample File: PARI

Record Number: 4

Analysis Date: Wed, Aug 01, 2000

Sample Path: A:\

Result Source: Analysed

Sample Notes: Test by Pranee : Scientific and Tecnological Research  
Equipment Center Chulalongkorn University  
Liquid medium : water

## System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS17

Obscuration: 19.5 %

Presentation: 3OHD

[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 0.571 %

Analysis Model: Polydisperse

Modifications: Active -

Killed Data Channels: Low 0; High 2

## Result Statistics

Distribution Type: Volume

Concentration = 0.0215 %Vol

Density = 1.000 g / cub. cm

Specific S.A. = 1.2083 sq. m / g

Mean Diameters:

D (v, 0.1) = 4.54 um

D (v, 0.5) = 13.40 um

D (v, 0.9) = 29.01 um

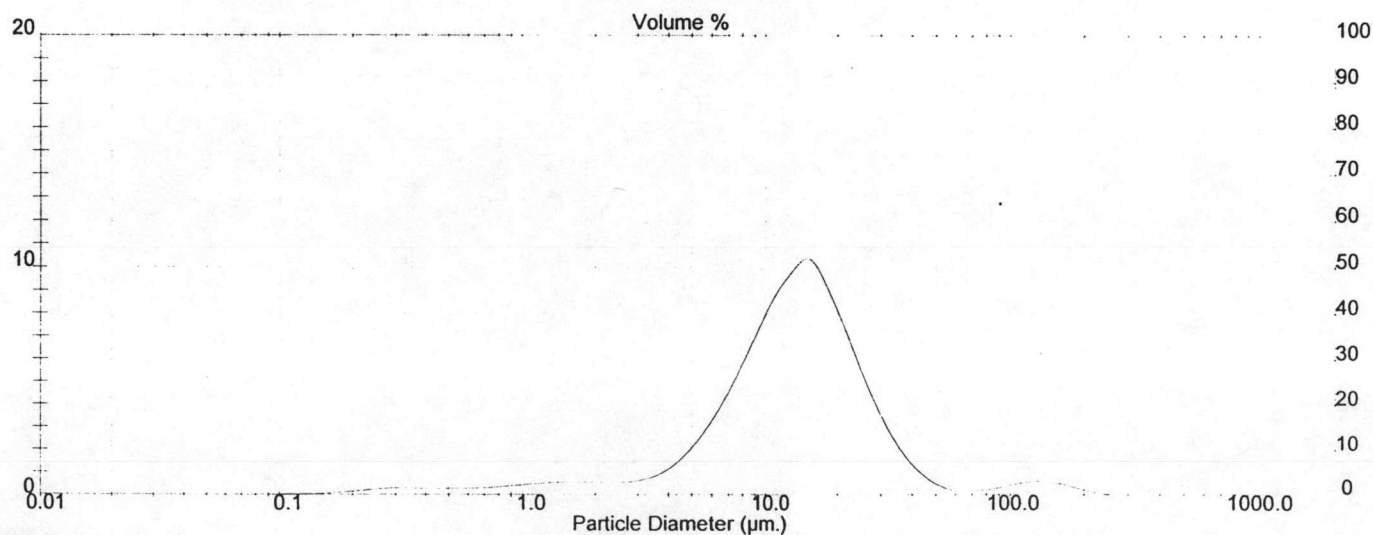
D [4, 3] = 18.18 um

D [3, 2] = 4.97 um

Span = 1.826E+00

Uniformity = 7.691E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.72	7.72	21.36
0.06	0.01	0.07	0.01	7.72	6.19	9.00	27.54
0.07	0.01	0.08	0.03	9.00	7.65	10.48	35.20
0.08	0.02	0.09	0.05	10.48	8.92	12.21	44.12
0.09	0.03	0.11	0.07	12.21	9.82	14.22	53.93
0.11	0.04	0.13	0.11	14.22	10.35	16.57	64.28
0.13	0.06	0.15	0.17	16.57	9.29	19.31	73.57
0.15	0.08	0.17	0.25	19.31	7.66	22.49	81.23
0.17	0.12	0.20	0.38	22.49	5.84	26.20	87.07
0.20	0.18	0.23	0.56	26.20	4.12	30.53	91.20
0.23	0.25	0.27	0.81	30.53	2.68	35.56	93.87
0.27	0.29	0.31	1.10	35.56	1.59	41.43	95.46
0.31	0.30	0.36	1.40	41.43	0.85	48.27	96.31
0.36	0.28	0.42	1.68	48.27	0.41	56.23	96.72
0.42	0.27	0.49	1.95	56.23	0.18	65.51	96.90
0.49	0.28	0.58	2.24	65.51	0.19	76.32	97.08
0.58	0.29	0.67	2.52	76.32	0.23	88.91	97.31
0.67	0.32	0.78	2.84	88.91	0.38	103.58	97.70
0.78	0.37	0.91	3.22	103.58	0.53	120.67	98.23
0.91	0.44	1.06	3.65	120.67	0.60	140.58	98.83
1.06	0.49	1.24	4.15	140.58	0.54	163.77	99.37
1.24	0.54	1.44	4.68	163.77	0.38	190.80	99.75
1.44	0.56	1.68	5.24	190.80	0.19	222.28	99.94
1.68	0.56	1.95	5.80	222.28	0.06	258.95	100.00
1.95	0.54	2.28	6.34	258.95	0.00	301.68	100.00
2.28	0.53	2.65	6.87	301.68	0.00	351.46	100.00
2.65	0.58	3.09	7.46	351.46	0.00	409.45	100.00
3.09	0.73	3.60	8.19	409.45	0.00	477.01	100.00
3.60	1.05	4.19	9.24	477.01	0.00	555.71	100.00
4.19	1.59	4.88	10.83	555.71	0.00	647.41	100.00
4.88	2.37	5.69	13.20	647.41	0.00	754.23	100.00
5.69	3.43	6.63	16.63	754.23	0.00	878.67	100.00



## Result: Analysis Report

## Sample Details

Sample ID: 1.5 DL 500/15

Run Number: 2

Measurement Date: Wed, Aug 01, 2000

Sample File: PARI

Record Number: 28

Analysis Date: Wed, Aug 01, 2000

Sample Path: A:\

Result Source: Analysed

Sample Notes: Test by Pranee : Scientific and Technological Research  
 Equipment Center Chulalongkorn University  
 Liquid medium : water

## System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS17

Obscuration: 21.4 %

Presentation: 3OHD

[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 1.313 %

Analysis Model: Polydisperse

Modifications: Active -

Killed Data Channels: Low 0; High 2

## Result Statistics

Distribution Type: Volume

Concentration = 0.0157 %Vol

Density = 1.000 g / cub. cm

Specific S.A. = 1.3526 sq. m / g

Mean Diameters:

D (v, 0.1) = 2.05 um

D (v, 0.5) = 8.92 um

D (v, 0.9) = 21.78 um

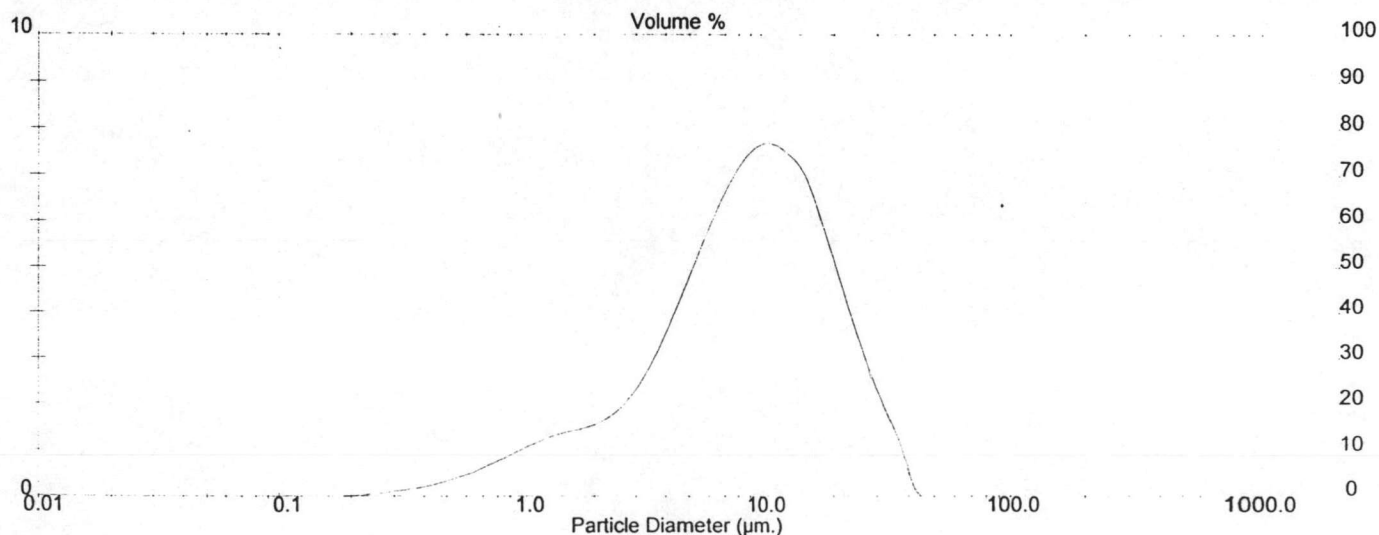
D [4, 3] = 10.71 um

D [3, 2] = 4.44 um

Span = 2.213E+00

Uniformity = 6.753E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.05	0.00	6.63	6.71	7.72	43.15
0.06	0.00	0.07	0.00	7.72	7.28	9.00	50.43
0.07	0.00	0.08	0.00	9.00	7.60	10.48	58.03
0.08	0.00	0.09	0.00	10.48	7.65	12.21	65.69
0.09	0.00	0.11	0.00	12.21	7.42	14.22	73.11
0.11	0.00	0.13	0.00	14.22	6.98	16.57	80.09
0.13	0.00	0.15	0.00	16.57	5.99	19.31	86.08
0.15	0.01	0.17	0.01	19.31	4.85	22.49	90.93
0.17	0.01	0.20	0.02	22.49	3.71	26.20	94.64
0.20	0.03	0.23	0.05	26.20	2.67	30.53	97.31
0.23	0.06	0.27	0.11	30.53	1.78	35.56	99.10
0.27	0.11	0.31	0.22	35.56	0.90	41.43	99.99
0.31	0.15	0.36	0.37	41.43	0.01	48.27	100.00
0.36	0.20	0.42	0.57	48.27	0.00	56.23	100.00
0.42	0.28	0.49	0.85	56.23	0.00	65.51	100.00
0.49	0.39	0.58	1.24	65.51	0.00	76.32	100.00
0.58	0.50	0.67	1.75	76.32	0.00	88.91	100.00
0.67	0.66	0.78	2.41	88.91	0.00	103.58	100.00
0.78	0.82	0.91	3.23	103.58	0.00	120.67	100.00
0.91	0.99	1.06	4.22	120.67	0.00	140.58	100.00
1.06	1.15	1.24	5.37	140.58	0.00	163.77	100.00
1.24	1.29	1.44	6.66	163.77	0.00	190.80	100.00
1.44	1.39	1.68	8.05	190.80	0.00	222.28	100.00
1.68	1.47	1.95	9.52	222.28	0.00	258.95	100.00
1.95	1.60	2.28	11.11	258.95	0.00	301.68	100.00
2.28	1.81	2.65	12.92	301.68	0.00	351.46	100.00
2.65	2.17	3.09	15.09	351.46	0.00	409.45	100.00
3.09	2.69	3.60	17.78	409.45	0.00	477.01	100.00
3.60	3.38	4.19	21.16	477.01	0.00	555.71	100.00
4.19	4.21	4.88	25.37	555.71	0.00	647.41	100.00
4.88	5.11	5.69	30.47	647.41	0.00	754.23	100.00
5.69	5.97	6.63	36.44	754.23	0.00	878.67	100.00





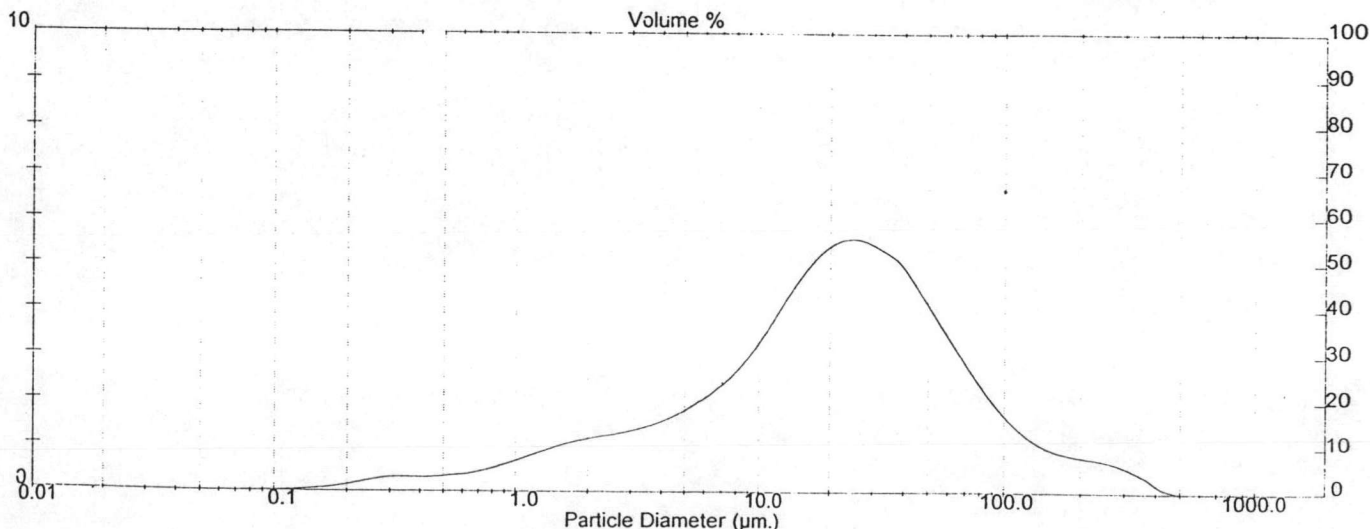
### Result: Analysis Report

Sample Details		
Sample ID: I.5 DL 750/9	Run Number: 2	Measurement Date: Fri, Mar 02, 2000
Sample File: PARI	Record Number: 22	Analysis Date: Fri, Mar 02, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Centre Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 9.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.186 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0089 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2789 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.37 um	D (v, 0.5) = 20.99 um	D (v, 0.9) = 83.40 um
D [4, 3] = 37.44 um	D [3, 2] = 4.69 um	Span = 3.860E+00	Uniformity = 1.351E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	2.40	7.72	23.31
0.06	0.01	0.07	0.01	7.72	2.76	9.00	26.06
0.07	0.01	0.08	0.03	9.00	3.19	10.48	29.25
0.08	0.02	0.09	0.04	10.48	3.68	12.21	32.93
0.09	0.03	0.11	0.07	12.21	4.21	14.22	37.15
0.11	0.04	0.13	0.11	14.22	4.73	16.57	41.87
0.13	0.06	0.15	0.17	16.57	5.16	19.31	47.04
0.15	0.08	0.17	0.25	19.31	5.45	22.49	52.49
0.17	0.12	0.20	0.37	22.49	5.56	26.20	58.05
0.20	0.18	0.23	0.56	26.20	5.50	30.53	63.55
0.23	0.26	0.27	0.81	30.53	5.31	35.56	68.86
0.27	0.31	0.31	1.12	35.56	5.05	41.43	73.92
0.31	0.32	0.36	1.45	41.43	4.54	48.27	78.46
0.36	0.32	0.42	1.76	48.27	3.97	56.23	82.43
0.42	0.33	0.49	2.09	56.23	3.38	65.51	85.82
0.49	0.36	0.58	2.46	65.51	2.80	76.32	88.62
0.58	0.39	0.67	2.85	76.32	2.27	88.91	90.89
0.67	0.46	0.78	3.31	88.91	1.80	103.58	92.69
0.78	0.56	0.91	3.87	103.58	1.42	120.67	94.11
0.91	0.68	1.06	4.55	120.67	1.14	140.58	95.25
1.06	0.80	1.24	5.35	140.58	0.95	163.77	96.20
1.24	0.93	1.44	6.28	163.77	0.84	190.80	97.04
1.44	1.04	1.68	7.33	190.80	0.77	222.28	97.81
1.68	1.13	1.95	8.45	222.28	0.72	258.95	98.53
1.95	1.20	2.28	9.66	258.95	0.63	301.68	99.16
2.28	1.26	2.65	10.92	301.68	0.48	351.46	99.64
2.65	1.34	3.09	12.25	351.46	0.28	409.45	99.92
3.09	1.42	3.60	13.68	409.45	0.08	477.01	100.00
3.60	1.54	4.19	15.22	477.01	0.00	555.71	100.00
4.19	1.69	4.88	16.91	555.71	0.00	647.41	100.00
4.88	1.88	5.69	18.79	647.41	0.00	754.23	100.00
5.69	2.11	6.63	20.91	754.23	0.00	878.67	100.00





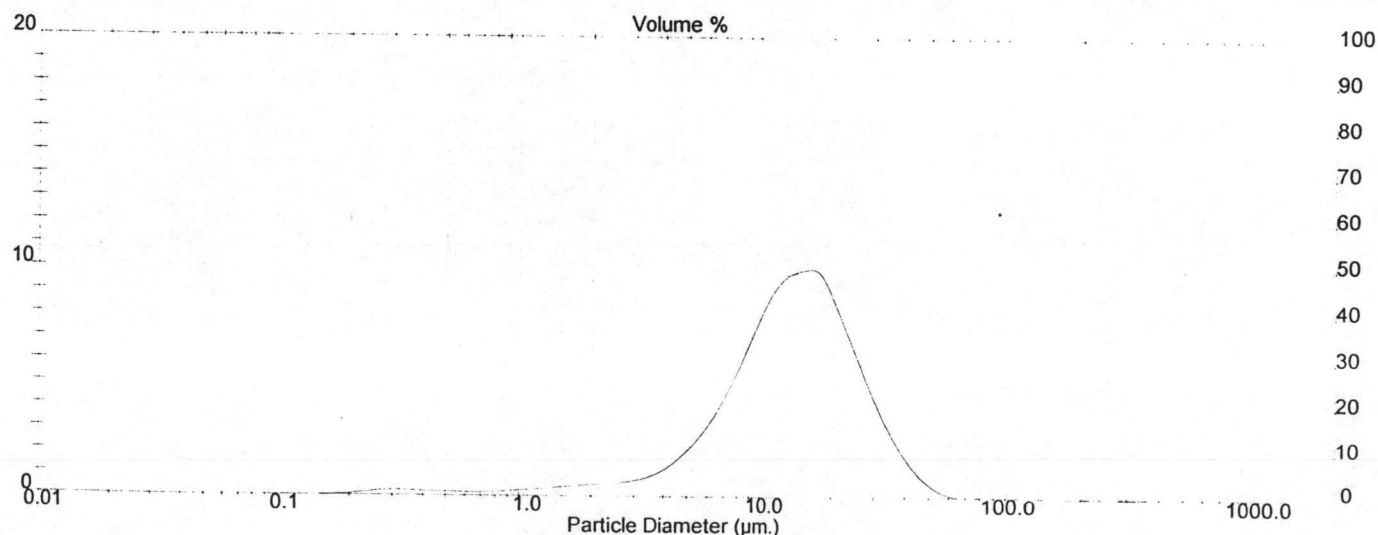
## Result: Analysis Report

Sample Details		
Sample ID: 1.5 DL T50 / 12	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 5	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.318 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0254 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9430 sq. m / g
Mean Diameters:	D (v, 0.1) = 5.15 um	D (v, 0.5) = 13.97 um	D (v, 0.9) = 29.64 um
D [4, 3] = 18.16 um	D [3, 2] = 6.36 um	Span = 1.753E+00	Uniformity = 7.004E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.48	7.72	19.34
0.06	0.00	0.07	0.00	7.72	5.94	9.00	25.27
0.07	0.00	0.08	0.01	9.00	7.47	10.48	32.74
0.08	0.00	0.09	0.01	10.48	8.80	12.21	41.54
0.09	0.01	0.11	0.02	12.21	9.63	14.22	51.18
0.11	0.01	0.13	0.03	14.22	9.89	16.57	61.06
0.13	0.02	0.15	0.05	16.57	9.78	19.31	70.84
0.15	0.03	0.17	0.08	19.31	8.37	22.49	79.20
0.17	0.06	0.20	0.14	22.49	6.67	26.20	85.88
0.20	0.11	0.23	0.26	26.20	4.95	30.53	90.83
0.23	0.19	0.27	0.45	30.53	3.37	35.56	94.20
0.27	0.25	0.31	0.69	35.56	2.06	41.43	96.25
0.31	0.24	0.36	0.94	41.43	1.08	48.27	97.33
0.36	0.21	0.42	1.15	48.27	0.44	56.23	97.77
0.42	0.19	0.49	1.34	56.23	0.10	65.51	97.87
0.49	0.18	0.58	1.52	65.51	0.00	76.32	97.87
0.58	0.17	0.67	1.69	76.32	0.09	88.91	97.95
0.67	0.17	0.78	1.86	88.91	0.26	103.58	98.21
0.78	0.21	0.91	2.07	103.58	0.39	120.67	98.60
0.91	0.25	1.06	2.32	120.67	0.42	140.58	99.02
1.06	0.30	1.24	2.63	140.58	0.37	163.77	99.40
1.24	0.36	1.44	2.99	163.77	0.28	190.80	99.67
1.44	0.43	1.68	3.42	190.80	0.18	222.28	99.85
1.68	0.49	1.95	3.91	222.28	0.10	258.95	99.95
1.95	0.54	2.28	4.45	258.95	0.04	301.68	99.99
2.28	0.59	2.65	5.04	301.68	0.01	351.46	100.00
2.65	0.67	3.09	5.71	351.46	0.00	409.45	100.00
3.09	0.83	3.60	6.54	409.45	0.00	477.01	100.00
3.60	1.13	4.19	7.67	477.01	0.00	555.71	100.00
4.19	1.61	4.88	9.28	555.71	0.00	647.41	100.00
4.88	2.31	5.69	11.59	647.41	0.00	754.23	100.00
5.69	3.27	6.63	14.85	754.23	0.00	878.67	100.00



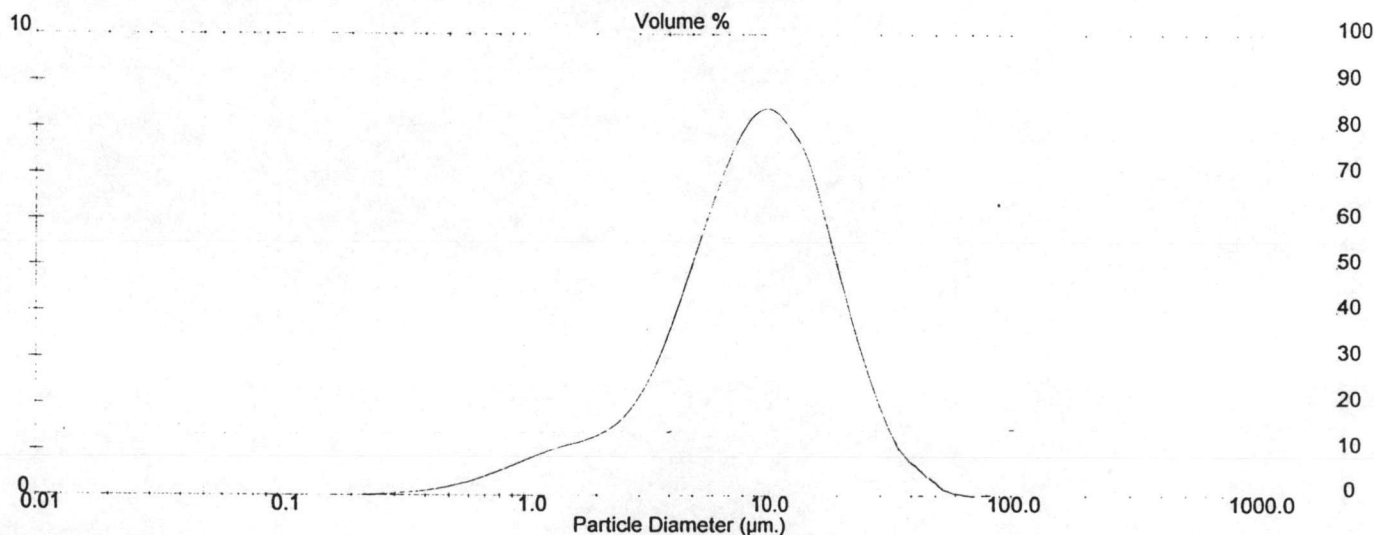
### Result: Analysis Report

Sample Details		
Sample ID: I.5 DL 750/15	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 29	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details		
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]	Obscuration: 21.4 %
Analysis Model: Polydisperse		Residual: 1.736 %
Modifications: Active -	Killed Data Channels: Low 0; High 2	

Result Statistics			
Distribution Type: Volume	Concentration = 0.0173 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1668 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.64 um	D (v, 0.5) = 9.04 um	D (v, 0.9) = 20.75 um
D [4, 3] = 10.64 um	D [3, 2] = 5.14 um	Span = 2.003E+00	Uniformity = 6.166E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	7.39	7.72	41.68
0.06	0.00	0.07	0.00	7.72	8.05	9.00	49.72
0.07	0.00	0.08	0.00	9.00	8.37	10.48	58.09
0.08	0.00	0.09	0.00	10.48	8.32	12.21	66.42
0.09	0.00	0.11	0.00	12.21	7.92	14.22	74.34
0.11	0.00	0.13	0.00	14.22	7.28	16.57	81.62
0.13	0.00	0.15	0.00	16.57	6.02	19.31	87.64
0.15	0.00	0.17	0.00	19.31	4.66	22.49	92.30
0.17	0.00	0.20	0.01	22.49	3.39	26.20	95.69
0.20	0.01	0.23	0.02	26.20	2.29	30.53	97.98
0.23	0.03	0.27	0.04	30.53	1.41	35.56	99.39
0.27	0.05	0.31	0.09	35.56	0.61	41.43	100.00
0.31	0.08	0.36	0.17	41.43	0.00	48.27	100.00
0.36	0.11	0.42	0.28	48.27	0.00	56.23	100.00
0.42	0.16	0.49	0.44	56.23	0.00	65.51	100.00
0.49	0.24	0.58	0.68	65.51	0.00	76.32	100.00
0.58	0.33	0.67	1.01	76.32	0.00	88.91	100.00
0.67	0.46	0.78	1.46	88.91	0.00	103.58	100.00
0.78	0.60	0.91	2.06	103.58	0.00	120.67	100.00
0.91	0.75	1.06	2.81	120.67	0.00	140.58	100.00
1.06	0.89	1.24	3.70	140.58	0.00	163.77	100.00
1.24	1.02	1.44	4.73	163.77	0.00	190.80	100.00
1.44	1.12	1.68	5.85	190.80	0.00	222.28	100.00
1.68	1.22	1.95	7.07	222.28	0.00	258.95	100.00
1.95	1.37	2.28	8.44	258.95	0.00	301.68	100.00
2.28	1.61	2.65	10.04	301.68	0.00	351.46	100.00
2.65	2.00	3.09	12.04	351.46	0.00	409.45	100.00
3.09	2.59	3.60	14.63	409.45	0.00	477.01	100.00
3.60	3.38	4.19	18.02	477.01	0.00	555.71	100.00
4.19	4.36	4.88	22.37	555.71	0.00	647.41	100.00
4.88	5.43	5.69	27.81	647.41	0.00	754.23	100.00
5.69	6.48	6.63	34.29	754.23	0.00	878.67	100.00



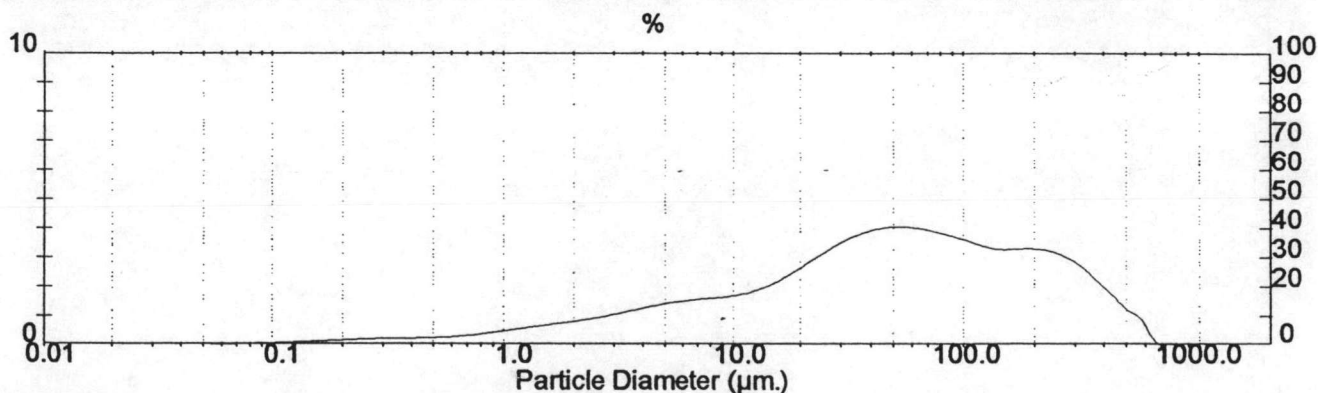
## Result: Analysis Report

Sample Details		
Sample ID: 3 DL 750 / 9	Run Number: 1	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 5	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 14.3 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.657 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0198 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.43 um	D (v, 0.5) = 49.03 um	D (v, 0.9) = 275.47 um
D [4, 3] = 98.43 um	D [3, 2] = 5.00 um	Span = 5.549E+00	Uniformity = 1.641E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.02	0.06	0.02	6.63	1.56	7.72	17.44
0.06	0.03	0.07	0.05	7.72	1.60	9.00	19.05
0.07	0.05	0.08	0.10	9.00	1.66	10.48	20.71
0.08	0.07	0.09	0.16	10.48	1.76	12.21	22.47
0.09	0.08	0.11	0.25	12.21	1.91	14.22	24.38
0.11	0.10	0.13	0.35	14.22	2.13	16.57	26.51
0.13	0.12	0.15	0.47	16.57	2.41	19.31	28.91
0.15	0.14	0.17	0.61	19.31	2.73	22.49	31.64
0.17	0.16	0.20	0.77	22.49	3.06	26.20	34.70
0.20	0.18	0.23	0.96	26.20	3.38	30.53	38.08
0.23	0.20	0.27	1.16	30.53	3.65	35.56	41.74
0.27	0.22	0.31	1.38	35.56	3.86	41.43	45.60
0.31	0.23	0.36	1.61	41.43	3.99	48.27	49.59
0.36	0.23	0.42	1.84	48.27	4.03	56.23	53.62
0.42	0.25	0.49	2.09	56.23	4.01	65.51	57.63
0.49	0.27	0.58	2.36	65.51	3.92	76.32	61.55
0.58	0.29	0.67	2.65	76.32	3.80	88.91	65.34
0.67	0.34	0.78	2.98	88.91	3.64	103.58	68.99
0.78	0.40	0.91	3.39	103.58	3.48	120.67	72.47
0.91	0.47	1.06	3.86	120.67	3.30	140.58	75.77
1.06	0.55	1.24	4.41	140.58	3.26	163.77	79.03
1.24	0.62	1.44	5.03	163.77	3.28	190.80	82.31
1.44	0.69	1.68	5.73	190.80	3.27	222.28	85.58
1.68	0.76	1.95	6.49	222.28	3.18	258.95	88.77
1.95	0.83	2.28	7.32	258.95	2.97	301.68	91.74
2.28	0.91	2.65	8.24	301.68	2.62	351.46	94.35
2.65	1.01	3.09	9.25	351.46	2.13	409.45	96.48
3.09	1.12	3.60	10.37	409.45	1.65	477.01	98.14
3.60	1.23	4.19	11.60	477.01	1.17	555.71	99.31
4.19	1.34	4.88	12.94	555.71	0.69	647.41	100.00
4.88	1.44	5.69	14.38	647.41	0.00	754.23	100.00
5.69	1.51	6.63	15.89	754.23	0.00	878.67	100.00





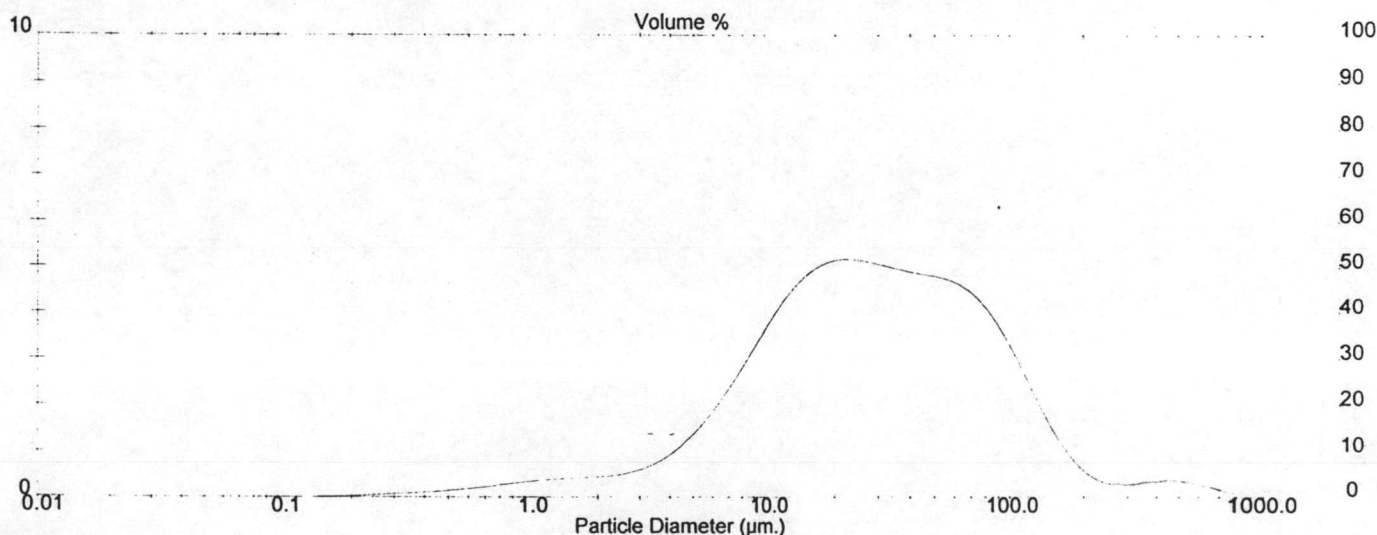
**Result: Analysis Report**

Sample Details		
Sample ID: 3 DL 750 / 12	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 8	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 14.9 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.252 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0249 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.6310 sq. m / g
Mean Diameters:	D (v, 0.1) = 6.10 um	D (v, 0.5) = 27.36 um	D (v, 0.9) = 105.09 um
D [4, 3] = 50.10 um	D [3, 2] = 9.51 um	Span = 3.618E+00	Uniformity = 1.353E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	2.41	7.72	13.52
0.06	0.00	0.07	0.00	7.72	2.94	9.00	16.45
0.07	0.00	0.08	0.00	9.00	3.48	10.48	19.93
0.08	0.00	0.09	0.01	10.48	4.00	12.21	23.93
0.09	0.01	0.11	0.01	12.21	4.46	14.22	28.39
0.11	0.01	0.13	0.02	14.22	4.81	16.57	33.21
0.13	0.01	0.15	0.03	16.57	5.05	19.31	38.25
0.15	0.02	0.17	0.05	19.31	5.15	22.49	43.40
0.17	0.03	0.20	0.07	22.49	5.15	26.20	48.55
0.20	0.04	0.23	0.11	26.20	5.09	30.53	53.64
0.23	0.06	0.27	0.17	30.53	5.00	35.56	58.64
0.27	0.08	0.31	0.25	35.56	4.91	41.43	63.55
0.31	0.09	0.36	0.34	41.43	4.84	48.27	68.38
0.36	0.11	0.42	0.45	48.27	4.77	56.23	73.16
0.42	0.13	0.49	0.59	56.23	4.65	65.51	77.81
0.49	0.17	0.58	0.75	65.51	4.41	76.32	82.22
0.58	0.20	0.67	0.95	76.32	4.02	88.91	86.24
0.67	0.24	0.78	1.19	88.91	3.47	103.58	89.71
0.78	0.29	0.91	1.48	103.58	2.80	120.67	92.50
0.91	0.33	1.06	1.81	120.67	2.09	140.58	94.59
1.06	0.37	1.24	2.18	140.58	1.43	163.77	96.02
1.24	0.40	1.44	2.58	163.77	0.90	190.80	96.92
1.44	0.42	1.68	3.00	190.80	0.54	222.28	97.46
1.68	0.43	1.95	3.43	222.28	0.34	258.95	97.80
1.95	0.45	2.28	3.89	258.95	0.28	301.68	98.08
2.28	0.49	2.65	4.38	301.68	0.30	351.46	98.38
2.65	0.57	3.09	4.95	351.46	0.34	409.45	98.72
3.09	0.69	3.60	5.64	409.45	0.37	477.01	99.09
3.60	0.89	4.19	6.53	477.01	0.35	555.71	99.44
4.19	1.15	4.88	7.68	555.71	0.28	647.41	99.72
4.88	1.50	5.69	9.18	647.41	0.19	754.23	99.91
5.69	1.92	6.63	11.11	754.23	0.09	878.67	100.00





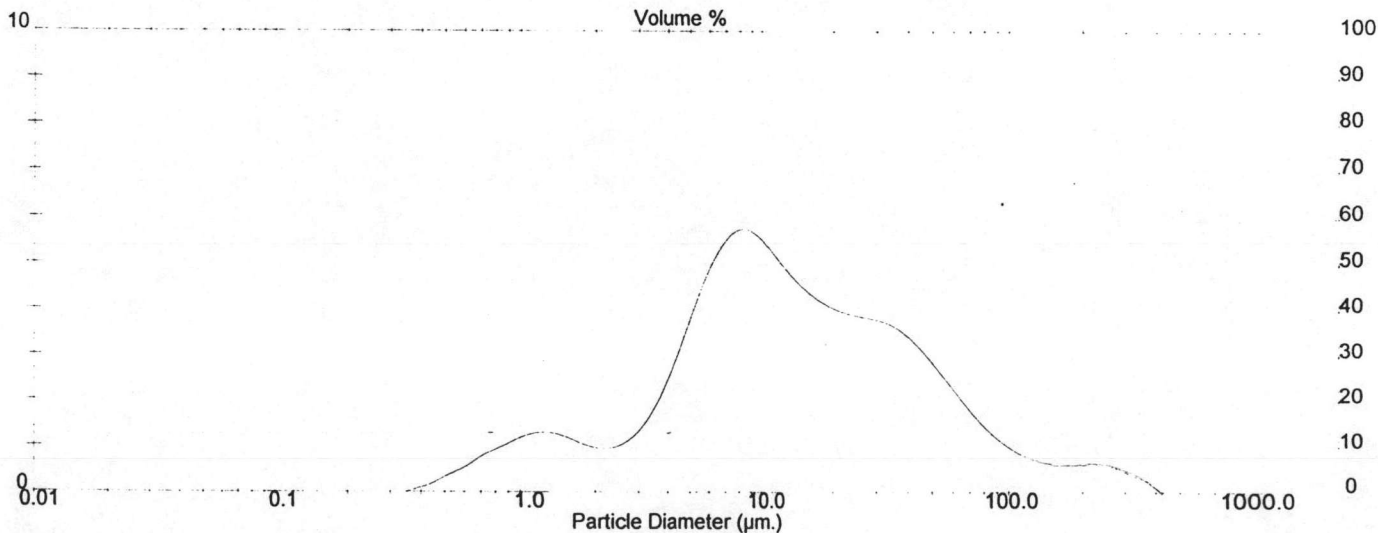
**Result: Analysis Report**

Sample Details		
Sample ID: 3 DL 750 / 15	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 6	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.358 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0150 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0951 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.29 um	D (v, 0.5) = 12.08 um	D (v, 0.9) = 62.09 um
D [4, 3] = 28.08 um	D [3, 2] = 5.48 um	Span = 4.949E+00	Uniformity = 1.835E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.54	7.72	33.82
0.06	0.00	0.07	0.00	7.72	5.74	9.00	39.56
0.07	0.00	0.08	0.00	9.00	5.57	10.48	45.13
0.08	0.00	0.09	0.00	10.48	5.22	12.21	50.35
0.09	0.00	0.11	0.00	12.21	4.81	14.22	55.15
0.11	0.00	0.13	0.00	14.22	4.44	16.57	59.59
0.13	0.00	0.15	0.00	16.57	4.17	19.31	63.76
0.15	0.00	0.17	0.00	19.31	3.99	22.49	67.75
0.17	0.00	0.20	0.00	22.49	3.88	26.20	71.63
0.20	0.00	0.23	0.00	26.20	3.80	30.53	75.44
0.23	0.00	0.27	0.00	30.53	3.71	35.56	79.15
0.27	0.00	0.31	0.00	35.56	3.49	41.43	82.64
0.31	0.00	0.36	0.00	41.43	3.15	48.27	85.79
0.36	0.10	0.42	0.10	48.27	2.71	56.23	88.50
0.42	0.23	0.49	0.33	56.23	2.23	65.51	90.73
0.49	0.41	0.58	0.74	65.51	1.76	76.32	92.49
0.58	0.58	0.67	1.32	76.32	1.36	88.91	93.85
0.67	0.82	0.78	2.13	88.91	1.05	103.58	94.90
0.78	0.98	0.91	3.11	103.58	0.83	120.67	95.74
0.91	1.16	1.06	4.26	120.67	0.70	140.58	96.43
1.06	1.28	1.24	5.54	140.58	0.63	163.77	97.06
1.24	1.28	1.44	6.82	163.77	0.61	190.80	97.67
1.44	1.17	1.68	7.99	190.80	0.62	222.28	98.29
1.68	1.03	1.95	9.02	222.28	0.60	258.95	98.90
1.95	0.94	2.28	9.96	258.95	0.53	301.68	99.42
2.28	0.99	2.65	10.95	301.68	0.37	351.46	99.79
2.65	1.21	3.09	12.16	351.46	0.21	409.45	100.00
3.09	1.63	3.60	13.79	409.45	0.00	477.01	100.00
3.60	2.28	4.19	16.08	477.01	0.00	555.71	100.00
4.19	3.14	4.88	19.21	555.71	0.00	647.41	100.00
4.88	4.10	5.69	23.31	647.41	0.00	754.23	100.00
5.69	4.97	6.63	28.28	754.23	0.00	878.67	100.00



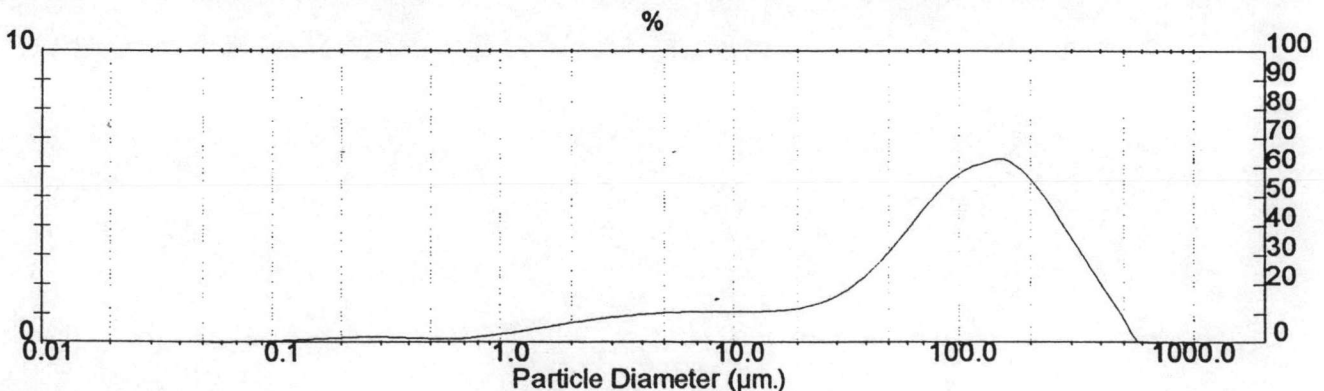
### Result: Analysis Report

Sample Details		
Sample ID: 5 DL 750/g	Run Number: 7	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 58	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 12.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.670 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0219 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.49 um	D (v, 0.5) = 93.90 um	D (v, 0.9) = 273.89 um
D [4, 3] = 119.65 um	D [3, 2] = 5.52 um	Span = 2.869E+00	Uniformity = 8.832E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.02	0.06	0.02	6.63	1.08	7.72	13.77
0.06	0.04	0.07	0.05	7.72	1.08	9.00	14.85
0.07	0.05	0.08	0.11	9.00	1.08	10.48	15.93
0.08	0.07	0.09	0.18	10.48	1.08	12.21	17.00
0.09	0.09	0.11	0.28	12.21	1.08	14.22	18.09
0.11	0.11	0.13	0.39	14.22	1.10	16.57	19.19
0.13	0.13	0.15	0.52	16.57	1.14	19.31	20.32
0.15	0.16	0.17	0.68	19.31	1.21	22.49	21.53
0.17	0.18	0.20	0.86	22.49	1.33	26.20	22.86
0.20	0.20	0.23	1.07	26.20	1.52	30.53	24.38
0.23	0.22	0.27	1.29	30.53	1.80	35.56	26.18
0.27	0.22	0.31	1.51	35.56	2.18	41.43	28.36
0.31	0.21	0.36	1.72	41.43	2.68	48.27	31.04
0.36	0.19	0.42	1.92	48.27	3.26	56.23	34.31
0.42	0.18	0.49	2.10	56.23	3.92	65.51	38.22
0.49	0.17	0.58	2.26	65.51	4.59	76.32	42.81
0.58	0.17	0.67	2.43	76.32	5.20	88.91	48.01
0.67	0.18	0.78	2.61	88.91	5.69	103.58	53.70
0.78	0.24	0.91	2.85	103.58	6.01	120.67	59.71
0.91	0.31	1.06	3.16	120.67	6.18	140.58	65.89
1.06	0.38	1.24	3.54	140.58	6.30	163.77	72.19
1.24	0.47	1.44	4.01	163.77	6.01	190.80	78.20
1.44	0.56	1.68	4.57	190.80	5.49	222.28	83.69
1.68	0.65	1.95	5.23	222.28	4.77	258.95	88.46
1.95	0.74	2.28	5.96	258.95	3.95	301.68	92.40
2.28	0.81	2.65	6.77	301.68	3.13	351.46	95.53
2.65	0.87	3.09	7.64	351.46	2.31	409.45	97.84
3.09	0.93	3.60	8.57	409.45	1.49	477.01	99.33
3.60	0.98	4.19	9.55	477.01	0.67	555.71	100.00
4.19	1.02	4.88	10.57	555.71	0.00	647.41	100.00
4.88	1.05	5.69	11.62	647.41	0.00	754.23	100.00
5.69	1.07	6.63	12.69	754.23	0.00	878.67	100.00



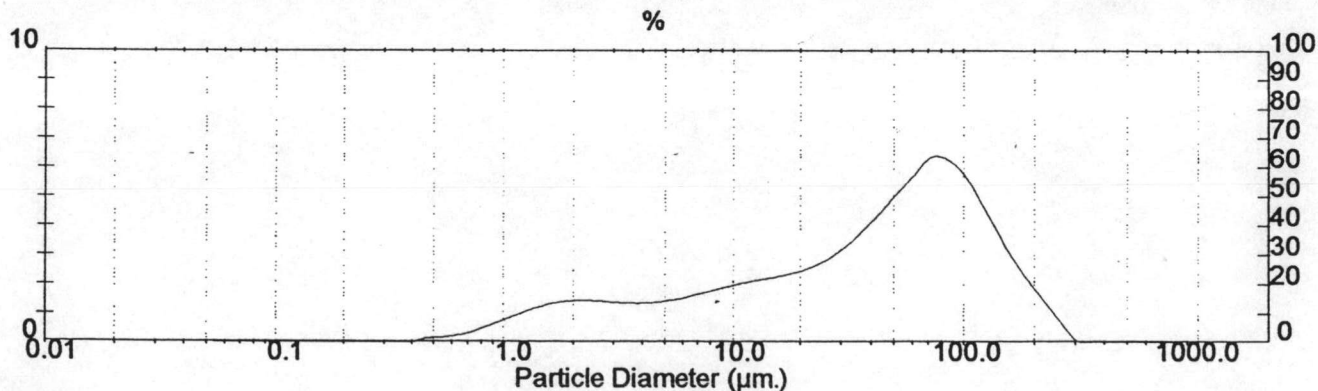
### Result: Analysis Report

Sample Details		
Sample ID: 5 DL 750/12	Run Number: 3	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 12	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 13.2 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.897 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0160 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.67 um	D (v, 0.5) = 44.33 um	D (v, 0.9) = 133.79 um
D [4, 3] = 57.79 um	D [3, 2] = 8.28 um	Span = 2.958E+00	Uniformity = 9.527E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	1.66	7.72	20.03
0.06	0.00	0.07	0.00	7.72	1.80	9.00	21.83
0.07	0.00	0.08	0.00	9.00	1.93	10.48	23.75
0.08	0.00	0.09	0.00	10.48	2.04	12.21	25.79
0.09	0.00	0.11	0.00	12.21	2.14	14.22	27.93
0.11	0.00	0.13	0.00	14.22	2.23	16.57	30.17
0.13	0.00	0.15	0.00	16.57	2.34	19.31	32.50
0.15	0.00	0.17	0.00	19.31	2.48	22.49	34.98
0.17	0.00	0.20	0.00	22.49	2.70	26.20	37.68
0.20	0.00	0.23	0.00	26.20	3.01	30.53	40.69
0.23	0.00	0.27	0.00	30.53	3.43	35.56	44.12
0.27	0.00	0.31	0.00	35.56	3.95	41.43	48.07
0.31	0.00	0.36	0.00	41.43	4.53	48.27	52.59
0.36	0.00	0.42	0.00	48.27	5.13	56.23	57.72
0.42	0.15	0.49	0.15	56.23	5.71	65.51	63.43
0.49	0.19	0.58	0.34	65.51	6.28	76.32	69.71
0.58	0.25	0.67	0.59	76.32	6.31	88.91	76.03
0.67	0.35	0.78	0.94	88.91	5.91	103.58	81.94
0.78	0.55	0.91	1.49	103.58	5.14	120.67	87.08
0.91	0.75	1.06	2.24	120.67	4.17	140.58	91.24
1.06	0.95	1.24	3.18	140.58	3.22	163.77	94.46
1.24	1.14	1.44	4.33	163.77	2.40	190.80	96.86
1.44	1.31	1.68	5.64	190.80	1.72	222.28	98.58
1.68	1.41	1.95	7.04	222.28	1.05	258.95	99.63
1.95	1.44	2.28	8.49	258.95	0.37	301.68	100.00
2.28	1.43	2.65	9.92	301.68	0.00	351.46	100.00
2.65	1.40	3.09	11.32	351.46	0.00	409.45	100.00
3.09	1.36	3.60	12.68	409.45	0.00	477.01	100.00
3.60	1.35	4.19	14.02	477.01	0.00	555.71	100.00
4.19	1.37	4.88	15.40	555.71	0.00	647.41	100.00
4.88	1.44	5.69	16.83	647.41	0.00	754.23	100.00
5.69	1.54	6.63	18.37	754.23	0.00	878.67	100.00





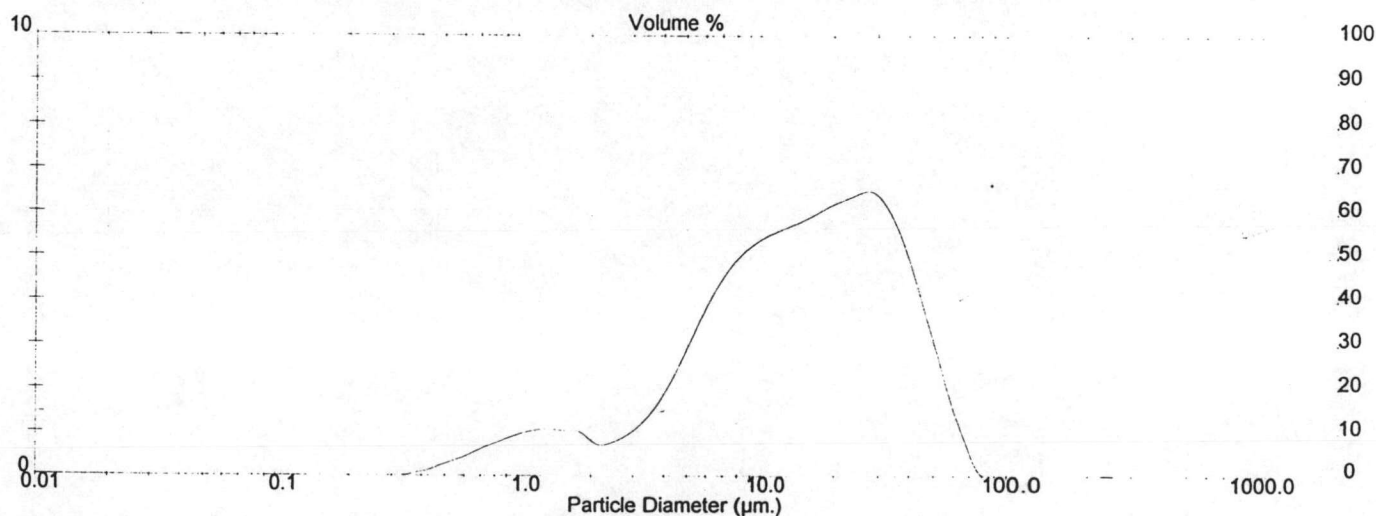
### Result: Analysis Report

Sample Details		
Sample ID: 5 DL 750/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 21	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.2 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.838 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -	Killed Result Channels: < 0.05 um; > 258.95 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0172 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9740 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.01 um	D (v, 0.5) = 14.67 um	D (v, 0.9) = 39.88 um
D [4, 3] = 18.65 um	D [3, 2] = 6.16 um	Span = 2.513E+00	Uniformity = 7.825E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.56	7.72	27.28
0.06	0.00	0.07	0.00	7.72	5.03	9.00	32.31
0.07	0.00	0.08	0.00	9.00	5.33	10.48	37.64
0.08	0.00	0.09	0.00	10.48	5.52	12.21	43.16
0.09	0.00	0.11	0.00	12.21	5.68	14.22	48.84
0.11	0.00	0.13	0.00	14.22	5.84	16.57	54.68
0.13	0.00	0.15	0.00	16.57	6.04	19.31	60.72
0.15	0.00	0.17	0.00	19.31	6.24	22.49	66.96
0.17	0.00	0.20	0.00	22.49	6.39	26.20	73.35
0.20	0.00	0.23	0.00	26.20	6.49	30.53	79.84
0.23	0.00	0.27	0.00	30.53	6.10	35.56	85.95
0.27	0.00	0.31	0.00	35.56	5.28	41.43	91.22
0.31	0.02	0.36	0.02	41.43	4.08	48.27	95.30
0.36	0.10	0.42	0.11	48.27	2.73	56.23	98.03
0.42	0.20	0.49	0.31	56.23	1.45	65.51	99.48
0.49	0.34	0.58	0.65	65.51	0.50	76.32	99.98
0.58	0.48	0.67	1.13	76.32	0.00	88.91	99.98
0.67	0.66	0.78	1.80	88.91	0.00	103.58	99.98
0.78	0.80	0.91	2.60	103.58	0.00	120.67	99.98
0.91	0.94	1.06	3.54	120.67	0.00	140.58	99.98
1.06	1.04	1.24	4.57	140.58	0.00	163.77	99.98
1.24	1.07	1.44	5.65	163.77	0.00	190.80	99.98
1.44	1.05	1.68	6.70	190.80	0.00	222.23	99.98
1.68	1.00	1.95	7.70	222.28	0.02	258.95	100.00
1.95	0.73	2.28	8.43	258.95	0.00	301.68	100.00
2.28	0.78	2.65	9.21	301.68	0.00	351.46	100.00
2.65	0.96	3.09	10.17	351.46	0.00	409.45	100.00
3.09	1.28	3.60	11.45	409.45	0.00	477.01	100.00
3.60	1.77	4.19	13.23	477.01	0.00	555.71	100.00
4.19	2.42	4.88	15.64	555.71	0.00	647.41	100.00
4.88	3.17	5.69	18.81	647.41	0.00	754.23	100.00
5.69	3.92	6.63	22.72	754.23	0.00	878.67	100.00





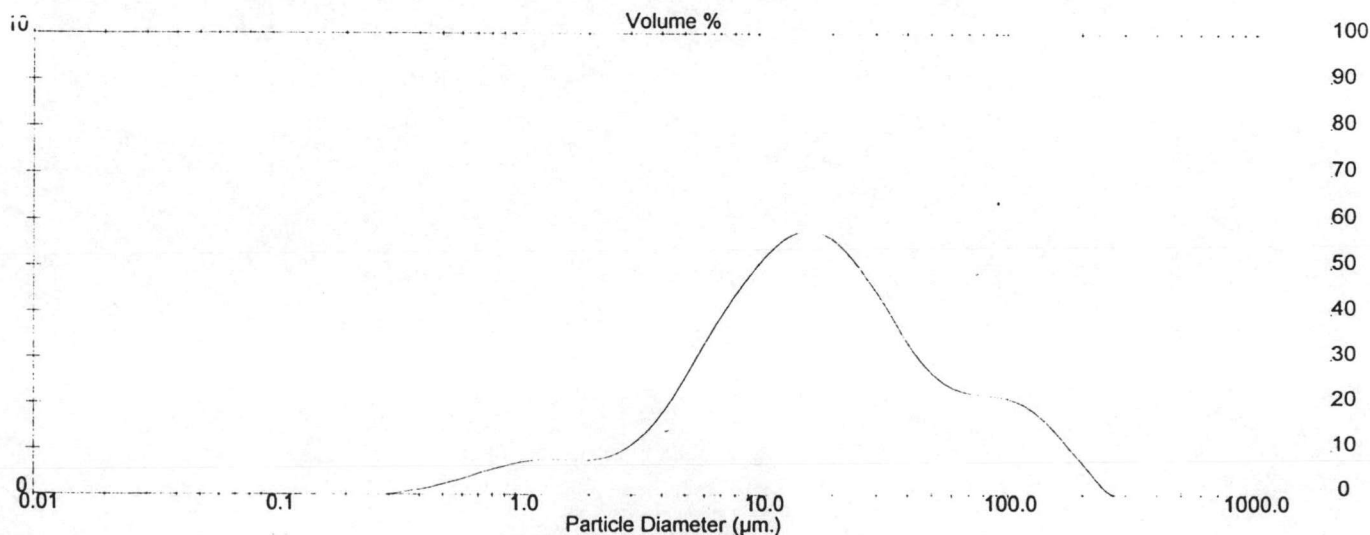
### Result: Analysis Report

Sample Details		
Sample ID: I.5 P 5 250/9	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 55	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 18.5 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.364 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0211 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8411 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.71 um	D (v, 0.5) = 16.62 um	D (v, 0.9) = 83.99 um
D [4, 3] = 31.30 um	D [3, 2] = 7.13 um	Span = 4.830E+00	Uniformity = 1.392E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	3.97	7.72	23.70
0.06	0.00	0.07	0.00	7.72	4.50	9.00	28.21
0.07	0.00	0.08	0.00	9.00	4.96	10.48	33.17
0.08	0.00	0.09	0.00	10.48	5.34	12.21	38.51
0.09	0.00	0.11	0.00	12.21	5.62	14.22	44.13
0.11	0.00	0.13	0.00	14.22	5.75	16.57	49.88
0.13	0.00	0.15	0.00	16.57	5.72	19.31	55.61
0.15	0.00	0.17	0.00	19.31	5.51	22.49	61.11
0.17	0.00	0.20	0.00	22.49	5.14	26.20	66.25
0.20	0.00	0.23	0.00	26.20	4.66	30.53	70.91
0.23	0.00	0.27	0.00	30.53	4.12	35.56	75.03
0.27	0.01	0.31	0.01	35.56	3.50	41.43	78.53
0.31	0.06	0.36	0.07	41.43	2.97	48.27	81.50
0.36	0.11	0.42	0.19	48.27	2.58	56.23	84.08
0.42	0.19	0.49	0.37	56.23	2.34	65.51	86.42
0.49	0.28	0.58	0.65	65.51	2.22	76.32	88.64
0.58	0.38	0.67	1.03	76.32	2.17	88.91	90.80
0.67	0.49	0.78	1.52	88.91	2.12	103.58	92.92
0.78	0.59	0.91	2.11	103.58	2.00	120.67	94.93
0.91	0.67	1.06	2.78	120.67	1.78	140.58	96.71
1.06	0.74	1.24	3.52	140.58	1.44	163.77	98.15
1.24	0.77	1.44	4.29	163.77	1.03	190.80	99.18
1.44	0.76	1.68	5.05	190.80	0.62	222.28	99.80
1.68	0.75	1.95	5.80	222.28	0.20	258.95	100.00
1.95	0.77	2.28	6.57	258.95	0.00	301.68	100.00
2.28	0.84	2.65	7.41	301.68	0.00	351.46	100.00
2.65	1.01	3.09	8.42	351.46	0.00	409.45	100.00
3.09	1.29	3.60	9.71	409.45	0.00	477.01	100.00
3.60	1.69	4.19	11.40	477.01	0.00	555.71	100.00
4.19	2.19	4.88	13.59	555.71	0.00	647.41	100.00
4.88	2.77	5.69	16.36	647.41	0.00	754.23	100.00
5.69	3.38	6.63	19.74	754.23	0.00	878.67	100.00



### Result: Analysis Report

#### Sample Details

Sample ID: 4.5 P 85 250 / 12  
 Sample File: PARI  
 Sample Path: A:\

Run Number: 4  
 Record Number: 17

Measurement Date: Wed, Aug 01, 2000  
 Analysis Date: Wed, Aug 01, 2000  
 Result Source: Analysed

Sample Notes: Test by Pranee : Scientific and Tecnological Research  
 Equipment Center Chulalongkorn University  
 Liquid medium : water

#### System Details

Range Lens: 300RF mm  
 Presentation: 3OHD  
 Analysis Model: Polydisperse  
 Modifications: Active --

Beam Length: 2.40 mm  
 [Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2

Sampler: MS17

Obscuration: 20.2 %  
 Residual: 0.412 %

#### Result Statistics

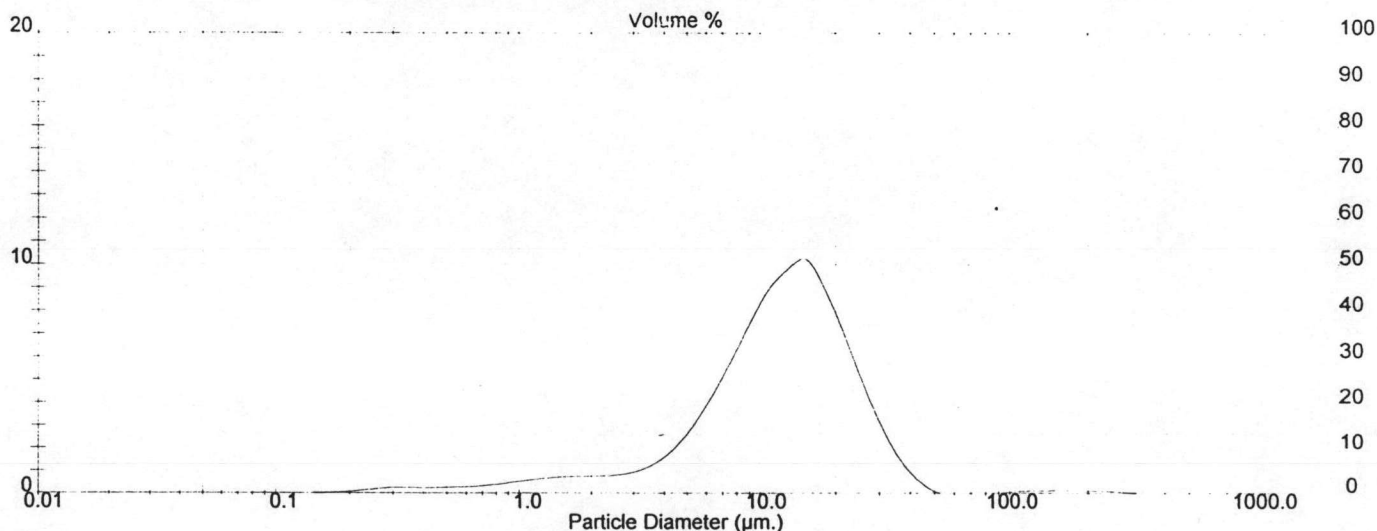
Distribution Type: Volume  
 Mean Diameters:  
 D [4, 3] = 14.73 um

Concentration = 0.0205 %Vol  
 D (v, 0.1) = 3.75 um  
 D [3, 2] = 5.24 um

Density = 1.000 g / cub. cm  
 D (v, 0.5) = 12.33 um  
 Span = 1.726E+00

Specific S.A. = 1.1459 sq. m / g  
 D (v, 0.9) = 25.03 um  
 Uniformity = 6.206E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.30	7.72	25.48
0.06	0.00	0.07	0.00	7.72	6.70	9.00	32.18
0.07	0.00	0.08	0.01	9.00	8.05	10.48	40.23
0.08	0.01	0.09	0.01	10.48	9.15	12.21	49.38
0.09	0.01	0.11	0.02	12.21	9.85	14.22	59.23
0.11	0.01	0.13	0.04	14.22	10.19	16.57	69.42
0.13	0.02	0.15	0.06	16.57	9.07	19.31	78.49
0.15	0.04	0.17	0.10	19.31	7.41	22.49	85.91
0.17	0.07	0.20	0.17	22.49	5.56	26.20	91.47
0.20	0.12	0.23	0.29	26.20	3.79	30.53	95.26
0.23	0.19	0.27	0.48	30.53	2.29	35.56	97.56
0.27	0.25	0.31	0.73	35.56	1.17	41.43	98.73
0.31	0.26	0.36	0.99	41.43	0.43	48.27	99.16
0.36	0.25	0.42	1.24	48.27	0.04	56.23	99.20
0.42	0.25	0.49	1.49	56.23	0.00	65.51	99.20
0.49	0.28	0.58	1.77	65.51	0.00	76.32	99.20
0.58	0.30	0.67	2.07	76.32	0.00	88.91	99.20
0.67	0.35	0.78	2.43	88.91	0.05	103.58	99.25
0.78	0.43	0.91	2.86	103.58	0.10	120.67	99.35
0.91	0.52	1.06	3.37	120.67	0.12	140.58	99.47
1.06	0.60	1.24	3.98	140.58	0.13	163.77	99.59
1.24	0.68	1.44	4.65	163.77	0.13	190.80	99.72
1.44	0.73	1.68	5.38	190.80	0.12	222.28	99.84
1.68	0.75	1.95	6.13	222.28	0.09	258.95	99.93
1.95	0.76	2.28	6.89	258.95	0.05	301.68	99.98
2.28	0.79	2.65	7.67	301.68	0.02	351.46	100.00
2.65	0.88	3.09	8.55	351.46	0.00	409.45	100.00
3.09	1.10	3.60	9.65	409.45	0.00	477.01	100.00
3.60	1.49	4.19	11.14	477.01	0.00	555.71	100.00
4.19	2.09	4.88	13.23	555.71	0.00	647.41	100.00
4.88	2.94	5.69	16.17	647.41	0.00	754.23	100.00
5.69	4.02	6.63	20.18	754.23	0.00	878.67	100.00



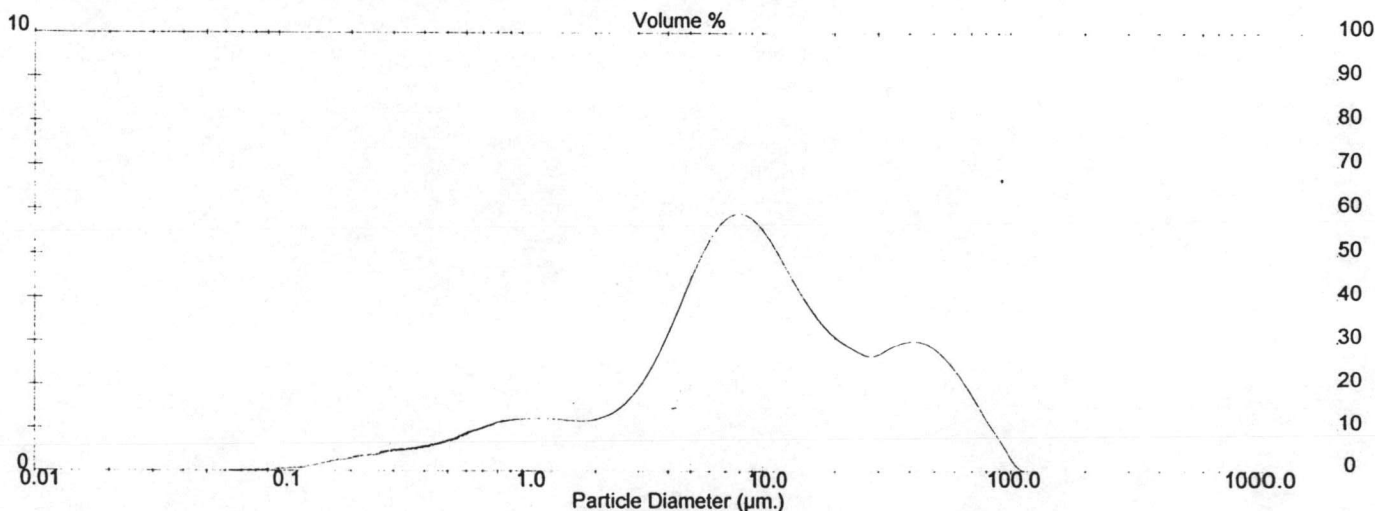
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 P85 250/15	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.411 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --	Killed Result Channels: < 0.05 um; > 222.28 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0156 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 2.6195 sq. m / g
Mean Diameters:	D (v, 0.1) = 0.86 um	D (v, 0.5) = 8.60 um	D (v, 0.9) = 44.44 um
D [4, 3] = 15.95 um	D [3, 2] = 2.29 um	Span = 5.068E+00	Uniformity = 1.403E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.01	0.06	0.01	6.63	5.80	7.72	45.85
0.06	0.02	0.07	0.02	7.72	5.88	9.00	51.73
0.07	0.03	0.08	0.05	9.00	5.62	10.48	57.35
0.08	0.04	0.09	0.09	10.48	5.13	12.21	62.48
0.09	0.06	0.11	0.15	12.21	4.51	14.22	67.00
0.11	0.09	0.13	0.24	14.22	3.91	16.57	70.90
0.13	0.13	0.15	0.37	16.57	3.40	19.31	74.30
0.15	0.20	0.17	0.57	19.31	3.03	22.49	77.33
0.17	0.31	0.20	0.88	22.49	2.81	26.20	80.14
0.20	0.49	0.23	1.37	26.20	2.67	30.53	82.80
0.23	0.72	0.27	2.10	30.53	2.84	35.56	85.64
0.27	0.92	0.31	3.01	35.56	2.98	41.43	88.62
0.31	0.98	0.36	3.99	41.43	2.98	48.27	91.60
0.36	0.96	0.42	4.95	48.27	2.77	56.23	94.36
0.42	0.99	0.49	5.94	56.23	2.33	65.51	96.69
0.49	1.07	0.58	7.01	65.51	1.73	76.32	98.42
0.58	1.08	0.67	8.09	76.32	1.08	88.91	99.50
0.67	1.15	0.78	9.23	88.91	0.48	103.58	99.98
0.78	1.17	0.91	10.40	103.58	0.02	120.67	100.00
0.91	1.20	1.06	11.61	120.67	0.00	140.58	100.00
1.06	1.22	1.24	12.83	140.58	0.00	163.77	100.00
1.24	1.21	1.44	14.04	163.77	0.00	190.80	100.00
1.44	1.18	1.68	15.22	190.80	0.00	222.28	100.00
1.68	1.17	1.95	16.39	222.28	0.00	258.95	100.00
1.95	1.24	2.28	17.63	258.95	0.00	301.68	100.00
2.28	1.42	2.65	19.05	301.68	0.00	351.46	100.00
2.65	1.77	3.09	20.82	351.46	0.00	409.45	100.00
3.09	2.31	3.60	23.13	409.45	0.00	477.01	100.00
3.60	3.02	4.19	26.15	477.01	0.00	555.71	100.00
4.19	3.84	4.88	29.99	555.71	0.00	647.41	100.00
4.88	4.68	5.69	34.67	647.41	0.00	754.23	100.00
5.69	5.38	6.63	40.05	754.23	0.00	878.67	100.00





## Result: Analysis Report

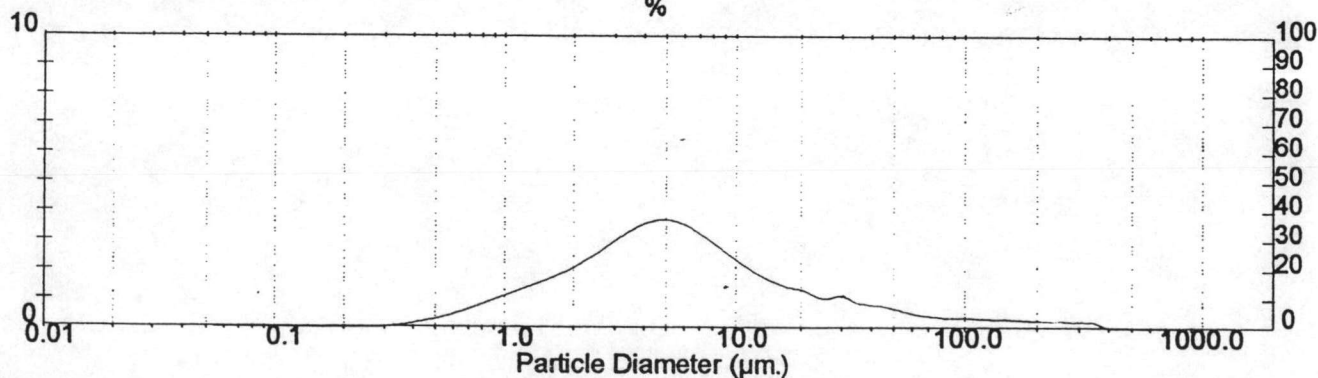
Sample Details		
Sample ID: 1.5-P85 500/g	Run Number: 7	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 44	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 19.0 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.982 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0152 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.88 um	D (v, 0.5) = 17.49 um	D (v, 0.9) = 53.80 um
D [4, 3] = 55.97 um	D [3, 2] = 5.06 um	Span = 8.684E+00	Uniformity = 2.899E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	3.19	7.72	38.89
0.06	0.00	0.07	0.00	7.72	2.81	9.00	41.71
0.07	0.00	0.08	0.00	9.00	2.42	10.48	44.12
0.08	0.00	0.09	0.00	10.48	2.06	12.21	46.18
0.09	0.00	0.11	0.00	12.21	1.77	14.22	47.95
0.11	0.00	0.13	0.00	14.22	1.55	16.57	49.49
0.13	0.00	0.15	0.00	16.57	1.39	19.31	50.89
0.15	0.00	0.17	0.00	19.31	1.29	22.49	52.18
0.17	0.00	0.20	0.00	22.49	1.06	26.20	53.24
0.20	0.00	0.23	0.00	26.20	1.09	30.53	54.33
0.23	0.00	0.27	0.00	30.53	1.23	35.56	55.56
0.27	0.04	0.31	0.04	35.56	1.51	41.43	57.07
0.31	0.10	0.36	0.14	41.43	1.94	48.27	59.01
0.36	0.17	0.42	0.31	48.27	2.52	56.23	61.53
0.42	0.27	0.49	0.58	56.23	3.22	65.51	64.75
0.49	0.39	0.58	0.96	65.51	4.01	76.32	68.75
0.58	0.53	0.67	1.49	76.32	4.84	88.91	73.59
0.67	0.70	0.78	2.19	88.91	5.10	103.58	78.69
0.78	0.89	0.91	3.08	103.58	4.86	120.67	83.54
0.91	1.09	1.06	4.17	120.67	4.27	140.58	87.81
1.06	1.28	1.24	5.46	140.58	3.58	163.77	91.39
1.24	1.48	1.44	6.94	163.77	2.92	190.80	94.31
1.44	1.68	1.68	8.62	190.80	2.27	222.28	96.58
1.68	1.91	1.95	10.53	222.28	1.66	258.95	98.24
1.95	2.18	2.28	12.71	258.95	1.09	301.68	99.33
2.28	2.50	2.65	15.22	301.68	0.56	351.46	99.89
2.65	2.87	3.09	18.08	351.46	0.11	409.45	100.00
3.09	3.23	3.60	21.31	409.45	0.00	477.01	100.00
3.60	3.52	4.19	24.83	477.01	0.00	555.71	100.00
4.19	3.69	4.88	28.51	555.71	0.00	647.41	100.00
4.88	3.68	5.69	32.19	647.41	0.00	754.23	100.00
5.69	3.50	6.63	35.70	754.23	0.00	878.67	100.00

%





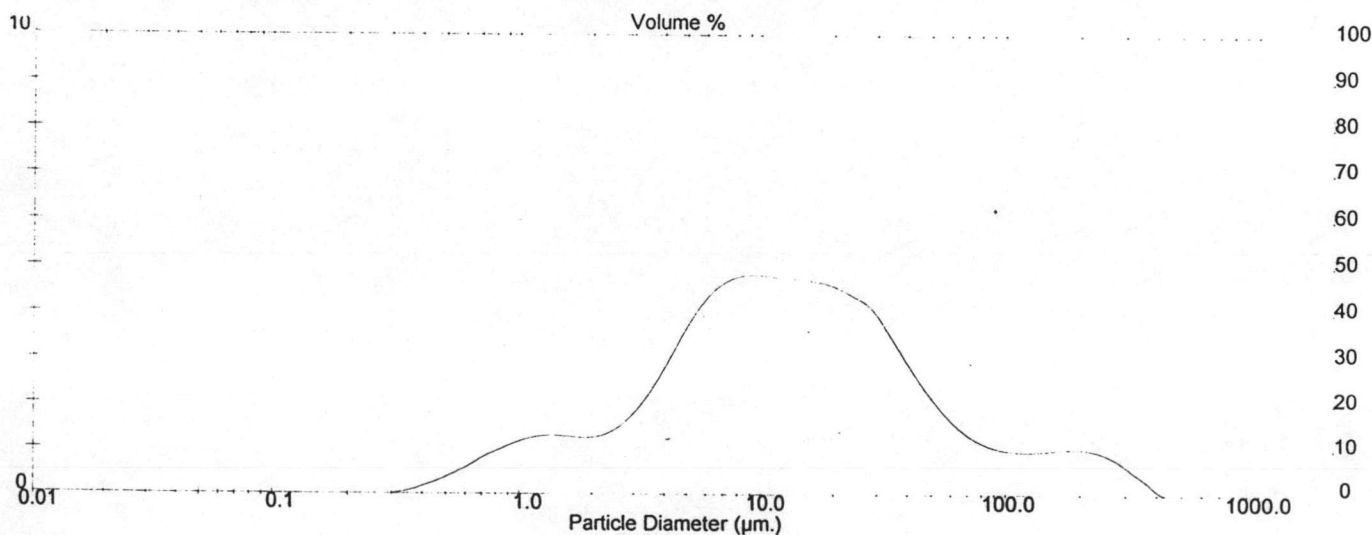
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 P 5 500 / 12	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 23	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 26.8 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.439 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0233 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1679 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.03 um	D (v, 0.5) = 12.45 um	D (v, 0.9) = 70.81 um
D [4, 3] = 30.78 um	D [3, 2] = 5.14 um	Span = 5.523E+00	Uniformity = 2.017E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.66	7.72	35.00
0.06	0.00	0.07	0.00	7.72	4.79	9.00	39.80
0.07	0.00	0.08	0.00	9.00	4.81	10.48	44.61
0.08	0.00	0.09	0.00	10.48	4.78	12.21	49.39
0.09	0.00	0.11	0.00	12.21	4.74	14.22	54.13
0.11	0.00	0.13	0.00	14.22	4.71	16.57	58.84
0.13	0.00	0.15	0.00	16.57	4.65	19.31	63.49
0.15	0.00	0.17	0.00	19.31	4.54	22.49	68.03
0.17	0.00	0.20	0.00	22.49	4.35	26.20	72.38
0.20	0.00	0.23	0.00	26.20	4.12	30.53	76.50
0.23	0.00	0.27	0.00	30.53	3.62	35.56	80.11
0.27	0.00	0.31	0.00	35.56	3.06	41.43	83.17
0.31	0.06	0.36	0.06	41.43	2.50	48.27	85.67
0.36	0.16	0.42	0.22	48.27	2.01	56.23	87.69
0.42	0.29	0.49	0.51	56.23	1.61	65.51	89.30
0.49	0.45	0.58	0.97	65.51	1.31	76.32	90.61
0.58	0.63	0.67	1.59	76.32	1.11	88.91	91.73
0.67	0.84	0.78	2.43	88.91	1.00	103.58	92.73
0.78	1.00	0.91	3.44	103.58	0.95	120.67	93.68
0.91	1.15	1.06	4.59	120.67	0.95	140.58	94.63
1.06	1.26	1.24	5.85	140.58	0.98	163.77	95.60
1.24	1.30	1.44	7.14	163.77	1.01	190.80	96.61
1.44	1.28	1.68	8.42	190.80	1.01	222.28	97.62
1.68	1.25	1.95	9.67	222.28	0.93	258.95	98.55
1.95	1.28	2.28	10.95	258.95	0.75	301.68	99.30
2.28	1.41	2.65	12.36	301.68	0.48	351.46	99.79
2.65	1.69	3.09	14.05	351.46	0.21	409.45	100.00
3.09	2.11	3.60	16.17	409.45	0.00	477.01	100.00
3.60	2.67	4.19	18.83	477.01	0.00	555.71	100.00
4.19	3.28	4.88	22.11	555.71	0.00	647.41	100.00
4.88	3.88	5.69	25.99	647.41	0.00	754.23	100.00
5.69	4.35	6.63	30.35	754.23	0.00	878.67	100.00



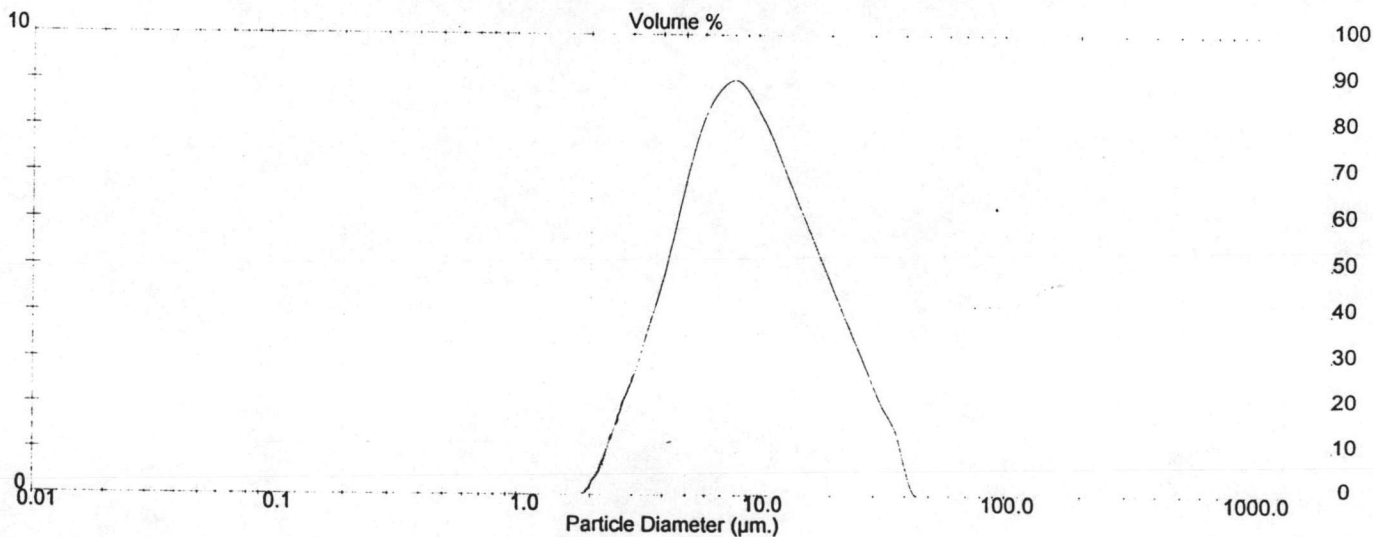
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 P&S 500/15	Run Number: 6	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 8.9 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 5.551 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0088 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8110 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.89 um	D (v, 0.5) = 8.76 um	D (v, 0.9) = 21.91 um
D [4, 3] = 11.07 um	D [3, 2] = 7.40 um	Span = 2.056E+00	Uniformity = 6.219E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	8.86	7.72	42.54
0.06	0.00	0.07	0.00	7.72	8.98	9.00	51.52
0.07	0.00	0.08	0.00	9.00	8.49	10.48	60.01
0.08	0.00	0.09	0.00	10.48	7.83	12.21	67.85
0.09	0.00	0.11	0.00	12.21	6.99	14.22	74.83
0.11	0.00	0.13	0.00	14.22	6.14	16.57	80.97
0.13	0.00	0.15	0.00	16.57	5.29	19.31	86.26
0.15	0.00	0.17	0.00	19.31	4.44	22.49	90.71
0.17	0.00	0.20	0.00	22.49	3.60	26.20	94.30
0.20	0.00	0.23	0.00	26.20	2.75	30.53	97.05
0.23	0.00	0.27	0.00	30.53	1.90	35.56	98.95
0.27	0.00	0.31	0.00	35.56	1.05	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.00	0.49	0.00	56.23	0.00	65.51	100.00
0.49	0.00	0.58	0.00	65.51	0.00	76.32	100.00
0.58	0.00	0.67	0.00	76.32	0.00	88.91	100.00
0.67	0.00	0.78	0.00	88.91	0.00	103.58	100.00
0.78	0.00	0.91	0.00	103.58	0.00	120.67	100.00
0.91	0.00	1.06	0.00	120.67	0.00	140.58	100.00
1.06	0.00	1.24	0.00	140.58	0.00	163.77	100.00
1.24	0.00	1.44	0.00	163.77	0.00	190.80	100.00
1.44	0.00	1.68	0.00	190.80	0.00	222.28	100.00
1.68	0.00	1.95	0.00	222.28	0.00	258.95	100.00
1.95	0.00	2.28	0.01	258.95	0.00	301.68	100.00
2.28	2.12	2.65	2.12	301.68	0.00	351.46	100.00
2.65	2.46	3.09	4.58	351.46	0.00	409.45	100.00
3.09	3.29	3.60	7.87	409.45	0.00	477.01	100.00
3.60	4.43	4.19	12.31	477.01	0.00	555.71	100.00
4.19	5.81	4.88	18.11	555.71	0.00	647.41	100.00
4.88	7.25	5.69	25.36	647.41	0.00	754.23	100.00
5.69	8.31	6.63	33.68	754.23	0.00	878.67	100.00



Mastersizer S long bed Ver. 2.  
Serial Number:

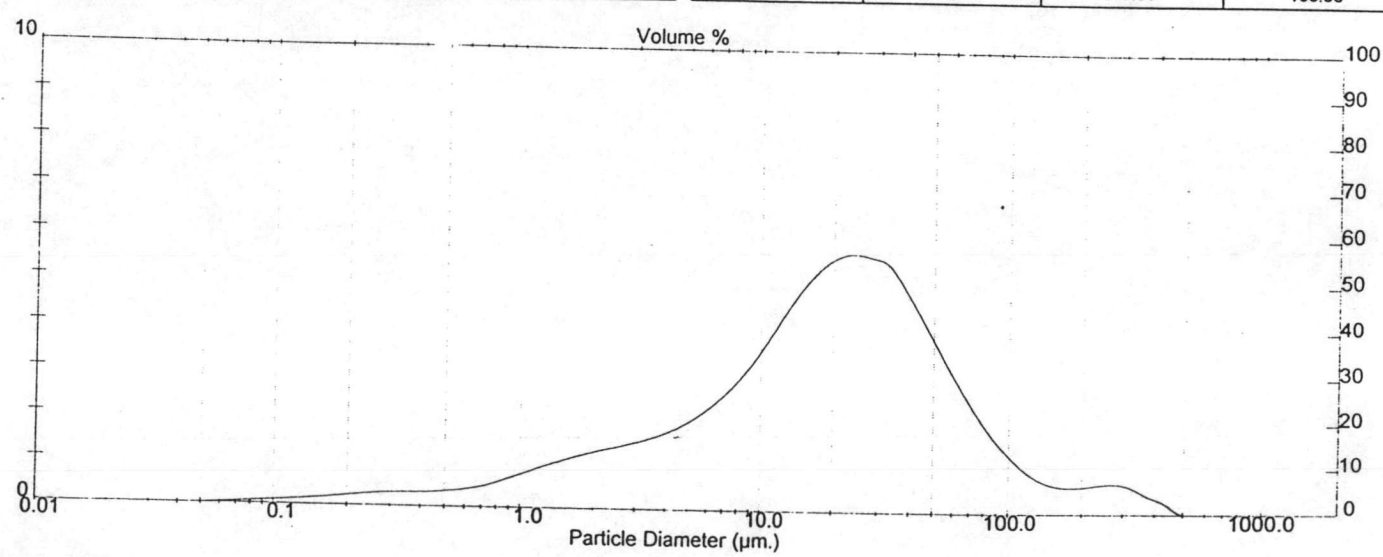
### Result: Analysis Report

Sample ID: 1.5 P85 750/9 Sample File: PARI Sample Path: A:\ Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Centre Chulalongkorn University Liquid medium : water	<b>Sample Details</b> Run Number: 1 Record Number: 21	Measurement Date: Fri, Mar 02, 2000 Analysis Date: Fri, Mar 02, 2000 Result Source: Analysed
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Range Lens: 300RF mm Presentation: 3OHD Analysis Model: Polydisperse Modifications: Active -	Beam Length: 2.40 mm [Particle R.I. = ( 1.5295, 0.1000); Killed Data Channels: Low 0; High 2	Dispersant R.I. = 1.3300 Sampler: MS17	Obscuration: 8.9 % Residual: 0.657 %
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Distribution Type: Volume Mean Diameters: D [4, 3] = 35.39 um	Concentration = 0.0081 %Vol D (v, 0.1) = 2.11 um D [3, 2] = 3.66 um	Density = 1.000 g / cub. cm D (v, 0.5) = 19.20 um Span = 3.716E+00	Specific S.A. = 1.6412 sq. m / g D (v, 0.9) = 73.45 um Uniformity = 1.418E+00
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Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.02	0.06	0.02	6.63	2.56	7.72	25.30
0.06	0.04	0.07	0.06	7.72	2.94	9.00	28.24
0.07	0.06	0.08	0.11	9.00	3.39	10.48	31.63
0.08	0.08	0.09	0.19	10.48	3.90	12.21	35.53
0.09	0.10	0.11	0.29	12.21	4.43	14.22	39.96
0.11	0.12	0.13	0.41	14.22	4.92	16.57	44.88
0.13	0.15	0.15	0.56	16.57	5.31	19.31	50.19
0.15	0.18	0.17	0.73	19.31	5.56	22.49	55.75
0.17	0.21	0.20	0.94	22.49	5.64	26.20	61.39
0.20	0.24	0.23	1.18	26.20	5.57	30.53	66.96
0.23	0.28	0.27	1.46	30.53	5.41	35.56	72.37
0.27	0.30	0.31	1.76	35.56	4.89	41.43	77.26
0.31	0.31	0.36	2.07	41.43	4.28	48.27	81.54
0.36	0.31	0.42	2.38	48.27	3.63	56.23	85.17
0.42	0.33	0.49	2.71	56.23	2.99	65.51	88.16
0.49	0.36	0.58	3.07	65.51	2.38	76.32	90.55
0.58	0.41	0.67	3.48	76.32	1.84	88.91	92.39
0.67	0.48	0.78	3.96	88.91	1.39	103.58	93.78
0.78	0.60	0.91	4.55	103.58	1.04	120.67	94.82
0.91	0.72	1.06	5.27	120.67	0.79	140.58	95.60
1.06	0.85	1.24	6.12	140.58	0.64	163.77	96.24
1.24	0.98	1.44	7.10	163.77	0.59	190.80	96.84
1.44	1.09	1.68	8.19	190.80	0.62	222.28	97.45
1.68	1.19	1.95	9.38	222.28	0.66	259.95	98.12
1.95	1.28	2.28	10.66	259.95	0.67	301.68	98.79
2.28	1.36	2.65	12.01	301.68	0.60	351.46	99.39
2.65	1.44	3.09	13.45	351.46	0.40	409.45	99.79
3.09	1.54	3.60	14.99	409.45	0.21	477.01	100.00
3.60	1.66	4.19	16.66	477.01	0.00	555.71	100.00
4.19	1.82	4.88	18.47	555.71	0.00	647.41	100.00
4.88	2.01	5.69	20.48	647.41	0.00	754.23	100.00
5.69	2.25	6.63	22.74	754.23	0.00	878.67	100.00



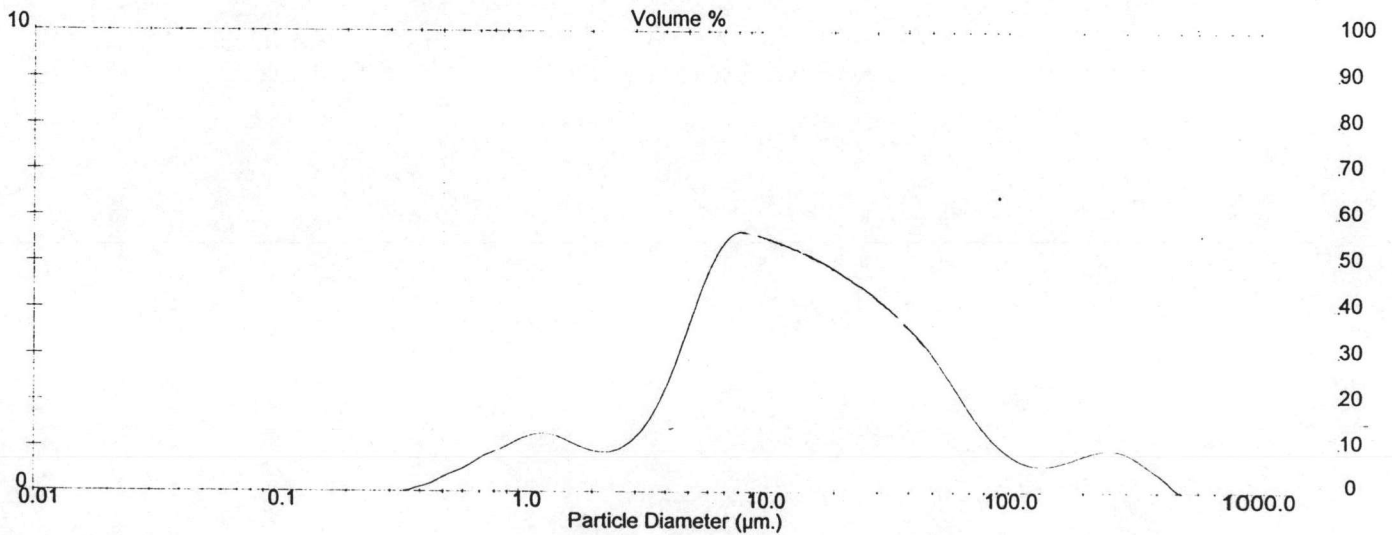
**Result: Analysis Report**

Sample Details		
Sample ID: I.5.P45 750/12	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 58	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.308 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0154 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0651 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.38 um	D (v, 0.5) = 12.68 um	D (v, 0.9) = 69.18 um
D [4, 3] = 33.55 um	D [3, 2] = 5.63 um	Span = 5.269E+00	Uniformity = 2.164E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.47	7.72	32.68
0.06	0.00	0.07	0.00	7.72	5.65	9.00	38.33
0.07	0.00	0.08	0.00	9.00	5.44	10.48	43.77
0.08	0.00	0.09	0.00	10.48	5.05	12.21	48.83
0.09	0.00	0.11	0.00	12.21	4.63	14.22	53.46
0.11	0.00	0.13	0.00	14.22	4.28	16.57	57.73
0.13	0.00	0.15	0.00	16.57	4.04	19.31	61.77
0.15	0.00	0.17	0.00	19.31	3.90	22.49	65.67
0.17	0.00	0.20	0.00	22.49	3.85	26.20	69.51
0.20	0.00	0.23	0.00	26.20	3.84	30.53	73.36
0.23	0.00	0.27	0.00	30.53	3.82	35.56	77.18
0.27	0.00	0.31	0.00	35.56	3.66	41.43	80.84
0.31	0.01	0.36	0.01	41.43	3.33	48.27	84.17
0.36	0.10	0.42	0.11	48.27	2.85	56.23	87.02
0.42	0.22	0.49	0.33	56.23	2.30	65.51	89.32
0.49	0.40	0.58	0.73	65.51	1.74	76.32	91.06
0.58	0.56	0.67	1.28	76.32	1.27	88.91	92.33
0.67	0.79	0.78	2.07	88.91	0.91	103.58	93.23
0.78	0.94	0.91	3.01	103.58	0.68	120.67	93.91
0.91	1.13	1.06	4.14	120.67	0.59	140.58	94.50
1.06	1.26	1.24	5.40	140.58	0.61	163.77	95.11
1.24	1.28	1.44	6.68	163.77	0.71	190.80	95.82
1.44	1.16	1.68	7.84	190.80	0.84	222.28	96.66
1.68	1.00	1.95	8.84	222.28	0.93	258.95	97.59
1.95	0.90	2.28	9.73	258.95	0.91	301.68	98.50
2.28	0.91	2.65	10.65	301.68	0.76	351.46	99.26
2.65	1.11	3.09	11.76	351.46	0.50	409.45	99.77
3.09	1.50	3.60	13.26	409.45	0.23	477.01	100.00
3.60	2.13	4.19	15.39	477.01	0.00	555.71	100.00
4.19	2.98	4.88	18.37	555.71	0.00	647.41	100.00
4.88	3.97	5.69	22.34	647.41	0.00	754.23	100.00
5.69	4.88	6.63	27.22	754.23	0.00	878.67	100.00





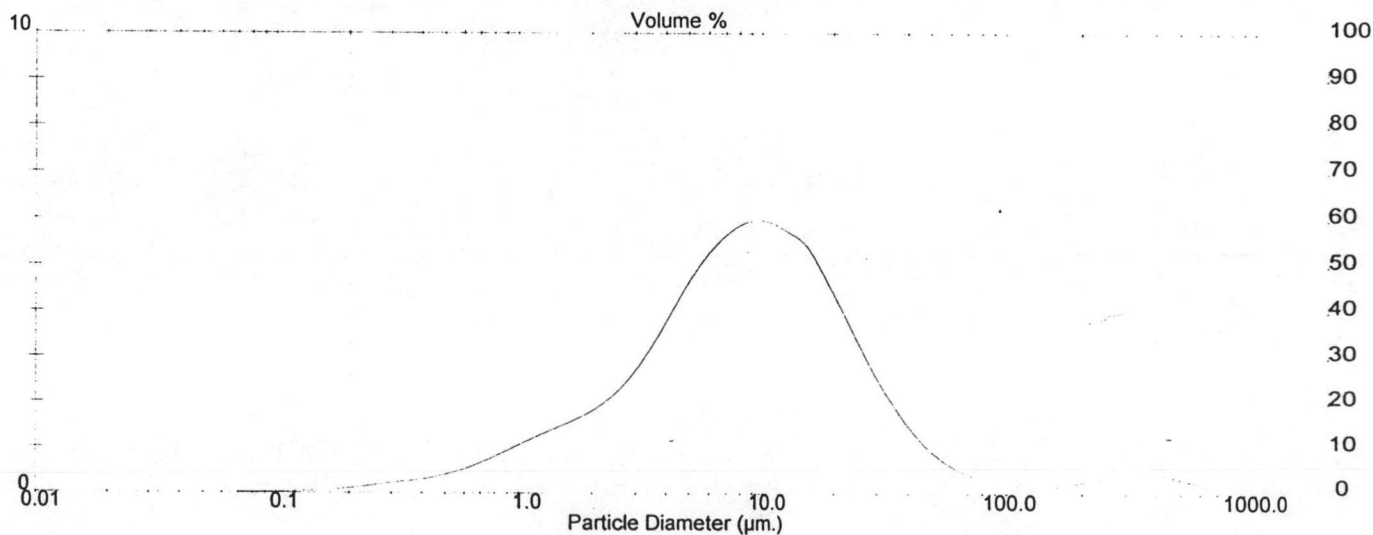
**Result: Analysis Report**

Sample Details		
Sample ID: I.5 P39 750 / 15	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 12	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 18.5 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.354 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0128 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.6471 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.76 um	D (v, 0.5) = 8.88 um	D (v, 0.9) = 32.76 um
D [4, 3] = 24.20 um	D [3, 2] = 3.64 um	Span = 3.492E+00	Uniformity = 2.240E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.69	7.72	44.61
0.06	0.01	0.07	0.01	7.72	5.90	9.00	50.52
0.07	0.02	0.08	0.03	9.00	5.97	10.48	56.49
0.08	0.02	0.09	0.05	10.48	5.90	12.21	62.38
0.09	0.03	0.11	0.08	12.21	5.71	14.22	68.09
0.11	0.04	0.13	0.12	14.22	5.46	16.57	73.55
0.13	0.05	0.15	0.17	16.57	4.89	19.31	78.44
0.15	0.07	0.17	0.24	19.31	4.21	22.49	82.65
0.17	0.10	0.20	0.34	22.49	3.49	26.20	86.14
0.20	0.13	0.23	0.47	26.20	2.79	30.53	88.93
0.23	0.17	0.27	0.64	30.53	2.16	35.56	91.09
0.27	0.22	0.31	0.86	35.56	1.62	41.43	92.70
0.31	0.26	0.36	1.12	41.43	1.18	48.27	93.89
0.36	0.30	0.42	1.42	48.27	0.84	56.23	94.73
0.42	0.36	0.49	1.78	56.23	0.59	65.51	95.32
0.49	0.46	0.58	2.24	65.51	0.42	76.32	95.74
0.58	0.56	0.67	2.80	76.32	0.30	88.91	96.04
0.67	0.70	0.78	3.50	88.91	0.22	103.58	96.26
0.78	0.87	0.91	4.36	103.58	0.18	120.67	96.44
0.91	1.04	1.06	5.40	120.67	0.16	140.58	96.60
1.06	1.21	1.24	6.61	140.58	0.17	163.77	96.77
1.24	1.37	1.44	7.98	163.77	0.21	190.80	96.97
1.44	1.52	1.68	9.50	190.80	0.27	222.28	97.25
1.68	1.68	1.95	11.18	222.28	0.35	258.95	97.60
1.95	1.89	2.28	13.06	258.95	0.42	301.68	98.03
2.28	2.17	2.65	15.24	301.68	0.47	351.46	98.49
2.65	2.57	3.09	17.81	351.46	0.47	409.45	98.96
3.09	3.06	3.60	20.87	409.45	0.41	477.01	99.37
3.60	3.64	4.19	24.51	477.01	0.31	555.71	99.68
4.19	4.25	4.88	28.76	555.71	0.21	647.41	99.89
4.88	4.84	5.69	33.60	647.41	0.11	754.23	100.00
5.69	5.33	6.63	38.93	754.23	0.00	878.67	100.00



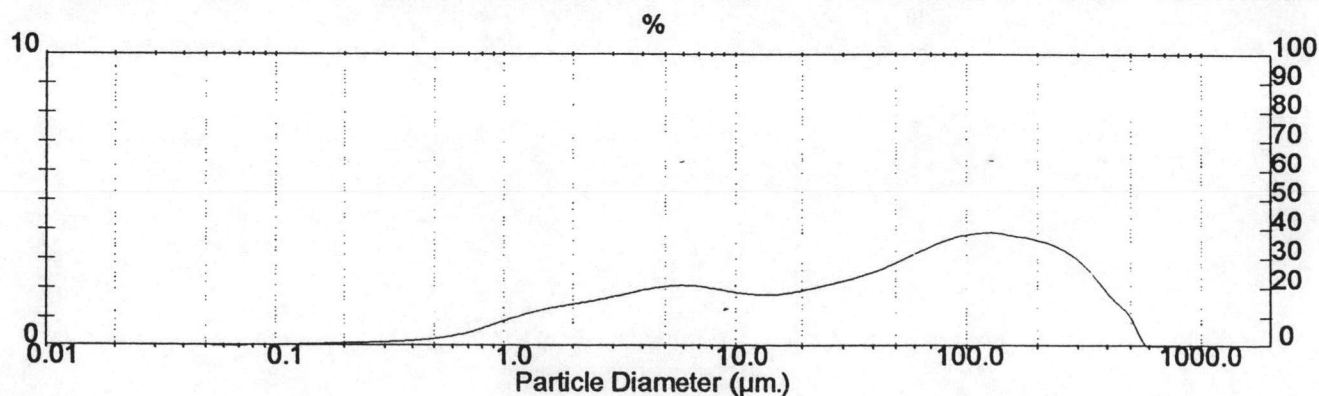
## Result: Analysis Report

Sample Details		
Sample ID: 3 P85 750 / 9	Run Number: 10	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 33	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 11.9 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.819 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0120 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.10 um	D (v, 0.5) = 46.73 um	D (v, 0.9) = 261.32 um
D [4, 3] = 92.64 um	D [3, 2] = 4.59 um	Span = 5.547E+00	Uniformity = 1.710E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	2.05	7.72	25.88
0.06	0.03	0.07	0.04	7.72	1.97	9.00	27.85
0.07	0.04	0.08	0.08	9.00	1.88	10.48	29.72
0.08	0.05	0.09	0.13	10.48	1.80	12.21	31.52
0.09	0.07	0.11	0.20	12.21	1.76	14.22	33.29
0.11	0.08	0.13	0.28	14.22	1.78	16.57	35.07
0.13	0.09	0.15	0.37	16.57	1.84	19.31	36.91
0.15	0.11	0.17	0.48	19.31	1.94	22.49	38.85
0.17	0.12	0.20	0.60	22.49	2.05	26.20	40.90
0.20	0.13	0.23	0.73	26.20	2.18	30.53	43.09
0.23	0.15	0.27	0.88	30.53	2.32	35.56	45.41
0.27	0.16	0.31	1.04	35.56	2.49	41.43	47.90
0.31	0.18	0.36	1.23	41.43	2.69	48.27	50.59
0.36	0.21	0.42	1.43	48.27	2.92	56.23	53.50
0.42	0.25	0.49	1.68	56.23	3.17	65.51	56.68
0.49	0.31	0.58	1.99	65.51	3.42	76.32	60.10
0.58	0.40	0.67	2.39	76.32	3.64	88.91	63.74
0.67	0.52	0.78	2.91	88.91	3.78	103.58	67.52
0.78	0.69	0.91	3.59	103.58	3.86	120.67	71.38
0.91	0.85	1.06	4.44	120.67	3.89	140.58	75.27
1.06	1.02	1.24	5.46	140.58	3.80	163.77	79.06
1.24	1.16	1.44	6.63	163.77	3.72	190.80	82.78
1.44	1.29	1.68	7.92	190.80	3.60	222.28	86.38
1.68	1.39	1.95	9.31	222.28	3.42	258.95	89.80
1.95	1.48	2.28	10.78	258.95	3.13	301.68	92.94
2.28	1.56	2.65	12.34	301.68	2.69	351.46	95.62
2.65	1.66	3.09	14.01	351.46	2.07	409.45	97.69
3.09	1.78	3.60	15.78	409.45	1.46	477.01	99.15
3.60	1.90	4.19	17.68	477.01	0.85	555.71	100.00
4.19	2.00	4.88	19.68	555.71	0.00	647.41	100.00
4.88	2.07	5.69	21.75	647.41	0.00	754.23	100.00
5.69	2.09	6.63	23.84	754.23	0.00	878.67	100.00



## Result: Analysis Report

### Sample Details

Sample ID: 3 P 85 750 / 12

Run Number: 4

Measured: Tue 29 Aug 2000

Sample File: PARI

Record Number: 39

Analysed: Tue 29 Aug 2000

Sample Path: C:\SIZERS\DATA\DATA\AID\

Result Source: Analysed

Sample Notes: Dispersing medium : DI water

Treatment : stir

### System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS1

Obscuration: 16.5 %

Presentation: 30HD

[Particle R.I. = (1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 0.609 %

Analysis Model: Polydisperse

Modifications: Active -

Killed Data Channels: Low 0; High 2

### Result Statistics

Distribution Type: Volume

Concentration = 0.0165 %Vol

Density = 0.000 g / cub. cm

Specific S.A. = 0.0000 sq. m / g

Mean Diameters:

D (v, 0.1) = 2.15 um

D (v, 0.5) = 25.06 um

D (v, 0.9) = 87.07 um

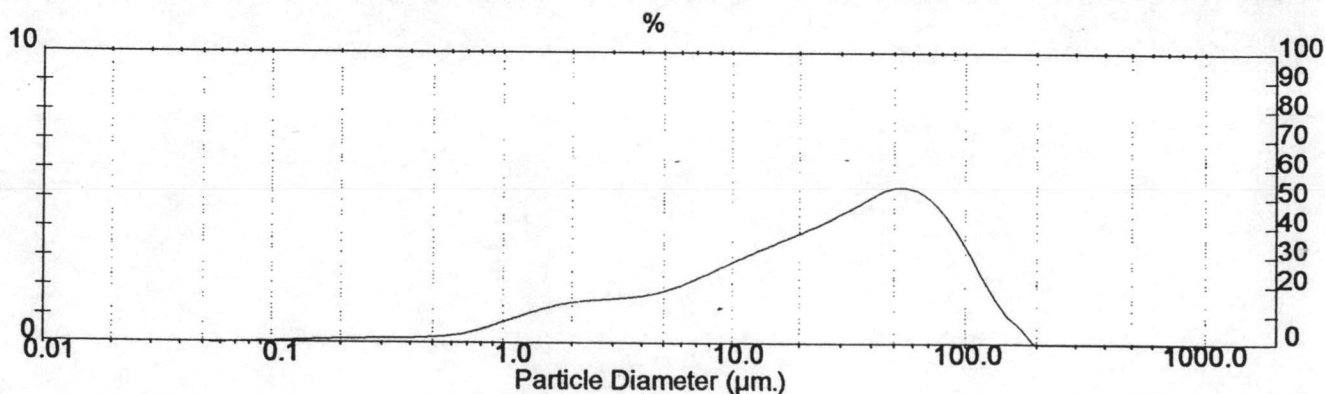
D [4, 3] = 36.23 um

D [3, 2] = 3.96 um

Span = 3.389E+00

Uniformity = 1.071E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.02	0.06	0.02	6.63	2.27	7.72	24.73
0.06	0.04	0.07	0.07	7.72	2.51	9.00	27.24
0.07	0.07	0.08	0.13	9.00	2.75	10.48	29.99
0.08	0.09	0.09	0.22	10.48	2.99	12.21	32.98
0.09	0.11	0.11	0.32	12.21	3.22	14.22	36.19
0.11	0.12	0.13	0.45	14.22	3.43	16.57	39.62
0.13	0.14	0.15	0.59	16.57	3.64	19.31	43.26
0.15	0.16	0.17	0.74	19.31	3.86	22.49	47.13
0.17	0.17	0.20	0.92	22.49	4.10	26.20	51.23
0.20	0.18	0.23	1.10	26.20	4.36	30.53	55.59
0.23	0.19	0.27	1.30	30.53	4.65	35.56	60.24
0.27	0.20	0.31	1.50	35.56	4.94	41.43	65.18
0.31	0.20	0.36	1.70	41.43	5.24	48.27	70.43
0.36	0.21	0.42	1.91	48.27	5.38	56.23	75.81
0.42	0.23	0.49	2.14	56.23	5.32	65.51	81.13
0.49	0.26	0.58	2.41	65.51	5.01	76.32	86.14
0.58	0.32	0.67	2.73	76.32	4.43	88.91	90.56
0.67	0.41	0.78	3.14	88.91	3.61	103.53	94.17
0.78	0.58	0.91	3.72	103.58	2.65	120.67	96.82
0.91	0.75	1.06	4.47	120.67	1.72	140.58	98.55
1.06	0.92	1.24	5.39	140.58	0.98	163.77	99.52
1.24	1.10	1.44	6.49	163.77	0.48	190.80	100.00
1.44	1.25	1.68	7.74	190.80	0.00	222.28	100.00
1.68	1.37	1.95	9.11	222.28	0.00	258.95	100.00
1.95	1.45	2.28	10.56	258.95	0.00	301.68	100.00
2.28	1.50	2.65	12.06	301.68	0.00	351.46	100.00
2.65	1.54	3.09	13.59	351.46	0.00	409.45	100.00
3.09	1.57	3.60	15.17	409.45	0.00	477.01	100.00
3.60	1.64	4.19	16.80	477.01	0.00	555.71	100.00
4.19	1.73	4.88	18.53	555.71	0.00	647.41	100.00
4.88	1.87	5.69	20.41	647.41	0.00	754.23	100.00
5.69	2.05	6.63	22.46	754.23	0.00	878.67	100.00





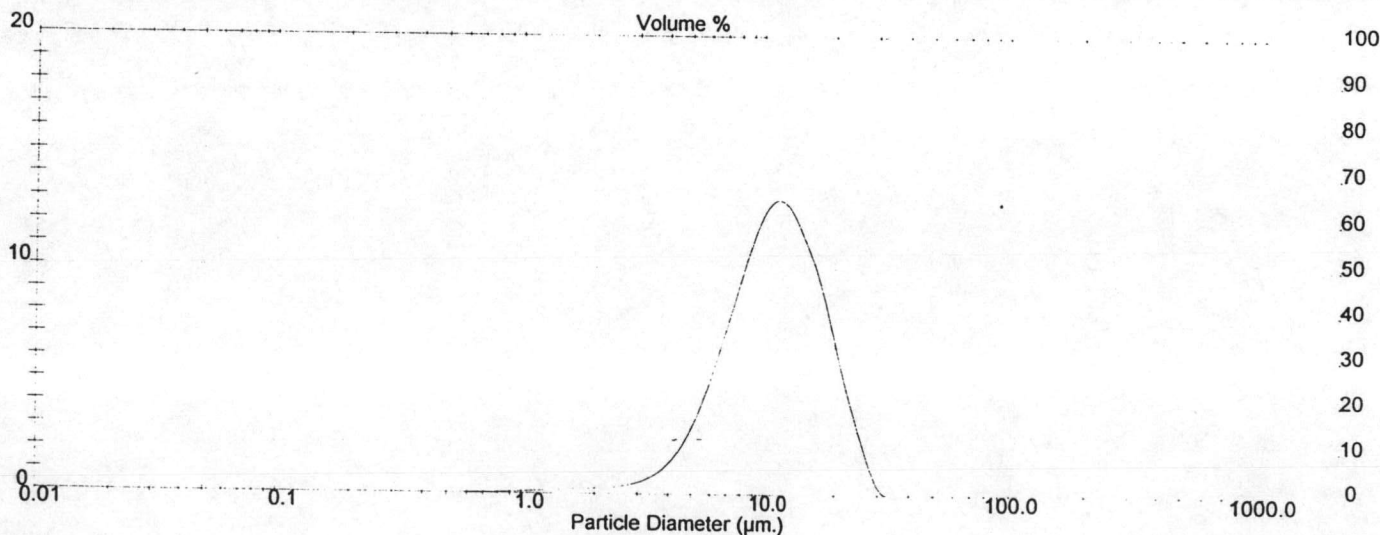
**Result: Analysis Report**

Sample Details		
Sample ID: 3:P 45 750 / 15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 41	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 21.0 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 4.360 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0280 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.6785 sq. m / g
Mean Diameters:	D (v, 0.1) = 5.78 um	D (v, 0.5) = 11.19 um	D (v, 0.9) = 19.33 um
D [4, 3] = 11.95 um	D [3, 2] = 8.84 um	Span = 1.211E+00	Uniformity = 3.753E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.53	7.62	7.72	22.48
0.06	0.00	0.07	0.00	7.72	10.02	9.00	32.51
0.07	0.00	0.08	0.00	9.00	11.98	10.48	44.48
0.08	0.00	0.09	0.00	10.48	12.91	12.21	57.39
0.09	0.00	0.11	0.00	12.21	12.53	14.22	69.92
0.11	0.00	0.13	0.00	14.22	11.04	16.57	80.96
0.13	0.00	0.15	0.00	16.57	8.98	19.31	89.94
0.15	0.00	0.17	0.01	19.31	5.91	22.49	95.85
0.17	0.00	0.20	0.01	22.49	3.17	26.20	99.02
0.20	0.01	0.23	0.02	26.20	0.98	30.53	100.00
0.23	0.01	0.27	0.03	30.53	0.00	35.56	100.00
0.27	0.01	0.31	0.04	35.56	0.00	41.43	100.00
0.31	0.01	0.36	0.05	41.43	0.00	48.27	100.00
0.36	0.01	0.42	0.07	48.27	0.00	56.23	100.00
0.42	0.02	0.49	0.08	56.23	0.00	65.51	100.00
0.49	0.02	0.58	0.11	65.51	0.00	76.32	100.00
0.58	0.03	0.67	0.14	76.32	0.00	88.91	100.00
0.67	0.04	0.78	0.18	88.91	0.00	103.58	100.00
0.78	0.07	0.91	0.25	103.58	0.00	120.67	100.00
0.91	0.10	1.06	0.35	120.67	0.00	140.58	100.00
1.06	0.13	1.24	0.48	140.58	0.00	163.77	100.00
1.24	0.17	1.44	0.65	163.77	0.00	190.80	100.00
1.44	0.20	1.68	0.85	190.80	0.00	222.28	100.00
1.68	0.23	1.95	1.08	222.28	0.00	258.95	100.00
1.95	0.26	2.28	1.34	258.95	0.00	301.68	100.00
2.28	0.32	2.65	1.67	301.68	0.00	351.46	100.00
2.65	0.45	3.09	2.12	351.46	0.00	409.45	100.00
3.09	0.72	3.60	2.84	409.45	0.00	477.01	100.00
3.60	1.21	4.19	4.05	477.01	0.00	555.71	100.00
4.19	2.08	4.88	6.13	555.71	0.00	647.41	100.00
4.88	3.43	5.69	9.55	647.41	0.00	754.23	100.00
5.69	5.31	6.63	14.86	754.23	0.00	878.67	100.00



Mastersizer S long bed Ver. 2.  
Serial Number: -



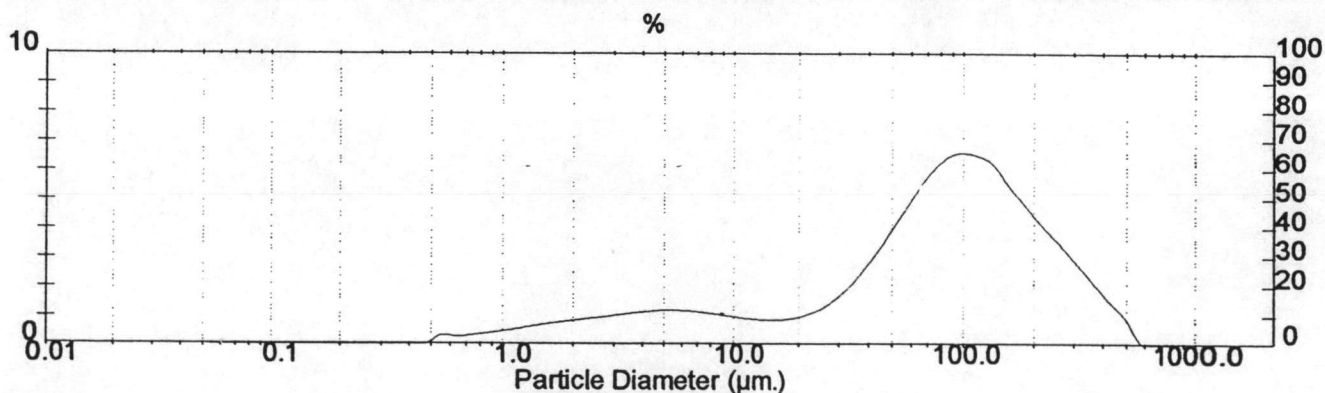
### Result: Analysis Report

Sample Details		
Sample ID: 5 P 85 750/9	Run Number: 4	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 3	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water		
Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 12.5 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	
Analysis Model: Polydisperse			Residual: 0.920 %
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0225 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.52 um	D (v, 0.5) = 83.80 um	D (v, 0.9) = 255.43 um
D [4, 3] = 110.38 um	D [3, 2] = 12.04 um	Span = 2.994E+00	Uniformity = 8.962E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	1.12	7.72	14.07
0.06	0.00	0.07	0.00	7.72	1.06	9.00	15.13
0.07	0.00	0.08	0.00	9.00	0.98	10.48	16.11
0.08	0.00	0.09	0.00	10.48	0.91	12.21	17.02
0.09	0.00	0.11	0.00	12.21	0.86	14.22	17.88
0.11	0.00	0.13	0.00	14.22	0.85	16.57	18.73
0.13	0.00	0.15	0.00	16.57	0.88	19.31	19.62
0.15	0.00	0.17	0.00	19.31	0.99	22.49	20.61
0.17	0.00	0.20	0.00	22.49	1.19	26.20	21.79
0.20	0.00	0.23	0.00	26.20	1.51	30.53	23.30
0.23	0.00	0.27	0.00	30.53	1.97	35.56	25.27
0.27	0.00	0.31	0.00	35.56	2.59	41.43	27.86
0.31	0.00	0.36	0.00	41.43	3.34	48.27	31.19
0.36	0.00	0.42	0.00	48.27	4.17	56.23	35.37
0.42	0.00	0.49	0.00	56.23	5.02	65.51	40.39
0.49	0.29	0.58	0.29	65.51	5.78	76.32	46.17
0.58	0.30	0.67	0.59	76.32	6.33	88.91	52.50
0.67	0.33	0.78	0.92	88.91	6.57	103.58	59.06
0.78	0.40	0.91	1.31	103.58	6.50	120.67	65.56
0.91	0.47	1.06	1.78	120.67	6.25	140.58	71.82
1.06	0.55	1.24	2.32	140.58	5.57	163.77	77.39
1.24	0.64	1.44	2.96	163.77	4.92	190.80	82.31
1.44	0.73	1.68	3.69	190.80	4.29	222.28	86.60
1.68	0.80	1.95	4.49	222.28	3.71	258.95	90.31
1.95	0.86	2.28	5.35	258.95	3.15	301.68	93.47
2.28	0.92	2.65	6.27	301.68	2.55	351.46	96.01
2.65	0.99	3.09	7.26	351.46	1.94	409.45	97.95
3.09	1.05	3.60	8.32	409.45	1.33	477.01	99.28
3.60	1.12	4.19	9.43	477.01	0.72	555.71	100.00
4.19	1.16	4.88	10.60	555.71	0.00	647.41	100.00
4.88	1.18	5.69	11.78	647.41	0.00	754.23	100.00
5.69	1.17	6.63	12.95	754.23	0.00	878.67	100.00



### Result: Analysis Report

#### Sample Details

Sample ID: 5 P 85 750/12      Run Number: 7      Measured: Tue 29 Aug 2000  
 Sample File: PARI      Record Number: 15      Analysed: Tue 29 Aug 2000  
 Sample Path: C:\SIZERS\DATA\DATA\AID\      Result Source: Analysed  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

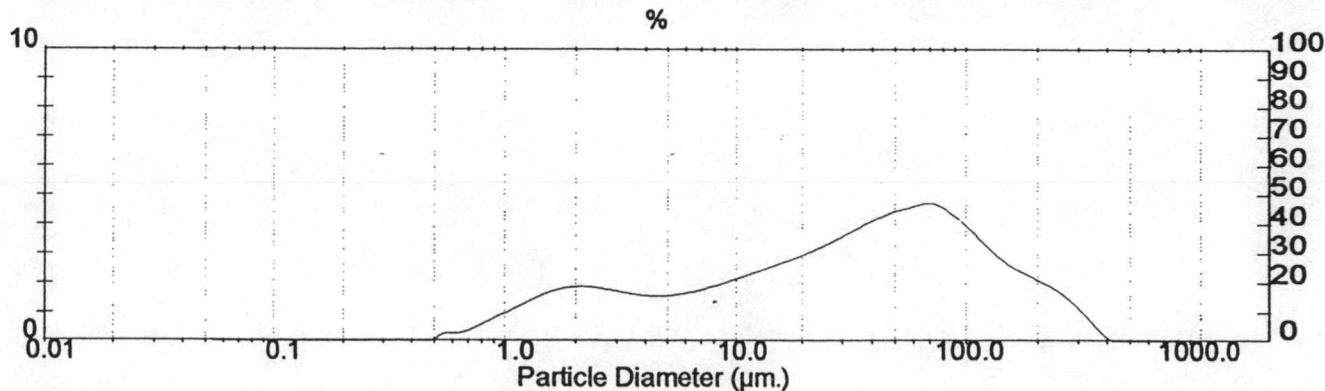
#### System Details

Range Lens: 300RF mm      Beam Length: 2.40 mm      Sampler: MS1      Obscuration: 19.4 %  
 Presentation: 3OHD      [Particle R.I. = ( 1.5295, 0.1000);      Dispersant R.I. = 1.3300]      Residual: 0.903 %  
 Analysis Model: Polydisperse  
 Modifications: Active -      Killed Data Channels: Low 0; High 2

#### Result Statistics

Distribution Type: Volume      Concentration = 0.0205 %Vol      Density = 0.000 g / cub. cm      Specific S.A. = 0.0000 sq. m / g  
 Mean Diameters:      D (v, 0.1) = 2.16 um      D (v, 0.5) = 33.41 um      D (v, 0.9) = 150.76 um  
 D [4, 3] = 57.75 um      D [3, 2] = 7.09 um      Span = 4.448E+00      Uniformity = 1.388E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	1.78	7.72	24.01
0.06	0.00	0.07	0.00	7.72	1.93	9.00	25.94
0.07	0.00	0.08	0.00	9.00	2.10	10.48	28.04
0.08	0.00	0.09	0.00	10.48	2.27	12.21	30.31
0.09	0.00	0.11	0.00	12.21	2.44	14.22	32.75
0.11	0.00	0.13	0.00	14.22	2.61	16.57	35.36
0.13	0.00	0.15	0.00	16.57	2.79	19.31	38.14
0.15	0.00	0.17	0.00	19.31	2.99	22.49	41.13
0.17	0.00	0.20	0.00	22.49	3.21	26.20	44.35
0.20	0.00	0.23	0.00	26.20	3.47	30.53	47.82
0.23	0.00	0.27	0.00	30.53	3.75	35.56	51.56
0.27	0.00	0.31	0.00	35.56	4.02	41.43	55.59
0.31	0.00	0.36	0.00	41.43	4.27	48.27	59.86
0.36	0.00	0.42	0.00	48.27	4.47	56.23	64.33
0.42	0.00	0.49	0.00	56.23	4.61	65.51	68.94
0.49	0.23	0.58	0.23	65.51	4.71	76.32	73.65
0.58	0.29	0.67	0.52	76.32	4.49	88.91	78.14
0.67	0.42	0.78	0.94	88.91	4.08	103.58	82.22
0.78	0.68	0.91	1.62	103.58	3.54	120.67	85.76
0.91	0.93	1.06	2.55	120.67	3.01	140.58	88.77
1.06	1.20	1.24	3.75	140.58	2.60	163.77	91.37
1.24	1.47	1.44	5.23	163.77	2.32	190.80	93.68
1.44	1.69	1.68	6.92	190.80	2.06	222.28	95.75
1.68	1.83	1.95	8.75	222.28	1.77	258.95	97.52
1.95	1.87	2.28	10.62	258.95	1.37	301.68	98.88
2.28	1.83	2.65	12.45	301.68	0.83	351.46	99.71
2.65	1.75	3.09	14.20	351.46	0.29	409.45	100.00
3.09	1.66	3.60	15.86	409.45	0.00	477.01	100.00
3.60	1.58	4.19	17.44	477.01	0.00	555.71	100.00
4.19	1.55	4.88	19.00	555.71	0.00	647.41	100.00
4.88	1.58	5.69	20.57	647.41	0.00	754.23	100.00
5.69	1.66	6.63	22.23	754.23	0.00	878.67	100.00



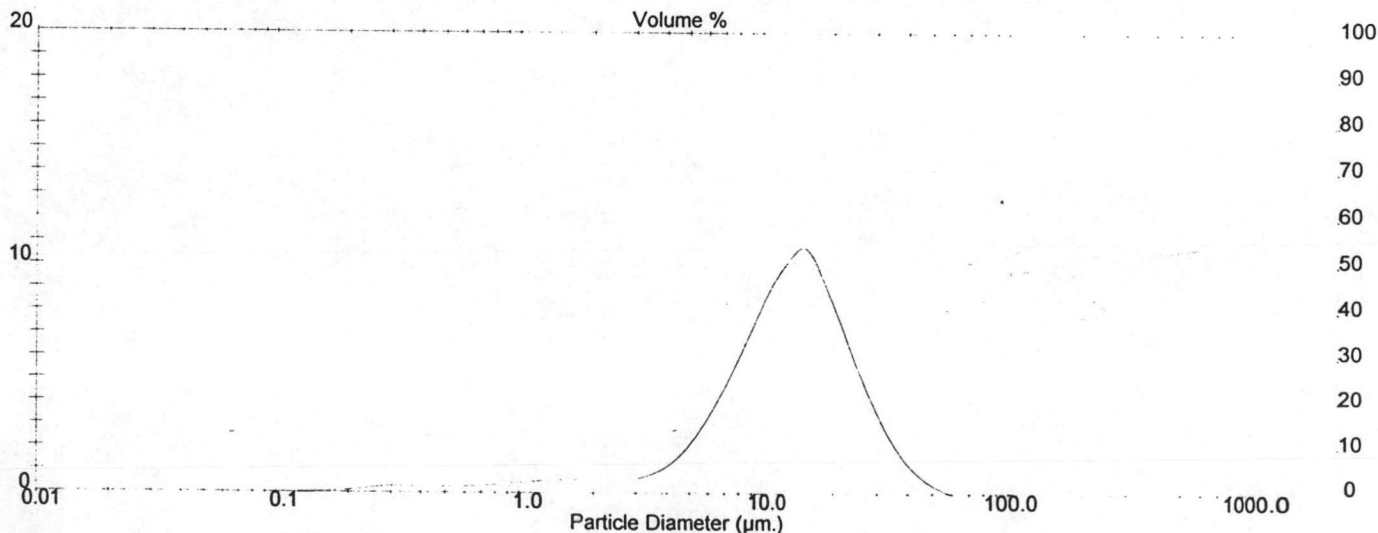
**Result: Analysis Report**

Sample Details		
Sample ID: 5 P 85 750 / 15	Run Number: 5	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 49	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 19.3 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.536 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0211 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1417 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.54 um	D (v, 0.5) = 13.15 um	D (v, 0.9) = 26.73 um
D [4, 3] = 16.28 um	D [3, 2] = 5.26 um	Span = 1.687E+00	Uniformity = 6.434E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.82	7.72	21.59
0.06	0.00	0.07	0.01	7.72	6.35	9.00	27.94
0.07	0.01	0.08	0.01	9.00	7.91	10.48	35.86
0.08	0.01	0.09	0.02	10.48	9.27	12.21	45.13
0.09	0.02	0.11	0.04	12.21	10.22	14.22	55.35
0.11	0.02	0.13	0.06	14.22	10.74	16.57	66.09
0.13	0.03	0.15	0.10	16.57	9.57	19.31	75.66
0.15	0.06	0.17	0.15	19.31	7.82	22.49	83.48
0.17	0.09	0.20	0.24	22.49	5.90	26.20	89.38
0.20	0.15	0.23	0.39	26.20	4.12	30.53	93.49
0.23	0.23	0.27	0.62	30.53	2.63	35.56	96.12
0.27	0.28	0.31	0.91	35.56	1.51	41.43	97.63
0.31	0.29	0.36	1.20	41.43	0.75	48.27	98.39
0.36	0.27	0.42	1.47	48.27	0.28	56.23	98.66
0.42	0.27	0.49	1.74	56.23	0.01	65.51	98.68
0.49	0.29	0.58	2.03	65.51	0.00	76.32	98.68
0.58	0.29	0.67	2.32	76.32	0.00	88.91	98.68
0.67	0.33	0.78	2.65	88.91	0.00	103.58	98.68
0.78	0.38	0.91	3.03	103.58	0.14	120.67	98.82
0.91	0.45	1.06	3.48	120.67	0.27	140.58	99.09
1.06	0.51	1.24	3.98	140.58	0.33	163.77	99.42
1.24	0.55	1.44	4.54	163.77	0.30	190.80	99.73
1.44	0.58	1.68	5.11	190.80	0.19	222.28	99.92
1.68	0.57	1.95	5.69	222.28	0.08	258.95	100.00
1.95	0.56	2.28	6.25	258.95	0.00	301.68	100.00
2.28	0.55	2.65	6.80	301.68	0.00	351.46	100.00
2.65	0.60	3.09	7.40	351.46	0.00	409.45	100.00
3.09	0.76	3.60	8.16	409.45	0.00	477.01	100.00
3.60	1.08	4.19	9.23	477.01	0.00	555.71	100.00
4.19	1.62	4.88	10.85	555.71	0.00	647.41	100.00
4.88	2.42	5.69	13.28	647.41	0.00	754.23	100.00
5.69	3.49	6.63	16.77	754.23	0.00	878.67	100.00





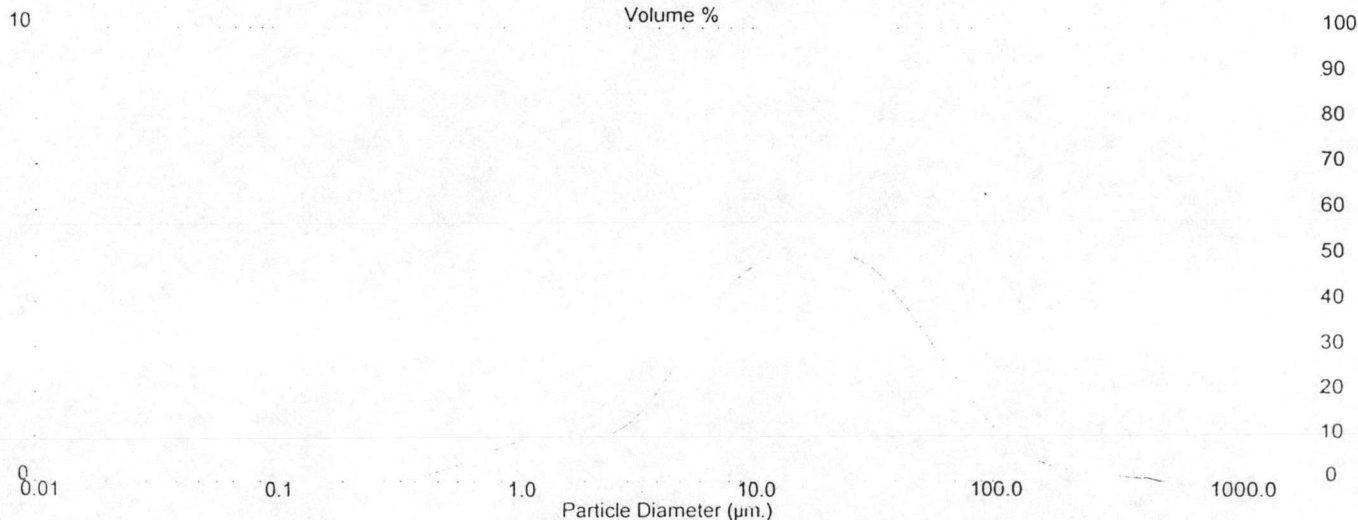
Result: Analysis Report

Sample Details		
Sample ID: I.5 P75 250/g	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 6	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 13.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.283 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0136 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9103 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.01 um	D (v, 0.5) = 16.11 um	D (v, 0.9) = 64.49 um
D [4, 3] = 29.63 um	D [3, 2] = 6.59 um	Span = 3.817E+00	Uniformity = 1.374E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.05	7.72	26.67
0.06	0.00	0.07	0.00	7.72	4.44	9.00	31.10
0.07	0.00	0.08	0.00	9.00	4.71	10.48	35.82
0.08	0.00	0.09	0.00	10.48	4.92	12.21	40.73
0.09	0.00	0.11	0.00	12.21	5.06	14.22	45.80
0.11	0.00	0.13	0.00	14.22	5.17	16.57	50.96
0.13	0.00	0.15	0.00	16.57	5.22	19.31	56.18
0.15	0.00	0.17	0.00	19.31	5.19	22.49	61.37
0.17	0.00	0.20	0.00	22.49	5.08	26.20	66.45
0.20	0.00	0.23	0.00	26.20	4.90	30.53	71.34
0.23	0.00	0.27	0.00	30.53	4.67	35.56	76.01
0.27	0.00	0.31	0.00	35.56	4.27	41.43	80.28
0.31	0.01	0.36	0.01	41.43	3.82	48.27	84.10
0.36	0.08	0.42	0.09	48.27	3.34	56.23	87.44
0.42	0.16	0.49	0.25	56.23	2.83	65.51	90.27
0.49	0.28	0.58	0.53	65.51	2.31	76.32	92.58
0.58	0.41	0.67	0.94	76.32	1.81	88.91	94.39
0.67	0.57	0.78	1.51	88.91	1.35	103.58	95.74
0.78	0.71	0.91	2.22	103.58	0.96	120.67	96.70
0.91	0.85	1.06	3.06	120.67	0.67	140.58	97.37
1.06	0.96	1.24	4.02	140.58	0.48	163.77	97.85
1.24	1.01	1.44	5.03	163.77	0.39	190.80	98.24
1.44	1.01	1.68	6.04	190.80	0.38	222.28	98.62
1.68	0.98	1.95	7.02	222.28	0.39	258.95	99.01
1.95	0.98	2.28	7.99	258.95	0.38	301.68	99.39
2.28	1.04	2.65	9.03	301.68	0.32	351.46	99.71
2.65	1.20	3.09	10.23	351.46	0.20	409.45	99.92
3.09	1.49	3.60	11.72	409.45	0.08	477.01	100.00
3.60	1.91	4.19	13.63	477.01	0.00	555.71	100.00
4.19	2.42	4.88	16.05	555.71	0.00	647.41	100.00
4.88	3.00	5.69	19.05	647.41	0.00	754.23	100.00
5.69	3.56	6.63	22.62	754.23	0.00	878.67	100.00





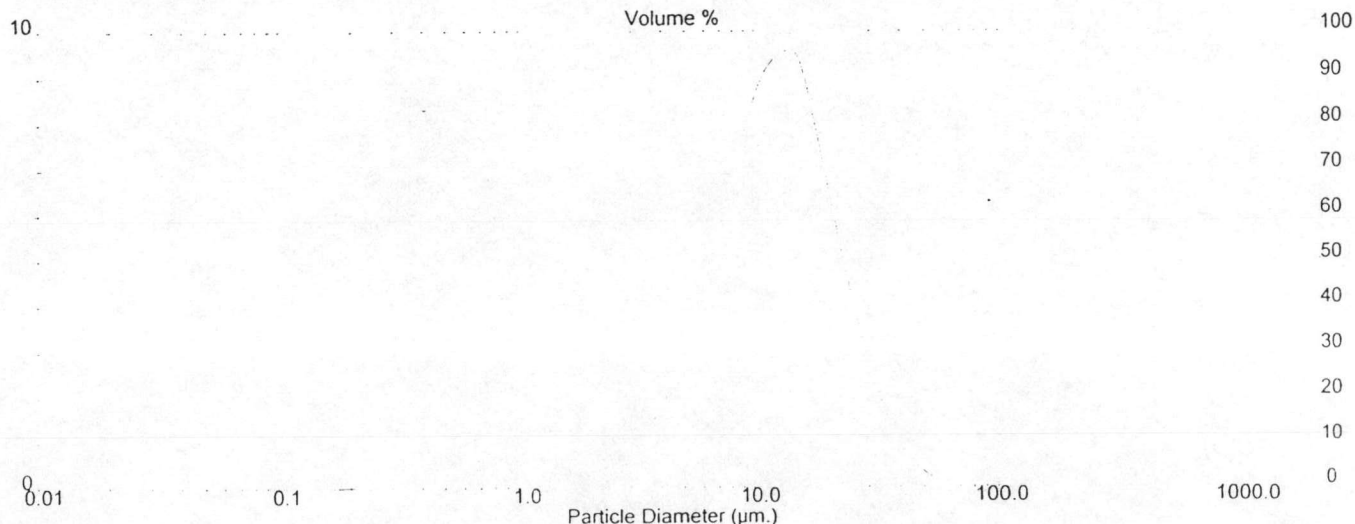
Result: Analysis Report

Sample Details		
Sample ID: 1.5 P75 250112	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 27	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 27.1 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.228 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0275 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0961 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.49 um	D (v, 0.5) = 11.71 um	D (v, 0.9) = 25.66 um
D [4, 3] = 16.58 um	D [3, 2] = 5.47 um	Span = 1.893E+00	Uniformity = 8.435E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.78	7.72	27.89
0.06	0.00	0.07	0.00	7.72	7.14	9.00	35.03
0.07	0.00	0.08	0.00	9.00	8.35	10.48	43.37
0.08	0.00	0.09	0.00	10.48	9.20	12.21	52.57
0.09	0.00	0.11	0.00	12.21	9.52	14.22	62.09
0.11	0.00	0.13	0.00	14.22	9.41	16.57	71.51
0.13	0.00	0.15	0.01	16.57	8.03	19.31	79.53
0.15	0.01	0.17	0.01	19.31	6.34	22.49	85.87
0.17	0.02	0.20	0.03	22.49	4.68	26.20	90.55
0.20	0.05	0.23	0.08	26.20	3.22	30.53	93.77
0.23	0.12	0.27	0.20	30.53	2.04	35.56	95.81
0.27	0.20	0.31	0.39	35.56	1.17	41.43	96.97
0.31	0.23	0.36	0.63	41.43	0.60	48.27	97.57
0.36	0.23	0.42	0.86	48.27	0.27	56.23	97.85
0.42	0.26	0.49	1.12	56.23	0.13	65.51	97.98
0.49	0.33	0.58	1.45	65.51	0.10	76.32	98.08
0.58	0.37	0.67	1.81	76.32	0.12	88.91	98.20
0.67	0.46	0.78	2.27	88.91	0.16	103.58	98.36
0.78	0.53	0.91	2.80	103.58	0.19	120.67	98.55
0.91	0.63	1.06	3.43	120.67	0.20	140.58	98.75
1.06	0.72	1.24	4.15	140.58	0.20	163.77	98.95
1.24	0.79	1.44	4.94	163.77	0.20	190.80	99.15
1.44	0.81	1.68	5.75	190.80	0.20	222.28	99.35
1.68	0.80	1.95	6.55	222.28	0.20	258.95	99.55
1.95	0.79	2.28	7.34	258.95	0.19	301.68	99.73
2.28	0.81	2.65	8.15	301.68	0.15	351.46	99.88
2.65	0.93	3.09	9.08	351.46	0.09	409.45	99.97
3.09	1.20	3.60	10.27	409.45	0.03	477.01	100.00
3.60	1.67	4.19	11.94	477.01	0.00	555.71	100.00
4.19	2.37	4.88	14.31	555.71	0.00	647.41	100.00
4.88	3.32	5.69	17.63	647.41	0.00	754.23	100.00
5.69	4.48	6.63	22.11	754.23	0.00	878.67	100.00



**Result: Analysis Report**

**Sample Details**

Sample ID: 1.5 P75 250/15  
 Sample File: PARI  
 Sample Path: A:\  
 Sample Notes: Test by Pranee : Scientific and Tecnological Research  
 Equipment Center Chulalongkom University  
 Liquid medium : water

Run Number: 5  
 Record Number: 7

Measurement Date: Wed, Aug 01, 2000  
 Analysis Date: Wed, Aug 01, 2000  
 Result Source: Analysed

**System Details**

Range Lens: 300RF mm  
 Presentation: 30HD  
 Analysis Model: Polydisperse  
 Modifications: Active -

Beam Length: 2.40 mm  
 [Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2  
 Killed Result Channels: < 0.05 um; > 222.28 um.

Sampler: MS17

Obscuration: 23.1 %  
 Residual: 0.493 %

**Result Statistics**

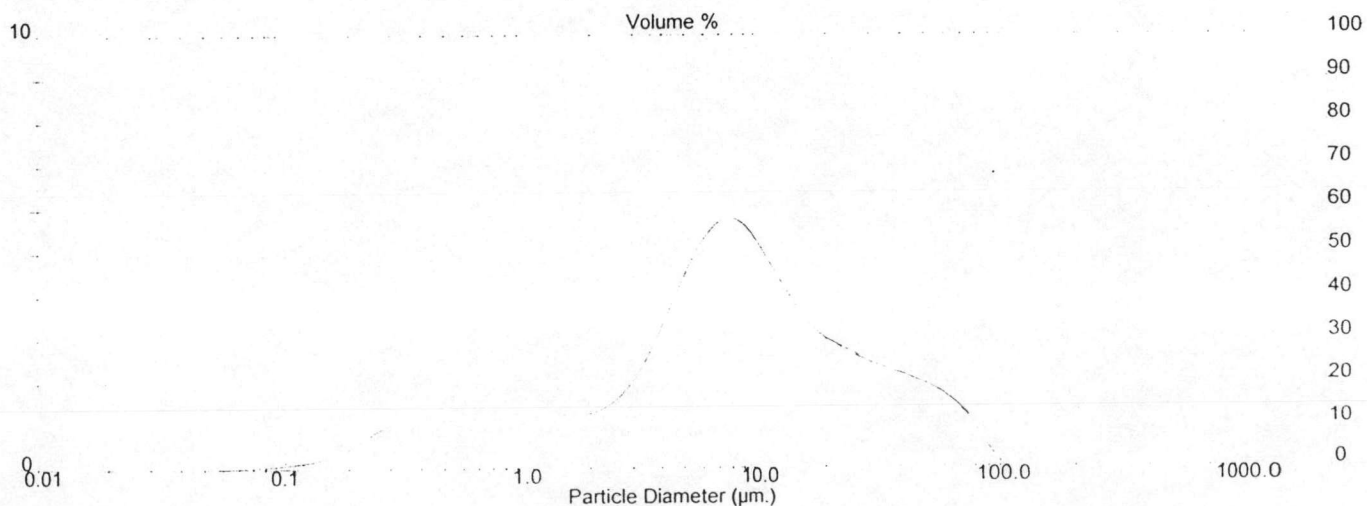
Distribution Type: Volume  
 Mean Diameters:  
 D [4, 3] = 15.13 um

Concentration = 0.0147 %Vol  
 D (v, 0.1) = 0.77 um  
 D [3, 2] = 2.10 um

Density = 1.000 g / cub. cm  
 D (v, 0.5) = 8.18 um  
 Span = 5.077E+00

Specific S.A. = 2.8524 sq. m / g  
 D (v, 0.9) = 42.29 um  
 Uniformity = 1.408E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.01	0.06	0.01	6.53	5.72	7.72	47.83
0.06	0.02	0.07	0.03	7.72	5.73	9.00	53.56
0.07	0.04	0.08	0.07	9.00	5.42	10.48	58.98
0.08	0.05	0.09	0.12	10.48	4.90	12.21	63.88
0.09	0.08	0.11	0.20	12.21	4.29	14.22	68.17
0.11	0.11	0.13	0.31	14.22	3.71	16.57	71.89
0.13	0.16	0.15	0.47	16.57	3.25	19.31	75.14
0.15	0.24	0.17	0.71	19.31	2.95	22.49	78.09
0.17	0.37	0.20	1.07	22.49	2.79	26.20	80.89
0.20	0.56	0.23	1.63	26.20	2.72	30.53	83.61
0.23	0.79	0.27	2.42	30.53	2.92	35.56	86.53
0.27	0.99	0.31	3.41	35.56	3.05	41.43	89.59
0.31	1.05	0.36	4.46	41.43	3.00	48.27	92.58
0.36	1.04	0.42	5.50	48.27	2.69	56.23	95.28
0.42	1.08	0.49	6.58	56.23	2.16	65.51	97.44
0.49	1.15	0.58	7.73	65.51	1.49	76.32	98.93
0.58	1.16	0.67	8.90	76.32	0.82	88.91	99.75
0.67	1.23	0.78	10.13	88.91	0.25	103.58	100.00
0.78	1.25	0.91	11.37	103.58	0.00	120.67	100.00
0.91	1.28	1.06	12.65	120.67	0.00	140.58	100.00
1.06	1.29	1.24	13.95	140.58	0.00	163.77	100.00
1.24	1.28	1.44	15.23	163.77	0.00	190.80	100.00
1.44	1.25	1.68	16.48	190.80	0.00	222.28	100.00
1.68	1.24	1.95	17.73	222.28	0.00	258.95	100.00
1.95	1.32	2.28	19.05	258.95	0.00	301.68	100.00
2.28	1.52	2.65	20.57	301.68	0.00	351.46	100.00
2.65	1.89	3.09	22.46	351.46	0.00	409.45	100.00
3.09	2.44	3.60	24.90	409.45	0.00	477.01	100.00
3.60	3.14	4.19	28.04	477.01	0.00	555.71	100.00
4.19	3.95	4.88	31.99	555.71	0.00	647.41	100.00
4.88	4.74	5.69	36.73	647.41	0.00	754.23	100.00
5.69	5.38	6.63	42.10	754.23	0.00	878.67	100.00



## Result: Analysis Report

### Sample Details

Sample ID: 1.5 P 75 500/g

Run Number: 3

Measured: Wed 25 Oct 2000

Sample File: PARI

Record Number: 4

Analysed: Wed 25 Oct 2000

Sample Path: C:\SIZERS\DATA\DATA\AID\

Result Source: Analysed

Sample Notes: Dispersing medium : Water

Additive : None

Treatment : Stir

### System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS1

Obscuration: 13.4 %

Presentation: 30HD

[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 2.426 %

Analysis Model: Polydisperse

Modifications: Active -

Killed Data Channels: Low 0; High 2

### Result Statistics

Distribution Type: Volume

Concentration = 0.0144 %Vol

Density = 0.000 g / cub. cm

Specific S.A. = 0.0000 sq. m / g

Mean Diameters:

D (v, 0.1) = 3.31 um

D (v, 0.5) = 16.29 um

D (v, 0.9) = 57.98 um

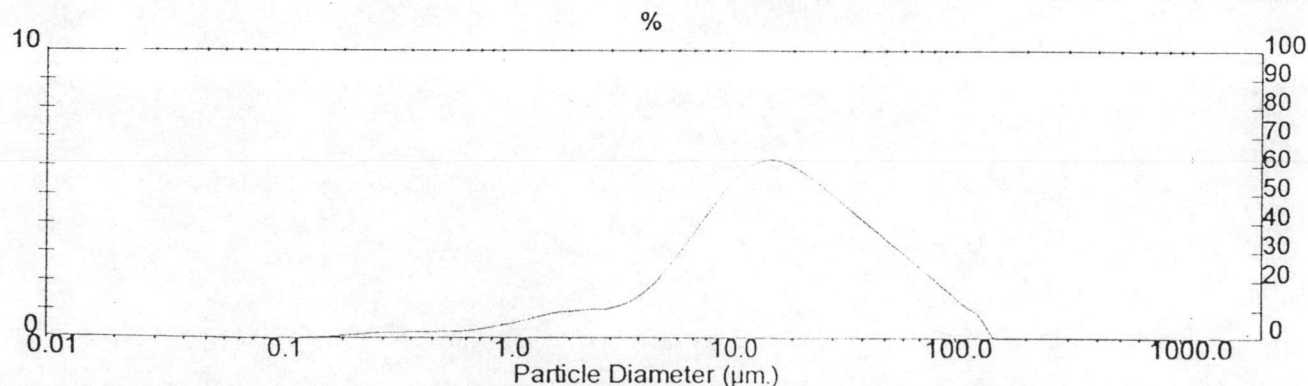
D [4, 3] = 24.55 um

D [3, 2] = 5.04 um

Span = 3.355E+00

Uniformity = 1.009E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	3.77	7.72	23.07
0.06	0.01	0.07	0.02	7.72	4.50	9.00	27.57
0.07	0.02	0.08	0.04	9.00	5.17	10.48	32.73
0.08	0.03	0.09	0.07	10.48	5.70	12.21	38.43
0.09	0.04	0.11	0.11	12.21	6.05	14.22	44.49
0.11	0.05	0.13	0.16	14.22	6.20	16.57	50.69
0.13	0.07	0.15	0.23	16.57	6.13	19.31	56.82
0.15	0.09	0.17	0.32	19.31	5.89	22.49	62.71
0.17	0.12	0.20	0.44	22.49	5.54	26.20	68.25
0.20	0.15	0.23	0.59	26.20	5.12	30.53	73.37
0.23	0.19	0.27	0.78	30.53	4.67	35.56	78.05
0.27	0.22	0.31	1.00	35.56	4.23	41.43	82.27
0.31	0.24	0.36	1.24	41.43	3.78	48.27	86.05
0.36	0.24	0.42	1.48	48.27	3.33	56.23	89.39
0.42	0.25	0.49	1.73	56.23	2.89	65.51	92.27
0.49	0.26	0.58	1.99	65.51	2.44	76.32	94.71
0.58	0.27	0.67	2.26	76.32	1.99	88.91	96.70
0.67	0.30	0.78	2.56	88.91	1.55	103.58	98.25
0.78	0.38	0.91	2.94	103.58	1.10	120.67	99.35
0.91	0.47	1.06	3.41	120.67	0.65	140.58	100.00
1.06	0.57	1.24	3.98	140.58	0.00	163.77	100.00
1.24	0.70	1.44	4.68	163.77	0.00	190.80	100.00
1.44	0.83	1.68	5.51	190.80	0.00	222.28	100.00
1.68	0.94	1.95	6.45	222.28	0.00	258.95	100.00
1.95	0.98	2.28	7.43	258.95	0.00	301.68	100.00
2.28	1.02	2.65	8.45	301.68	0.00	351.46	100.00
2.65	1.04	3.09	9.49	351.46	0.00	409.45	100.00
3.09	1.17	3.60	10.66	409.45	0.00	477.01	100.00
3.60	1.41	4.19	12.07	477.01	0.00	555.71	100.00
4.19	1.82	4.88	13.88	555.71	0.00	647.41	100.00
4.88	2.38	5.69	16.25	647.41	0.00	754.23	100.00
5.69	3.04	6.63	19.30	754.23	0.00	878.67	100.00





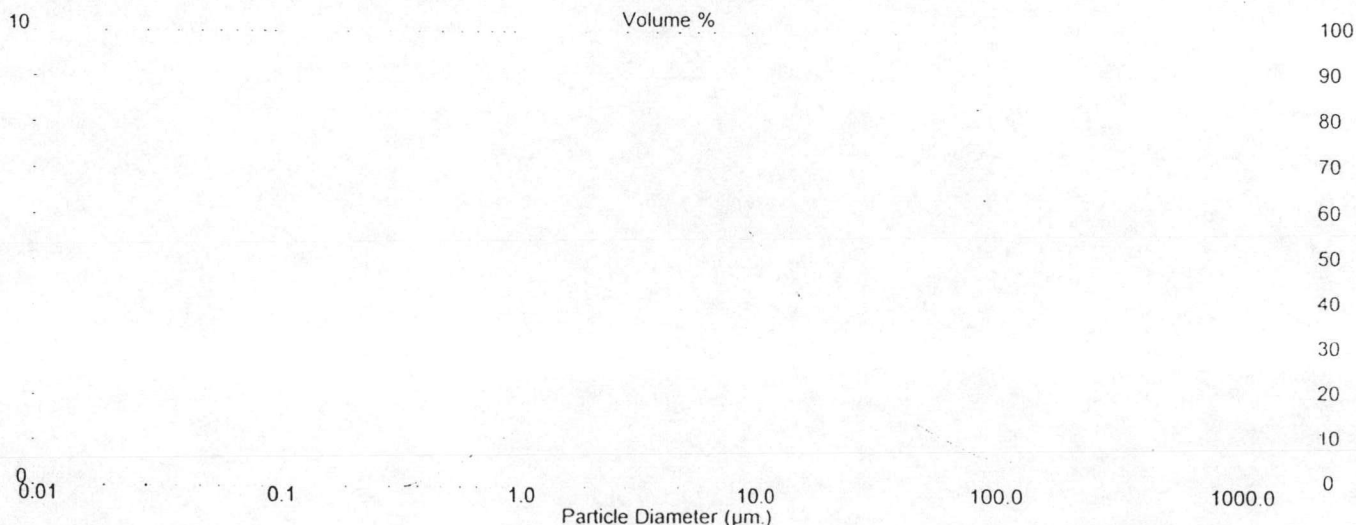
Result: Analysis Report

Sample Details		
Sample ID: 1.5 P75 500/12	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 59	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.337 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0148 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1072 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.23 um	D (v, 0.5) = 11.80 um	D (v, 0.9) = 56.19 um
D [4, 3] = 25.53 um	D [3, 2] = 5.42 um	Span = 4.574E+00	Uniformity = 1.670E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.71	7.72	34.27
0.06	0.00	0.07	0.00	7.72	5.90	9.00	40.17
0.07	0.00	0.08	0.00	9.00	5.69	10.48	45.86
0.08	0.00	0.09	0.00	10.48	5.29	12.21	51.15
0.09	0.00	0.11	0.00	12.21	4.84	14.22	55.99
0.11	0.00	0.13	0.00	14.22	4.46	16.57	60.44
0.13	0.00	0.15	0.00	16.57	4.18	19.31	64.62
0.15	0.00	0.17	0.00	19.31	4.01	22.49	68.63
0.17	0.00	0.20	0.00	22.49	3.92	26.20	72.56
0.20	0.00	0.23	0.00	26.20	3.88	30.53	76.44
0.23	0.00	0.27	0.00	30.53	3.83	35.56	80.27
0.27	0.00	0.31	0.00	35.56	3.64	41.43	83.91
0.31	0.00	0.36	0.00	41.43	3.29	48.27	87.20
0.36	0.10	0.42	0.10	48.27	2.81	56.23	90.01
0.42	0.22	0.49	0.32	56.23	2.25	65.51	92.26
0.49	0.41	0.58	0.73	65.51	1.70	76.32	93.96
0.58	0.58	0.67	1.31	76.32	1.23	88.91	95.19
0.67	0.82	0.78	2.13	88.91	0.87	103.58	96.07
0.78	0.98	0.91	3.11	103.58	0.64	120.67	96.71
0.91	1.18	1.06	4.29	120.67	0.53	140.58	97.24
1.06	1.31	1.24	5.61	140.58	0.50	163.77	97.74
1.24	1.32	1.44	6.93	163.77	0.52	190.80	98.27
1.44	1.20	1.68	8.13	190.80	0.54	222.28	98.80
1.68	1.04	1.95	9.18	222.28	0.51	258.95	99.31
1.95	0.94	2.28	10.12	258.95	0.40	301.68	99.71
2.28	0.97	2.65	11.10	301.68	0.23	351.46	99.94
2.65	1.19	3.09	12.28	351.46	0.06	409.45	100.00
3.09	1.61	3.60	13.89	409.45	0.00	477.01	100.00
3.60	2.26	4.19	16.15	477.01	0.00	555.71	100.00
4.19	3.15	4.88	19.30	555.71	0.00	647.41	100.00
4.88	4.17	5.69	23.47	647.41	0.00	754.23	100.00
5.69	5.10	6.63	28.57	754.23	0.00	878.67	100.00





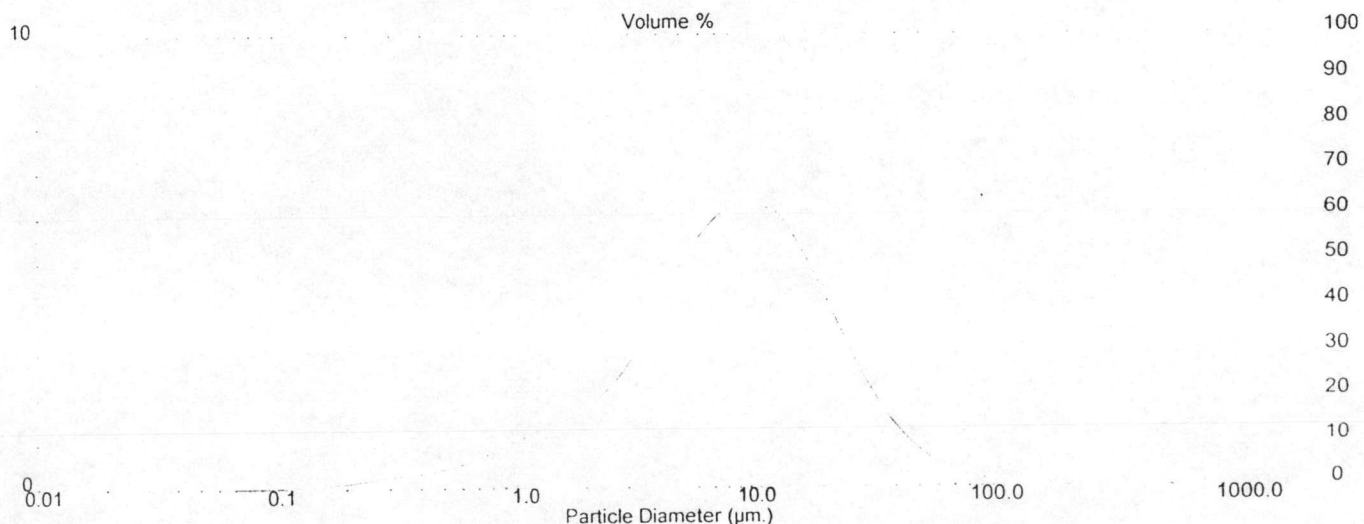
Result: Analysis Report

Sample Details		
Sample ID: 1.5 P75 500/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 11	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.316 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0136 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.7126 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.72 um	D (v, 0.5) = 8.47 um	D (v, 0.9) = 27.83 um
D [4, 3] = 16.13 um	D [3, 2] = 3.50 um	Span = 3.082E+00	Uniformity = 1.409E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.00	7.72	46.25
0.06	0.01	0.07	0.01	7.72	6.22	9.00	52.47
0.07	0.02	0.08	0.03	9.00	6.27	10.48	58.73
0.08	0.02	0.09	0.05	10.48	6.20	12.21	64.93
0.09	0.03	0.11	0.08	12.21	6.04	14.22	70.98
0.11	0.04	0.13	0.12	14.22	5.53	16.57	76.50
0.13	0.05	0.15	0.18	16.57	4.87	19.31	81.37
0.15	0.08	0.17	0.25	19.31	4.13	22.49	85.50
0.17	0.10	0.20	0.36	22.49	3.37	26.20	88.87
0.20	0.15	0.23	0.50	26.20	2.66	30.53	91.53
0.23	0.20	0.27	0.70	30.53	2.03	35.56	93.56
0.27	0.25	0.31	0.95	35.56	1.50	41.43	95.06
0.31	0.29	0.36	1.24	41.43	1.09	48.27	96.14
0.36	0.33	0.42	1.57	48.27	0.76	56.23	96.91
0.42	0.39	0.49	1.96	56.23	0.53	65.51	97.43
0.49	0.48	0.58	2.44	65.51	0.35	76.32	97.79
0.58	0.58	0.67	3.02	76.32	0.24	88.91	98.03
0.67	0.72	0.78	3.73	88.91	0.17	103.58	98.20
0.78	0.87	0.91	4.60	103.58	0.14	120.67	98.34
0.91	1.04	1.06	5.64	120.67	0.12	140.58	98.46
1.06	1.20	1.24	6.84	140.58	0.13	163.77	98.59
1.24	1.36	1.44	8.20	163.77	0.16	190.80	98.75
1.44	1.52	1.68	9.72	190.80	0.20	222.28	98.96
1.68	1.68	1.95	11.40	222.28	0.24	258.95	99.20
1.95	1.91	2.28	13.31	258.95	0.26	301.68	99.46
2.28	2.21	2.65	15.52	301.68	0.25	351.46	99.71
2.65	2.63	3.09	18.15	351.46	0.18	409.45	99.89
3.09	3.16	3.60	21.31	409.45	0.11	477.01	100.00
3.60	3.79	4.19	25.10	477.01	0.00	555.71	100.00
4.19	4.45	4.88	29.55	555.71	0.00	647.41	100.00
4.88	5.09	5.69	34.63	647.41	0.00	754.23	100.00
5.69	5.62	6.63	40.25	754.23	0.00	878.67	100.00



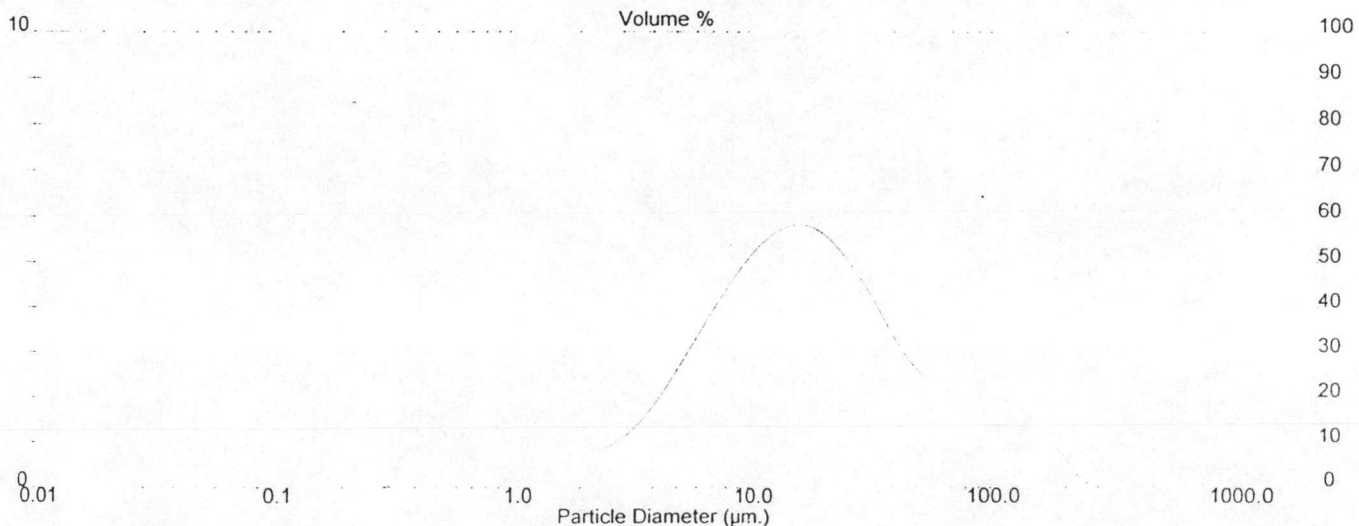
### Result: Analysis Report

Sample Details		
Sample ID: I.5 P 75 750/9	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 56	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 18.5 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.428 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0210 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8475 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.67 um	D (v, 0.5) = 16.46 um	D (v, 0.9) = 81.52 um
D [4, 3] = 30.54 um	D [3, 2] = 7.08 um	Span = 4.729E+00	Uniformity = 1.363E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	3.99	7.72	23.91
0.06	0.00	0.07	0.00	7.72	4.52	9.00	28.43
0.07	0.00	0.08	0.00	9.00	4.99	10.48	33.42
0.08	0.00	0.09	0.00	10.48	5.38	12.21	38.79
0.09	0.00	0.11	0.00	12.21	5.66	14.22	44.45
0.11	0.00	0.13	0.00	14.22	5.80	16.57	50.25
0.13	0.00	0.15	0.00	16.57	5.78	19.31	56.03
0.15	0.00	0.17	0.00	19.31	5.58	22.49	61.61
0.17	0.00	0.20	0.00	22.49	5.21	26.20	66.82
0.20	0.00	0.23	0.00	26.20	4.73	30.53	71.55
0.23	0.00	0.27	0.00	30.53	4.19	35.56	75.74
0.27	0.01	0.31	0.01	35.56	3.53	41.43	79.27
0.31	0.06	0.36	0.07	41.43	2.96	48.27	82.23
0.36	0.12	0.42	0.19	48.27	2.52	56.23	84.75
0.42	0.19	0.49	0.38	56.23	2.24	65.51	86.99
0.49	0.28	0.58	0.66	65.51	2.11	76.32	89.10
0.58	0.38	0.67	1.04	76.32	2.07	88.91	91.17
0.67	0.50	0.78	1.54	88.91	2.05	103.58	93.23
0.78	0.59	0.91	2.13	103.58	1.97	120.67	95.19
0.91	0.68	1.06	2.80	120.67	1.76	140.58	96.96
1.06	0.74	1.24	3.54	140.58	1.42	163.77	98.37
1.24	0.77	1.44	4.31	163.77	0.98	190.80	99.35
1.44	0.76	1.68	5.08	190.80	0.54	222.28	99.89
1.68	0.75	1.95	5.83	222.28	0.11	258.95	100.00
1.95	0.77	2.28	6.60	258.95	0.00	301.68	100.00
2.28	0.85	2.65	7.46	301.68	0.00	351.46	100.00
2.65	1.03	3.09	8.49	351.46	0.00	409.45	100.00
3.09	1.31	3.60	9.80	409.45	0.00	477.01	100.00
3.60	1.71	4.19	11.51	477.01	0.00	555.71	100.00
4.19	2.22	4.88	13.73	555.71	0.00	647.41	100.00
4.88	2.79	5.69	16.52	647.41	0.00	754.23	100.00
5.69	3.40	6.63	19.92	754.23	0.00	878.67	100.00



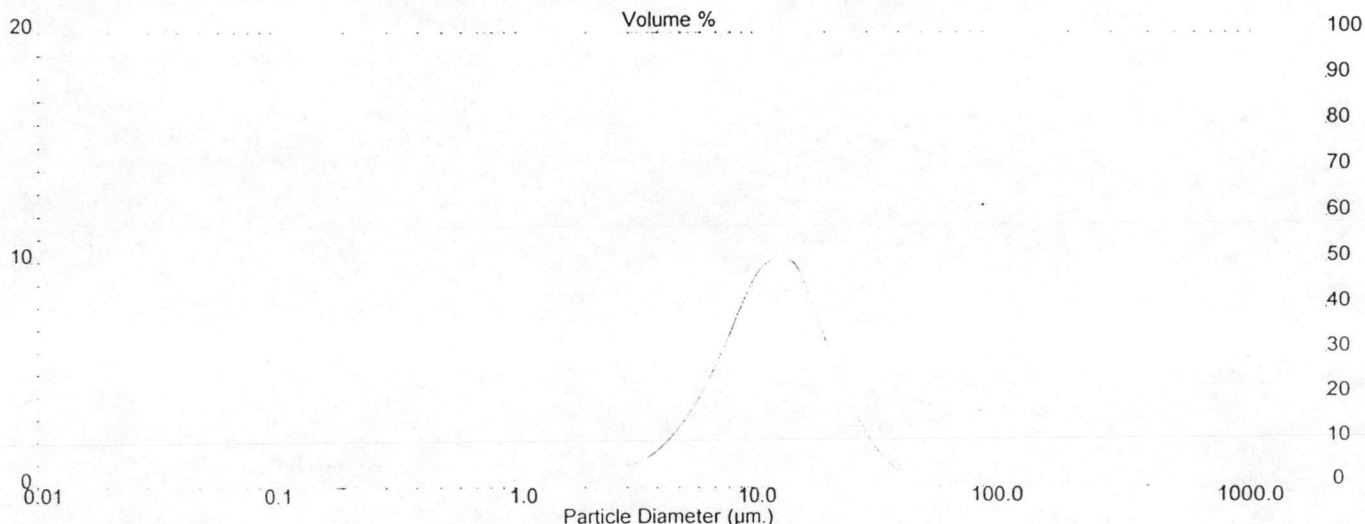
Result: Analysis Report

Sample Details		
Sample ID: 1.5 P75 750/12	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 20	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.5 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.259 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0222 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0531 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.16 um	D (v, 0.5) = 12.02 um	D (v, 0.9) = 26.63 um
D [4, 3] = 19.07 um	D [3, 2] = 5.70 um	Span = 1.868E+00	Uniformity = 9.907E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.63	7.72	25.07
0.06	0.00	0.07	0.00	7.72	7.27	9.00	32.34
0.07	0.00	0.08	0.00	9.00	8.82	10.48	41.16
0.08	0.00	0.09	0.00	10.48	9.85	12.21	51.01
0.09	0.00	0.11	0.00	12.21	10.12	14.22	61.13
0.11	0.00	0.13	0.00	14.22	9.83	16.57	70.96
0.13	0.00	0.15	0.01	16.57	8.11	19.31	79.07
0.15	0.01	0.17	0.01	19.31	6.19	22.49	85.25
0.17	0.03	0.20	0.04	22.49	4.39	26.20	89.64
0.20	0.08	0.23	0.13	26.20	2.87	30.53	92.51
0.23	0.21	0.27	0.34	30.53	1.69	35.56	94.20
0.27	0.35	0.31	0.68	35.56	0.88	41.43	95.08
0.31	0.34	0.36	1.03	41.43	0.41	48.27	95.49
0.36	0.27	0.42	1.30	48.27	0.20	56.23	95.69
0.42	0.23	0.49	1.53	56.23	0.18	65.51	95.88
0.49	0.23	0.58	1.76	65.51	0.26	76.32	96.14
0.58	0.20	0.67	1.96	76.32	0.37	88.91	96.51
0.67	0.21	0.78	2.17	88.91	0.46	103.58	96.97
0.78	0.26	0.91	2.43	103.58	0.50	120.67	97.47
0.91	0.33	1.06	2.76	120.67	0.49	140.58	97.96
1.06	0.41	1.24	3.16	140.58	0.46	163.77	98.41
1.24	0.50	1.44	3.67	163.77	0.41	190.80	98.83
1.44	0.60	1.68	4.27	190.80	0.36	222.28	99.19
1.68	0.68	1.95	4.95	222.28	0.31	258.95	99.50
1.95	0.74	2.28	5.70	258.95	0.24	301.68	99.73
2.28	0.79	2.65	6.49	301.68	0.17	351.46	99.90
2.65	0.91	3.09	7.40	351.46	0.10	409.45	100.00
3.09	1.14	3.60	8.54	409.45	0.00	477.01	100.00
3.60	1.54	4.19	10.08	477.01	0.00	555.71	100.00
4.19	2.15	4.88	12.23	555.71	0.00	647.41	100.00
4.88	3.02	5.69	15.25	647.41	0.00	754.23	100.00
5.69	4.18	6.63	19.44	754.23	0.00	878.67	100.00





Result: Analysis Report

Sample Details

Sample ID: 1.3 P 75 750/15

Run Number: 3

Measurement Date: Wed, Aug 01, 2000

Sample File: PARI

Record Number: 44

Analysis Date: Wed, Aug 01, 2000

Sample Path: A:\

Result Source: Analysed

Sample Notes: Test by Pranee : Scientific and Tecnological Research

Equipment Center Chulalongkorn University

Liquid medium : water

System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS17

Obscuration: 17.3 %

Presentation: 30HD

[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 0.715 %

Analysis Model: Polydisperse

Modifications: Active -

Killed Data Channels: Low 0; High 2

Result Statistics

Distribution Type: Volume

Concentration = 0.0124 %Vol

Density = 1.000 g / cub. cm

Specific S.A. = 1.2709 sq. m / g

Mean Diameters:

D (v, 0.1) = 1.82 um

D (v, 0.5) = 8.52 um

D (v, 0.9) = 51.28 um

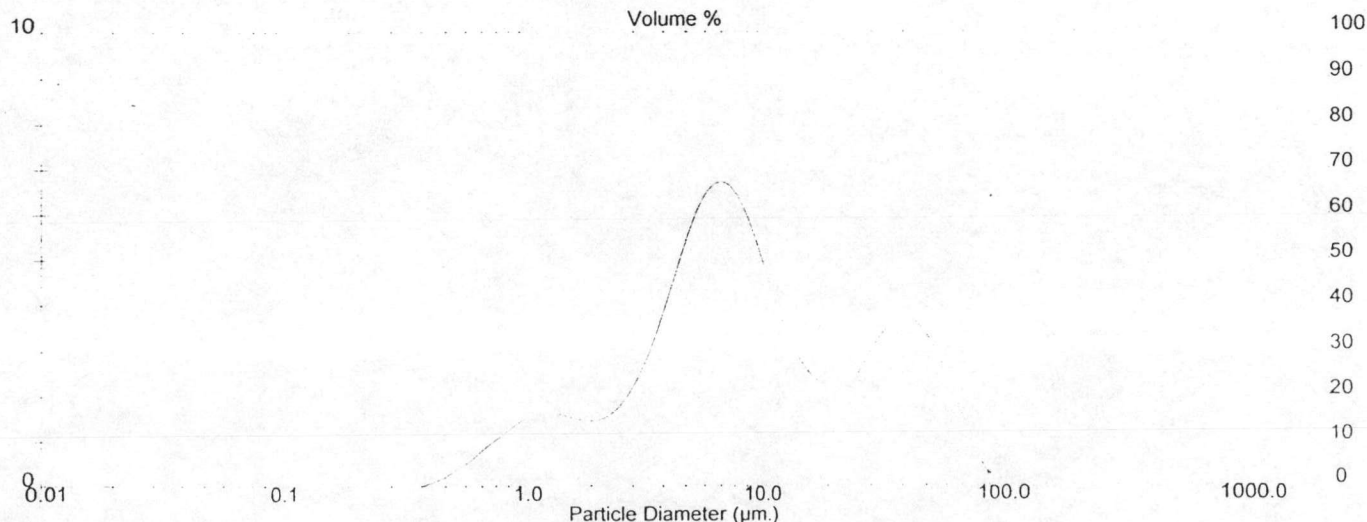
D [4, 3] = 25.45 um

D [3, 2] = 4.72 um

Span = 5.808E+00

Uniformity = 2.466E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.70	7.72	45.87	
0.06	0.00	0.07	0.00	7.72	6.32	52.20	
0.07	0.00	0.08	0.00	9.00	5.49	57.69	
0.08	0.00	0.09	0.00	10.48	4.48	62.16	
0.09	0.00	0.11	0.00	12.21	3.52	65.69	
0.11	0.00	0.13	0.00	14.22	2.80	68.48	
0.13	0.00	0.15	0.00	16.57	2.36	70.84	
0.15	0.00	0.17	0.00	19.31	2.19	73.03	
0.17	0.00	0.20	0.00	22.49	2.18	75.22	
0.20	0.00	0.23	0.00	26.20	2.78	78.00	
0.23	0.00	0.27	0.00	30.53	3.35	81.35	
0.27	0.00	0.31	0.00	35.56	3.68	85.03	
0.31	0.00	0.36	0.00	41.43	3.63	88.67	
0.36	0.00	0.42	0.00	48.27	3.18	91.85	
0.42	0.12	0.49	0.12	56.23	2.41	94.25	
0.49	0.33	0.58	0.45	65.51	1.49	95.74	
0.58	0.56	0.67	1.01	76.32	0.64	96.38	
0.67	0.87	0.78	1.88	88.91	0.02	96.40	
0.78	1.13	0.91	3.02	103.58	0.00	96.40	
0.91	1.40	1.06	4.42	120.67	0.00	96.40	
1.06	1.59	1.24	6.02	140.58	0.00	96.40	
1.24	1.64	1.44	7.65	163.77	0.31	96.70	
1.44	1.57	1.68	9.22	190.80	0.60	97.31	
1.68	1.48	1.95	10.70	222.28	0.76	98.06	
1.95	1.47	2.28	12.16	258.95	0.73	98.80	
2.28	1.63	2.65	13.79	301.68	0.57	99.37	
2.65	2.04	3.09	15.83	351.46	0.40	99.77	
3.09	2.72	3.60	18.55	409.45	0.23	100.00	
3.60	3.65	4.19	22.20	477.01	0.00	100.00	
4.19	4.72	4.88	26.92	555.71	0.00	100.00	
4.88	5.76	5.69	32.68	647.41	0.00	100.00	
5.69	6.50	6.63	39.18	754.23	0.00	100.00	





### Result: Analysis Report

#### Sample Details

Sample ID: 3 P 75 750/9      Run Number: 1      Measured: Tue 29 Aug 2000  
 Sample File: PARI      Record Number: 9      Analysed: Tue 29 Aug 2000  
 Sample Path: C:\SIZERS\DATA\DATA\AID\      Result Source: Analysed  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

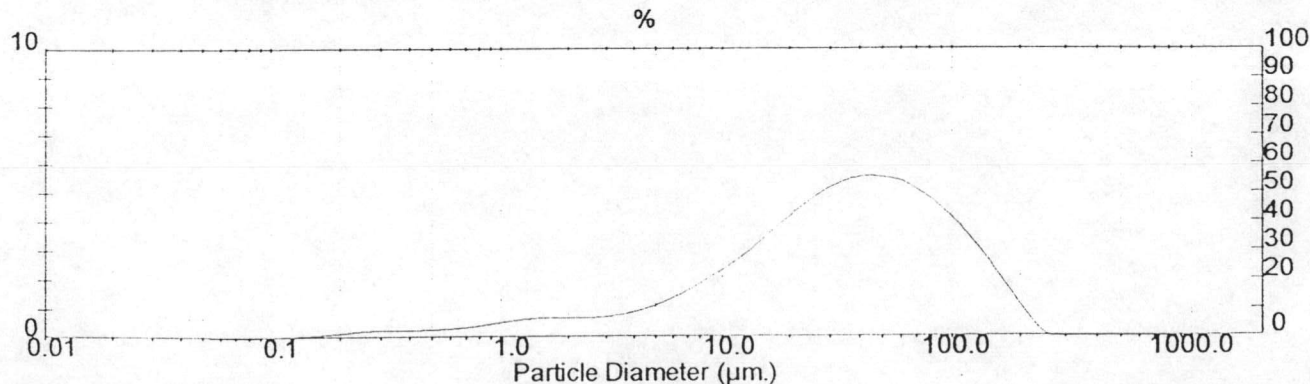
#### System Details

Range Lens: 300RF mm      Beam Length: 2.40 mm      Sampler: MS1      Obscuration: 15.7 %  
 Presentation: 3OHD      [Particle R.I. = ( 1.5295, 0.1000);      Dispersant R.I. = 1.3300]      Residual: 1.076 %  
 Analysis Model: Polydisperse  
 Modifications: Active -      Killed Data Channels: Low 0; High 2

#### Result Statistics

Distribution Type: Volume      Concentration = 0.0212 %Vol      Density = 0.000 g / cub. cm      Specific S.A. = 0.0000 sq. m / g  
 Mean Diameters:      D (v, 0.1) = 3.91 um      D (v, 0.5) = 38.52 um      D (v, 0.9) = 112.10 um  
 D [4, 3] = 47.51 um      D [3, 2] = 5.23 um      Span = 3.228E+00      Uniformity = 9.823E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	1.65	7.72	15.62
0.06	0.02	0.07	0.03	7.72	1.93	9.00	17.56
0.07	0.03	0.08	0.05	9.00	2.25	10.48	19.81
0.08	0.04	0.09	0.09	10.48	2.60	12.21	22.41
0.09	0.05	0.11	0.15	12.21	2.99	14.22	25.41
0.11	0.07	0.13	0.21	14.22	3.42	16.57	28.82
0.13	0.09	0.15	0.30	16.57	3.86	19.31	32.69
0.15	0.12	0.17	0.42	19.31	4.30	22.49	36.99
0.17	0.15	0.20	0.57	22.49	4.71	26.20	41.70
0.20	0.20	0.23	0.76	26.20	5.06	30.53	46.76
0.23	0.24	0.27	1.01	30.53	5.33	35.56	52.09
0.27	0.27	0.31	1.28	35.56	5.50	41.43	57.59
0.31	0.28	0.36	1.55	41.43	5.55	48.27	63.13
0.36	0.28	0.42	1.83	48.27	5.49	56.23	68.63
0.42	0.28	0.49	2.11	56.23	5.38	65.51	74.01
0.49	0.30	0.58	2.42	65.51	5.08	76.32	79.08
0.58	0.33	0.67	2.75	76.32	4.70	88.91	83.78
0.67	0.38	0.78	3.12	88.91	4.24	103.58	88.02
0.78	0.45	0.91	3.57	103.58	3.67	120.67	91.69
0.91	0.52	1.06	4.09	120.67	3.02	140.58	94.72
1.06	0.59	1.24	4.68	140.58	2.34	163.77	97.06
1.24	0.65	1.44	5.33	163.77	1.66	190.80	98.72
1.44	0.69	1.68	6.02	190.80	0.98	222.28	99.70
1.68	0.69	1.95	6.71	222.28	0.30	258.95	100.00
1.95	0.69	2.28	7.40	258.95	0.00	301.68	100.00
2.28	0.69	2.65	8.09	301.68	0.00	351.46	100.00
2.65	0.71	3.09	8.79	351.46	0.00	409.45	100.00
3.09	0.76	3.60	9.55	409.45	0.00	477.01	100.00
3.60	0.86	4.19	10.41	477.01	0.00	555.71	100.00
4.19	0.99	4.88	11.40	555.71	0.00	647.41	100.00
4.88	1.18	5.69	12.58	647.41	0.00	754.23	100.00
5.69	1.40	6.63	13.98	754.23	0.00	878.67	100.00



### Result: Analysis Report

#### Sample Details

Sample ID: 3P75 750/12  
 Sample File: PARI  
 Sample Path: C:\SIZERS\DATA\DATA\AID\  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

Run Number: 7  
 Record Number: 5

Measured: Tue 29 Aug 2000  
 Analysed: Tue 29 Aug 2000  
 Result Source: Analysed

#### System Details

Range Lens: 300RF mm  
 Presentation: 30HD  
 Analysis Model: Polydisperse  
 Modifications: Active -

Beam Length: 2.40 mm  
 [Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2

Sampler: MS1  
 Obscuration: 15.6 %  
 Residual: 0.746 %

#### Result Statistics

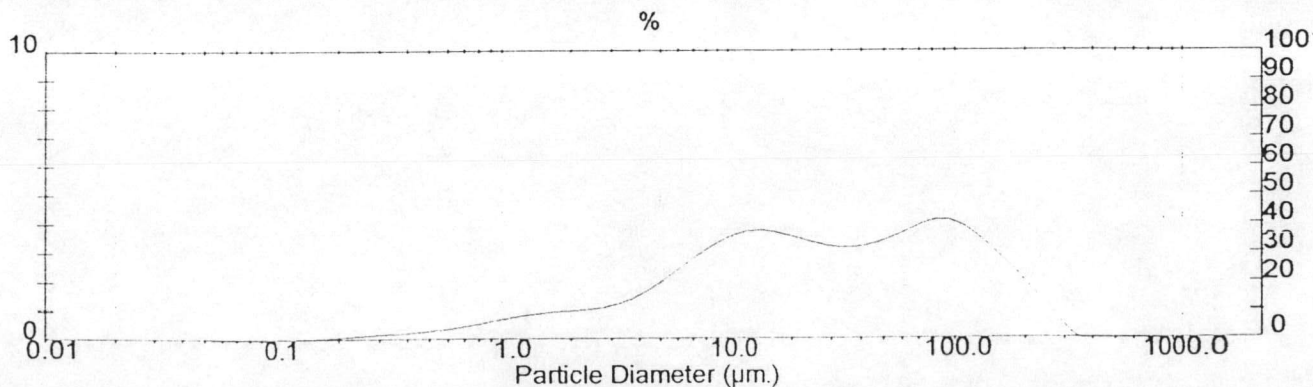
Distribution Type: Volume  
 Mean Diameters:  
 D [4, 3] = 51.02 um

Concentration = 0.0170 %Vol  
 D (v, 0.1) = 2.67 um  
 D [3, 2] = 4.99 um

Density = 0.000 g / cub. cm  
 D (v, 0.5) = 24.73 um  
 Span = 5.445E+00

Specific S.A. = 0.0000 sq. m / g  
 D (v, 0.9) = 137.35 um  
 Uniformity = 1.677E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	5.63	2.83	7.72	23.00
0.06	0.02	0.07	0.02	7.72	3.17	9.00	26.17
0.07	0.02	0.08	0.05	9.00	3.45	10.48	29.62
0.08	0.03	0.09	0.08	10.48	3.64	12.21	33.26
0.09	0.04	0.11	0.12	12.21	3.74	14.22	37.00
0.11	0.05	0.13	0.18	14.22	3.73	16.57	40.73
0.13	0.07	0.15	0.25	16.57	3.65	19.31	44.38
0.15	0.09	0.17	0.33	19.31	3.51	22.49	47.89
0.17	0.11	0.20	0.44	22.49	3.36	26.20	51.25
0.20	0.14	0.23	0.58	26.20	3.23	30.53	54.48
0.23	0.17	0.27	0.74	30.53	3.16	35.56	57.64
0.27	0.20	0.31	0.94	35.56	3.17	41.43	60.80
0.31	0.22	0.36	1.17	41.43	3.26	48.27	64.07
0.36	0.25	0.42	1.42	48.27	3.44	56.23	67.51
0.42	0.29	0.49	1.71	56.23	3.66	65.51	71.17
0.49	0.35	0.58	2.06	65.51	3.92	76.32	75.09
0.58	0.41	0.67	2.47	76.32	4.09	88.91	79.18
0.67	0.50	0.78	2.97	88.91	4.07	103.58	83.25
0.78	0.60	0.91	3.57	103.58	3.83	120.67	87.07
0.91	0.70	1.06	4.27	120.67	3.42	140.58	90.49
1.06	0.80	1.24	5.07	140.58	2.94	163.77	93.43
1.24	0.88	1.44	5.95	163.77	2.43	190.80	95.86
1.44	0.94	1.68	6.89	190.80	1.87	222.28	97.73
1.68	0.98	1.95	7.87	222.28	1.31	258.95	99.04
1.95	1.01	2.28	8.88	258.95	0.76	301.68	99.80
2.28	1.06	2.65	9.94	301.68	0.20	351.46	100.00
2.65	1.14	3.09	11.08	351.46	0.00	409.45	100.00
3.09	1.28	3.60	12.36	409.45	0.00	477.01	100.00
3.60	1.49	4.19	13.84	477.01	0.00	555.71	100.00
4.19	1.76	4.88	15.60	555.71	0.00	647.41	100.00
4.88	2.10	5.69	17.70	647.41	0.00	754.23	100.00
5.69	2.46	6.63	20.16	754.23	0.00	878.67	100.00



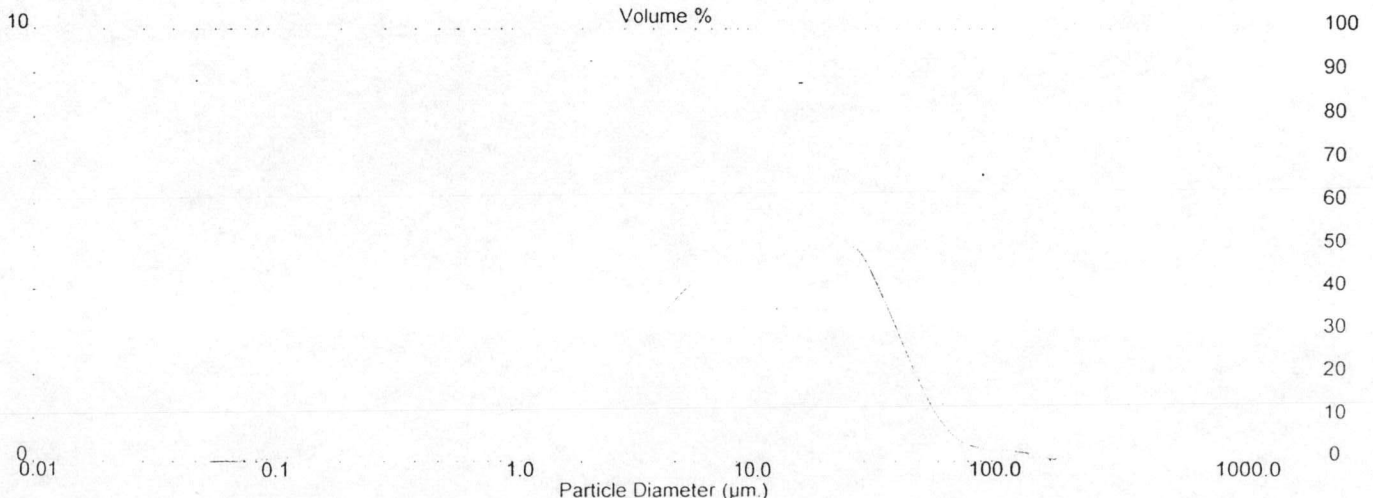
**Result: Analysis Report**

Sample Details		
Sample ID: 3 P75 750/15	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 8	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 25.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.329 %
Analysis Model: Polydisperse			
Modifications: Active -			
	Killed Data Channels: Low 0; High 2		
	Killed Result Channels: < 0.05 um; > 163.77 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0199 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 2.1325 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.30 um	D (v, 0.5) = 10.35 um	D (v, 0.9) = 37.16 um
D [4, 3] = 16.74 um	D [3, 2] = 2.81 um	Span = 3.465E+00	Uniformity = 1.193E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.01	0.06	0.01	6.63	4.42	7.72	41.28
0.06	0.02	0.07	0.04	7.72	4.52	9.00	45.81
0.07	0.04	0.08	0.07	9.00	4.58	10.48	50.38
0.08	0.05	0.09	0.13	10.48	4.64	12.21	55.03
0.09	0.07	0.11	0.20	12.21	4.75	14.22	59.77
0.11	0.10	0.13	0.29	14.22	4.88	16.57	64.66
0.13	0.13	0.15	0.42	16.57	5.01	19.31	69.67
0.15	0.17	0.17	0.58	19.31	5.07	22.49	74.74
0.17	0.22	0.20	0.81	22.49	5.03	26.20	79.78
0.20	0.29	0.23	1.10	26.20	4.92	30.53	84.69
0.23	0.38	0.27	1.48	30.53	4.25	35.56	88.94
0.27	0.45	0.31	1.93	35.56	3.38	41.43	92.32
0.31	0.51	0.36	2.44	41.43	2.47	48.27	94.79
0.36	0.55	0.42	2.99	48.27	1.64	56.23	96.43
0.42	0.62	0.49	3.62	56.23	0.99	65.51	97.42
0.49	0.71	0.58	4.33	65.51	0.57	76.32	97.99
0.58	0.81	0.67	5.14	76.32	0.36	88.91	98.35
0.67	0.93	0.78	6.07	88.91	0.31	103.58	98.67
0.78	1.05	0.91	7.12	103.58	0.36	120.67	99.03
0.91	1.17	1.06	8.29	120.67	0.44	140.58	99.47
1.06	1.28	1.24	9.57	140.58	0.53	163.77	100.00
1.24	1.37	1.44	10.94	163.77	0.00	190.80	100.00
1.44	1.45	1.68	12.40	190.80	0.00	222.28	100.00
1.68	1.54	1.95	13.93	222.28	0.00	258.95	100.00
1.95	1.67	2.28	15.61	258.95	0.00	301.68	100.00
2.28	1.88	2.65	17.49	301.68	0.00	351.46	100.00
2.65	2.18	3.09	19.67	351.46	0.00	409.45	100.00
3.09	2.57	3.60	22.24	409.45	0.00	477.01	100.00
3.60	3.02	4.19	25.26	477.01	0.00	555.71	100.00
4.19	3.48	4.88	28.74	555.71	0.00	647.41	100.00
4.88	3.90	5.69	32.64	647.41	0.00	754.23	100.00
5.69	4.22	6.63	36.86	754.23	0.00	878.67	100.00





### Result: Analysis Report

#### Sample Details

Sample ID: 5 P 75 750 / 9      Run Number: 7      Measured: Tue 29 Aug 2000  
 Sample File: PARI      Record Number: 4      Analysed: Tue 29 Aug 2000  
 Sample Path: C:\SIZERS\DATA\DATA\AID\      Result Source: Analysed  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

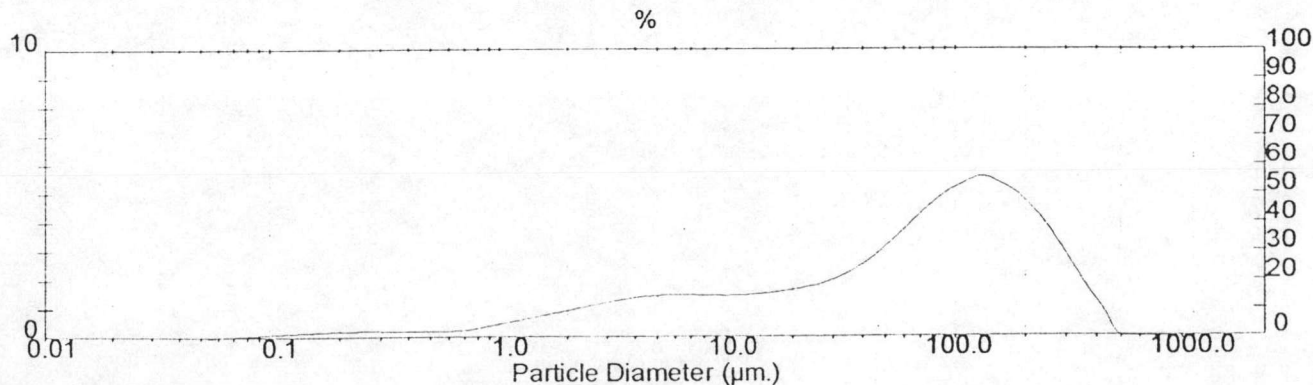
#### System Details

Range Lens: 300RF mm      Beam Length: 2.40 mm      Sampler: MS1      Obscuration: 12.3 %  
 Presentation: 30HD      [Particle R.I. = ( 1.5295, 0.1000);      Dispersant R.I. = 1.3300]  
 Analysis Model: Polydisperse      Residual: 0.750 %  
 Modifications: Active -      Killed Data Channels: Low 0; High 2

#### Result Statistics

Distribution Type: Volume      Concentration = 0.0160 %Vol      Density = 0.000 g / cub. cm      Specific S.A. = 0.0000 sq. m / g  
 Mean Diameters:      D (v, 0.1) = 2.84 um      D (v, 0.5) = 70.48 um      D (v, 0.9) = 237.78 um  
 D [4, 3] = 96.91 um      D [3, 2] = 3.92 um      Span = 3.334E+00      Uniformity = 1.054E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.03	0.06	0.03	6.63	1.48	7.72	19.26
0.06	0.06	0.07	0.09	7.72	1.46	9.00	20.72
0.07	0.09	0.08	0.19	9.00	1.46	10.48	22.18
0.08	0.12	0.09	0.31	10.48	1.46	12.21	23.64
0.09	0.15	0.11	0.46	12.21	1.49	14.22	25.13
0.11	0.17	0.13	0.63	14.22	1.53	16.57	26.66
0.13	0.20	0.15	0.83	16.57	1.59	19.31	28.25
0.15	0.22	0.17	1.05	19.31	1.67	22.49	29.93
0.17	0.24	0.20	1.29	22.49	1.78	26.20	31.71
0.20	0.25	0.23	1.54	26.20	1.93	30.53	33.63
0.23	0.26	0.27	1.80	30.53	2.13	35.56	35.77
0.27	0.26	0.31	2.07	35.56	2.42	41.43	38.19
0.31	0.26	0.36	2.32	41.43	2.80	48.27	40.98
0.36	0.25	0.42	2.57	48.27	3.26	56.23	44.24
0.42	0.24	0.49	2.81	56.23	3.77	65.51	48.01
0.49	0.24	0.58	3.05	65.51	4.29	76.32	52.29
0.58	0.26	0.67	3.31	76.32	4.75	88.91	57.04
0.67	0.30	0.78	3.61	88.91	5.12	103.58	62.16
0.78	0.38	0.91	3.99	103.58	5.37	120.67	67.53
0.91	0.47	1.06	4.47	120.67	5.55	140.58	73.08
1.06	0.57	1.24	5.04	140.58	5.38	163.77	78.46
1.24	0.68	1.44	5.72	163.77	5.08	190.80	83.54
1.44	0.78	1.68	6.50	190.80	4.61	222.28	88.15
1.68	0.89	1.95	7.39	222.28	4.00	258.95	92.15
1.95	0.99	2.28	8.38	258.95	3.25	301.68	95.40
2.28	1.10	2.65	9.48	301.68	2.39	351.46	97.79
2.65	1.20	3.09	10.68	351.46	1.53	409.45	99.32
3.09	1.30	3.60	11.98	409.45	0.68	477.01	100.00
3.60	1.38	4.19	13.36	477.01	0.00	555.71	100.00
4.19	1.44	4.88	14.81	555.71	0.00	647.41	100.00
4.88	1.48	5.69	16.29	647.41	0.00	754.23	100.00
5.69	1.49	6.63	17.78	754.23	0.00	878.67	100.00





### Result: Analysis Report

#### Sample Details

Sample ID: 5 P 75 750/12  
 Sample File: PARI  
 Sample Path: C:\SIZERS\DATA\DATA\AID\  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

Run Number: 10  
 Record Number: 8

Measured: Tue 29 Aug 2000  
 Analysed: Tue 29 Aug 2000  
 Result Source: Analysed

#### System Details

Range Lens: 300RF mm  
 Presentation: 30HD  
 Analysis Model: Polydisperse  
 Modifications: Active -

Beam Length: 2.40 mm  
 [Particle R.I. = (1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2

Sampler: MS1

Obscuration: 15.5 %

Residual: 1.005 %

#### Result Statistics

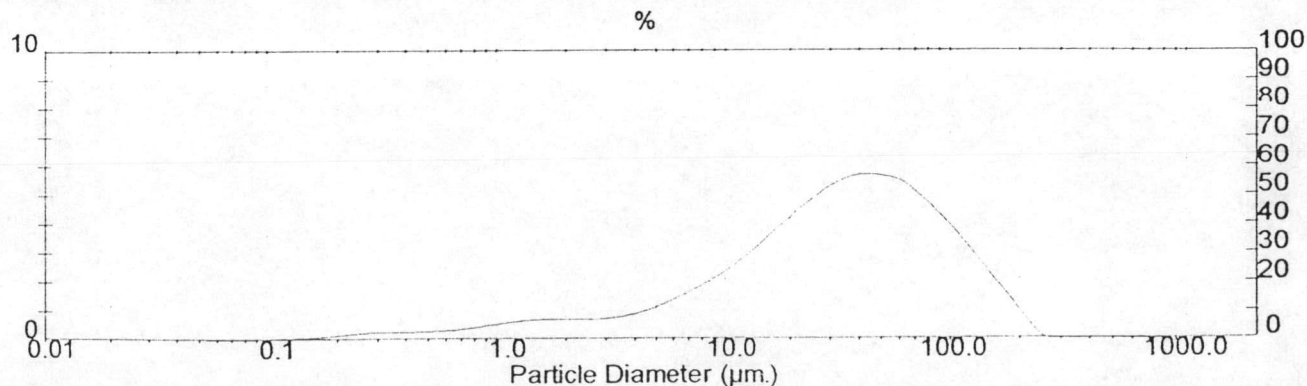
Distribution Type: Volume  
 Mean Diameters:  
 D [4, 3] = 46.25 um

Concentration = 0.0207 %Vol  
 D (v, 0.1) = 3.82 um  
 D [3, 2] = 5.21 um

Density = 0.000 g / cub. cm  
 D (v, 0.5) = 32.89 um  
 Span = 3.181E+00

Specific S.A. = 0.0000 sq. m / g  
 D (v, 0.9) = 108.43 um  
 Uniformity = 9.695E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	1.67	7.72	15.85
0.06	0.02	0.07	0.03	7.72	1.96	9.00	17.81
0.07	0.03	0.08	0.05	9.00	2.28	10.48	20.09
0.08	0.04	0.09	0.09	10.48	2.63	12.21	22.72
0.09	0.05	0.11	0.14	12.21	3.02	14.22	25.75
0.11	0.07	0.13	0.21	14.22	3.45	16.57	29.19
0.13	0.09	0.15	0.30	16.57	3.90	19.31	33.09
0.15	0.11	0.17	0.41	19.31	4.35	22.49	37.45
0.17	0.15	0.20	0.56	22.49	4.78	26.20	42.22
0.20	0.19	0.23	0.76	26.20	5.15	30.53	47.38
0.23	0.24	0.27	1.00	30.53	5.44	35.56	52.82
0.27	0.27	0.31	1.27	35.56	5.62	41.43	58.44
0.31	0.28	0.36	1.55	41.43	5.67	48.27	64.11
0.36	0.28	0.42	1.83	48.27	5.60	56.23	69.71
0.42	0.29	0.49	2.11	56.23	5.46	65.51	75.17
0.49	0.31	0.58	2.42	65.51	5.07	76.32	80.24
0.58	0.33	0.67	2.75	76.32	4.60	88.91	84.84
0.67	0.38	0.78	3.13	88.91	4.06	103.58	88.90
0.78	0.45	0.91	3.59	103.58	3.45	120.67	92.35
0.91	0.53	1.06	4.12	120.67	2.81	140.58	95.17
1.06	0.60	1.24	4.72	140.58	2.17	163.77	97.34
1.24	0.66	1.44	5.38	163.77	1.53	190.80	98.87
1.44	0.70	1.68	6.08	190.80	0.89	222.28	99.75
1.68	0.71	1.95	6.78	222.28	0.25	258.95	100.00
1.95	0.70	2.28	7.49	258.95	0.00	301.68	100.00
2.28	0.70	2.65	8.18	301.68	0.00	351.46	100.00
2.65	0.72	3.09	8.90	351.46	0.00	409.45	100.00
3.09	0.77	3.60	9.68	409.45	0.00	477.01	100.00
3.60	0.87	4.19	10.55	477.01	0.00	555.71	100.00
4.19	1.01	4.88	11.56	555.71	0.00	647.41	100.00
4.88	1.20	5.69	12.76	647.41	0.00	754.23	100.00
5.69	1.42	6.63	14.17	754.23	0.00	878.67	100.00



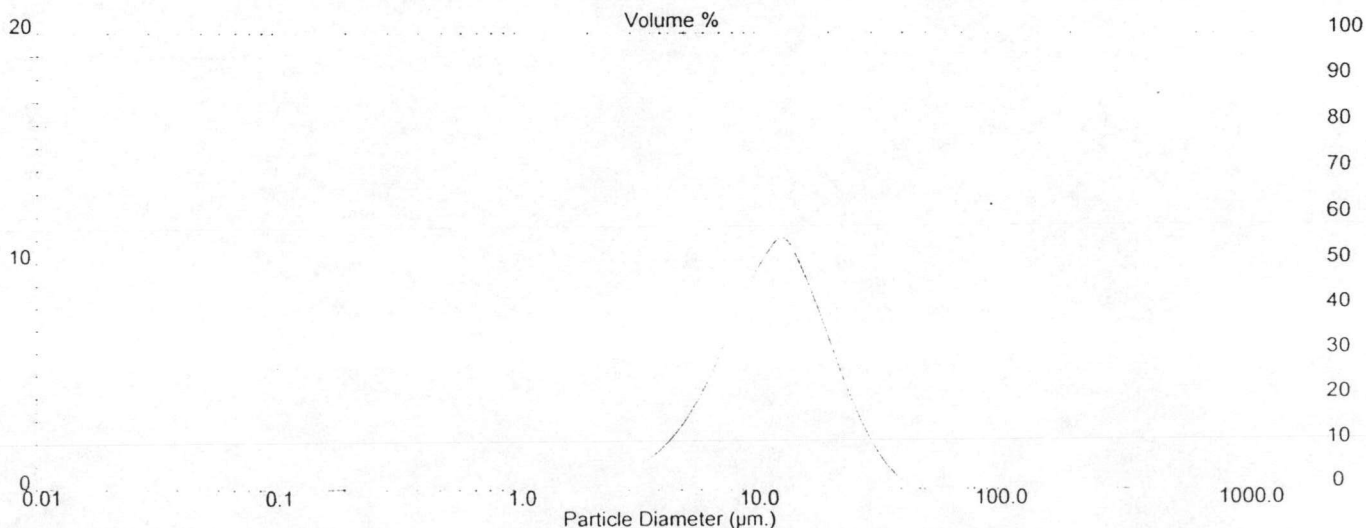
### Result: Analysis Report

Sample Details		
Sample ID: 5 P75 750115	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 1	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.285 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0214 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0815 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.14 um	D (v, 0.5) = 11.66 um	D (v, 0.9) = 23.19 um
D [4, 3] = 14.84 um	D [3, 2] = 5.55 um	Span = 1.634E+00	Uniformity = 6.712E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.95	7.72	26.03
0.06	0.00	0.07	0.00	7.72	7.62	9.00	33.65
0.07	0.00	0.08	0.00	9.00	9.19	10.48	42.84
0.08	0.00	0.09	0.00	10.48	10.39	12.21	53.23
0.09	0.00	0.11	0.00	12.21	11.10	14.22	64.34
0.11	0.00	0.13	0.01	14.22	10.04	16.57	74.37
0.13	0.01	0.15	0.02	16.57	8.30	19.31	82.67
0.15	0.02	0.17	0.04	19.31	6.30	22.49	88.97
0.17	0.04	0.20	0.08	22.49	4.38	26.20	93.36
0.20	0.11	0.23	0.19	26.20	2.75	30.53	96.11
0.23	0.22	0.27	0.41	30.53	1.49	35.56	97.60
0.27	0.32	0.31	0.73	35.56	0.64	41.43	98.24
0.31	0.31	0.36	1.04	41.43	0.15	48.27	98.38
0.36	0.25	0.42	1.28	48.27	0.00	56.23	98.38
0.42	0.22	0.49	1.50	56.23	0.00	65.51	98.38
0.49	0.21	0.58	1.71	65.51	0.01	76.32	98.39
0.58	0.19	0.67	1.90	76.32	0.11	88.91	98.51
0.67	0.21	0.78	2.11	88.91	0.20	103.58	98.70
0.78	0.27	0.91	2.38	103.58	0.24	120.67	98.94
0.91	0.34	1.06	2.72	120.67	0.25	140.58	99.19
1.06	0.43	1.24	3.14	140.58	0.23	163.77	99.41
1.24	0.52	1.44	3.67	163.77	0.19	190.80	99.61
1.44	0.61	1.68	4.28	190.80	0.16	222.28	99.77
1.68	0.69	1.95	4.97	222.28	0.12	258.95	99.88
1.95	0.74	2.28	5.70	258.95	0.08	301.68	99.96
2.28	0.79	2.65	6.49	301.68	0.04	351.46	100.00
2.65	0.91	3.09	7.40	351.46	0.00	409.45	100.00
3.09	1.16	3.60	8.56	409.45	0.00	477.01	100.00
3.60	1.60	4.19	10.15	477.01	0.00	555.71	100.00
4.19	2.27	4.88	12.42	555.71	0.00	647.41	100.00
4.88	3.21	5.69	15.63	647.41	0.00	754.23	100.00
5.69	4.45	6.63	20.08	754.23	0.00	878.67	100.00



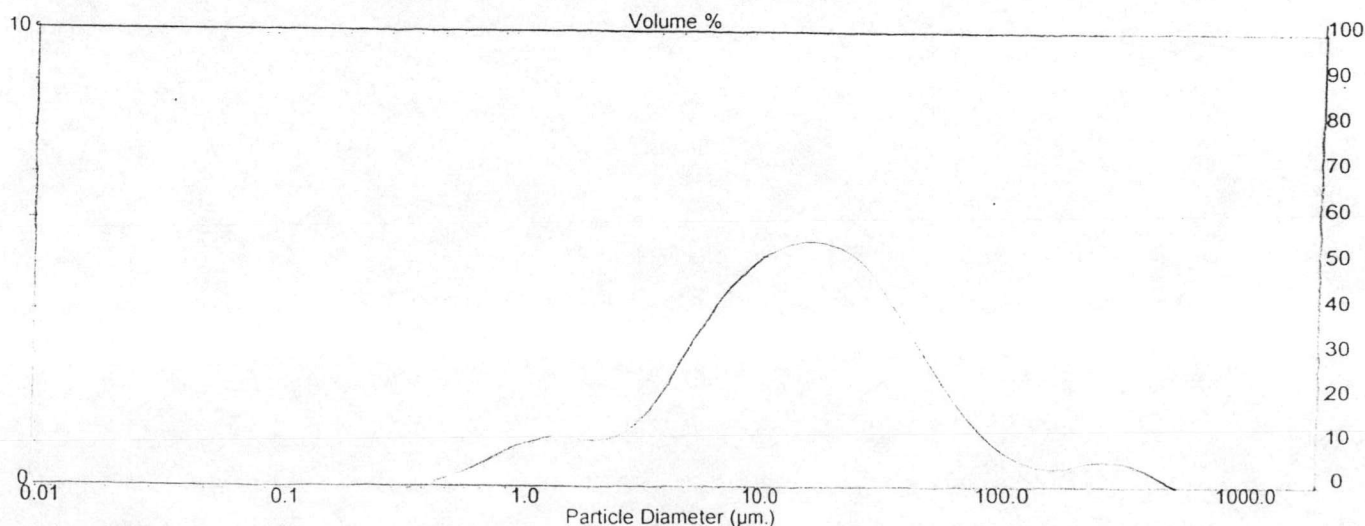
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 P 50 250/9	Run Number: 5	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 64	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 13.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.308 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0132 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9417 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.86 um	D (v, 0.5) = 15.09 um	D (v, 0.9) = 60.16 um
D [4, 3] = 30.10 um	D [3, 2] = 6.37 um	Span = 3.798E+00	Uniformity = 1.522E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.24	7.72	27.91
0.06	0.00	0.07	0.00	7.72	4.64	9.00	32.56
0.07	0.00	0.08	0.00	9.00	4.93	10.48	37.49
0.08	0.00	0.09	0.00	10.48	5.15	12.21	42.64
0.09	0.00	0.11	0.00	12.21	5.29	14.22	47.93
0.11	0.00	0.13	0.00	14.22	5.39	16.57	53.31
0.13	0.00	0.15	0.00	16.57	5.41	19.31	58.72
0.15	0.00	0.17	0.00	19.31	5.34	22.49	64.06
0.17	0.00	0.20	0.00	22.49	5.18	26.20	69.24
0.20	0.00	0.23	0.00	26.20	4.98	30.53	74.22
0.23	0.00	0.27	0.00	30.53	4.53	35.56	78.75
0.27	0.00	0.31	0.00	35.56	3.99	41.43	82.74
0.31	0.01	0.36	0.01	41.43	3.40	48.27	86.14
0.36	0.08	0.42	0.08	48.27	2.80	56.23	88.95
0.42	0.17	0.49	0.25	56.23	2.23	65.51	91.18
0.49	0.29	0.58	0.53	65.51	1.71	76.32	92.88
0.58	0.42	0.67	0.95	76.32	1.26	88.91	94.15
0.67	0.59	0.78	1.54	88.91	0.91	103.58	95.06
0.78	0.74	0.91	2.27	103.58	0.67	120.67	95.73
0.91	0.88	1.06	3.15	120.67	0.54	140.58	96.27
1.06	1.00	1.24	4.15	140.58	0.50	163.77	96.77
1.24	1.05	1.44	5.20	163.77	0.53	190.80	97.30
1.44	1.06	1.68	6.26	190.80	0.58	222.28	97.88
1.68	1.03	1.95	7.29	222.28	0.61	258.95	98.50
1.95	1.03	2.28	8.32	258.95	0.58	301.68	99.07
2.28	1.09	2.65	9.41	301.68	0.47	351.46	99.54
2.65	1.27	3.09	10.68	351.46	0.31	409.45	99.85
3.09	1.57	3.60	12.26	409.45	0.15	477.01	100.00
3.60	2.00	4.19	14.26	477.01	0.00	555.71	100.00
4.19	2.54	4.88	16.80	555.71	0.00	647.41	100.00
4.88	3.14	5.69	19.95	647.41	0.00	754.23	100.00
5.69	3.73	6.63	23.68	754.23	0.00	878.67	100.00





## Result: Analysis Report

## Sample Details

Sample ID: I-5 P50 250/12

Run Number: 4

Measurement Date: Wed, Aug 01, 2000

Sample File: PARI

Record Number: 3

Analysis Date: Wed, Aug 01, 2000

Sample Path: A:\

Result Source: Analysed

Sample Notes: Test by Pranee : Scientific and Technological Research

Equipment Center Chulalongkorn University

Liquid medium : water

## System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS17

Obscuration: 21.3 %

Presentation: 30HD

[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 1.734 %

Analysis Model: Polydisperse

Modifications: Active --

Killed Data Channels: Low 0; High 2

## Result Statistics

Distribution Type: Volume

Concentration = 0.0174 %Vol

Density = 1.000 g / cub. cm

Specific S.A. = 1.1639 sq. m / g

Mean Diameters:

D (v, 0.1) = 2.65 um

D (v, 0.5) = 9.12 um

D (v, 0.9) = 21.30 um

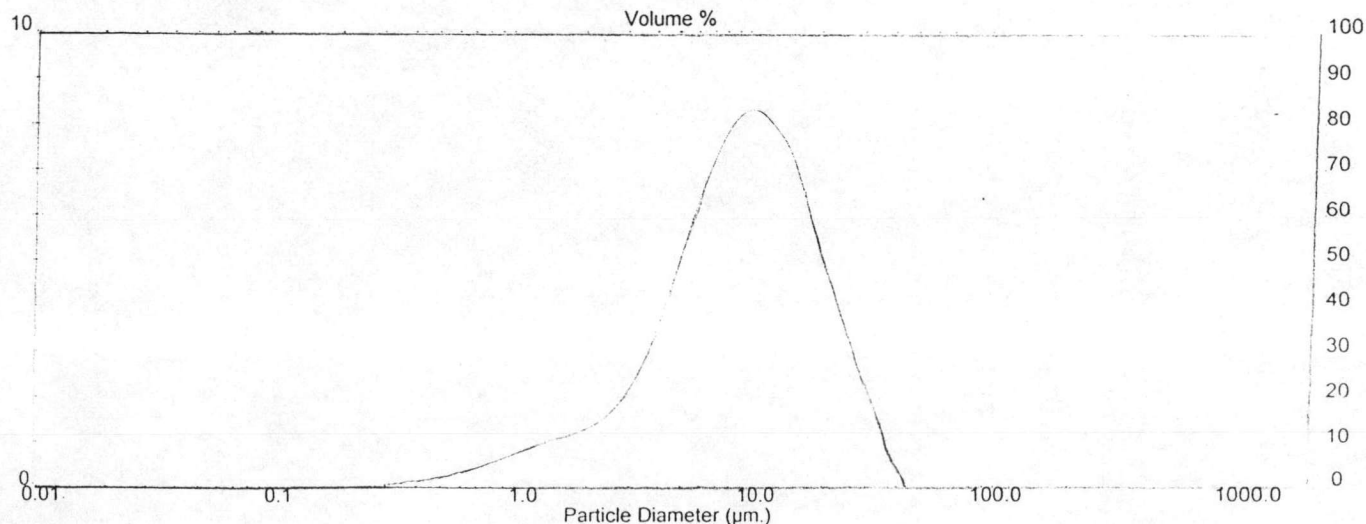
D [4, 3] = 10.79 um

D [3, 2] = 5.16 um

Span = 2.046E+00

Uniformity = 6.254E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.53	7.29	7.72	41.36
0.06	0.00	0.07	0.00	7.72	7.94	9.00	49.29
0.07	0.00	0.08	0.00	9.00	8.25	10.48	57.55
0.08	0.00	0.09	0.00	10.48	8.22	12.21	65.76
0.09	0.00	0.11	0.00	12.21	7.83	14.22	73.59
0.11	0.00	0.13	0.00	14.22	7.21	16.57	80.81
0.13	0.00	0.15	0.00	16.57	5.98	19.31	86.79
0.15	0.00	0.17	0.00	19.31	4.79	22.49	91.58
0.17	0.01	0.20	0.01	22.49	3.65	26.20	95.23
0.20	0.01	0.23	0.02	26.20	2.57	30.53	97.80
0.23	0.03	0.27	0.05	30.53	1.55	35.56	99.35
0.27	0.05	0.31	0.10	35.56	0.65	41.43	100.00
0.31	0.08	0.36	0.18	41.43	0.00	48.27	100.00
0.36	0.11	0.42	0.29	48.27	0.00	56.23	100.00
0.42	0.16	0.49	0.45	56.23	0.00	65.51	100.00
0.49	0.24	0.58	0.69	65.51	0.00	76.32	100.00
0.58	0.33	0.67	1.02	76.32	0.00	88.91	100.00
0.67	0.46	0.78	1.47	88.91	0.00	103.58	100.00
0.78	0.59	0.91	2.07	103.58	0.00	120.67	100.00
0.91	0.74	1.06	2.81	120.67	0.00	140.58	100.00
1.06	0.89	1.24	3.70	140.58	0.00	163.77	100.00
1.24	1.02	1.44	4.71	163.77	0.00	190.80	100.00
1.44	1.12	1.68	5.83	190.80	0.00	222.28	100.00
1.68	1.21	1.95	7.04	222.28	0.00	258.95	100.00
1.95	1.36	2.28	8.40	258.95	0.00	301.68	100.00
2.28	1.60	2.65	10.00	301.68	0.00	351.46	100.00
2.65	2.00	3.09	12.00	351.46	0.00	409.45	100.00
3.09	2.58	3.60	14.58	409.45	0.00	477.01	100.00
3.60	3.37	4.19	17.94	477.01	0.00	555.71	100.00
4.19	4.33	4.88	22.27	555.71	0.00	647.41	100.00
4.88	5.38	5.69	27.65	647.41	0.00	754.23	100.00
5.69	6.41	6.63	34.07	754.23	0.00	878.67	100.00



### Result: Analysis Report

#### Sample Details

Sample ID: 1.5 P 50 250/15  
 Sample File: PARI  
 Sample Path: C:\SIZERS\DATA\DATA\AID\  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

Run Number: 7  
 Record Number: 3

Measured: Tue 29 Aug 2000  
 Analysed: Tue 29 Aug 2000  
 Result Source: Analysed

#### System Details

Range Lens: 300RF mm  
 Presentation: 30HD  
 Analysis Model: Polydisperse  
 Modifications: Active -

Beam Length: 2.40 mm  
 [Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2

Sampler: MS1  
 Obscuration: 12.7 %  
 Residual: 2.135 %

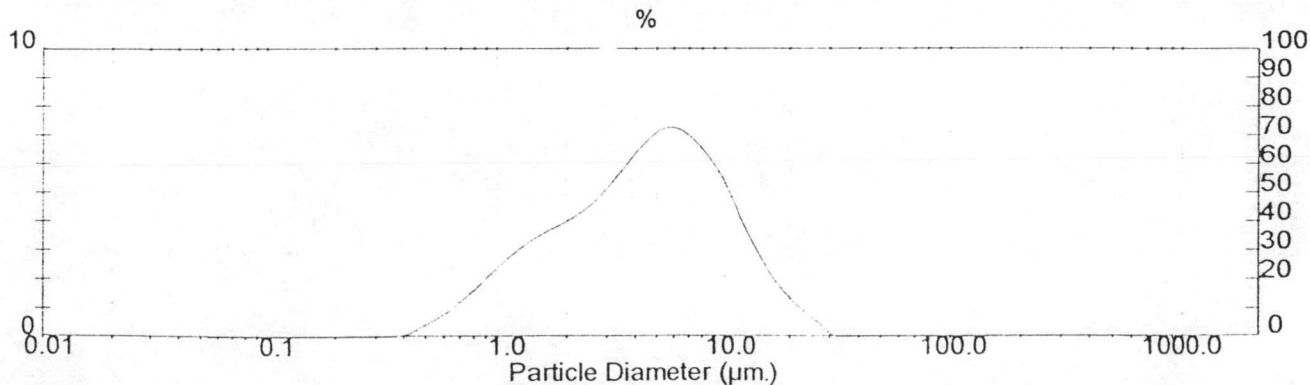
#### Result Statistics

Distribution Type: Volume  
 Mean Diameters:  
 D [4, 3] = 5.86 um

Concentration = 0.0053 %Vol  
 D (v, 0.1) = 1.24 um  
 D [3, 2] = 2.87 um  
 Density = 0.000 g / cub. cm  
 D (v, 0.5) = 4.61 um  
 Span = 2.361E+00

Specific S.A = 0.0000 sq. m / g  
 D (v, 0.9) = 12.13 um  
 Uniformity = 7.469E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.91	7.72	73.94
0.06	0.00	0.07	0.00	7.72	6.31	9.00	80.25
0.07	0.00	0.08	0.00	9.00	5.54	10.48	85.78
0.08	0.00	0.09	0.00	10.48	4.39	12.21	90.18
0.09	0.00	0.11	0.00	12.21	3.34	14.22	93.51
0.11	0.00	0.13	0.00	14.22	2.46	16.57	95.97
0.13	0.00	0.15	0.00	16.57	1.75	19.31	97.73
0.15	0.00	0.17	0.00	19.31	1.20	22.49	98.93
0.17	0.00	0.20	0.00	22.49	0.76	26.20	99.68
0.20	0.00	0.23	0.00	26.20	0.32	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.08	0.42	0.08	48.27	0.00	56.23	100.00
0.42	0.28	0.49	0.36	56.23	0.00	65.51	100.00
0.49	0.55	0.58	0.91	65.51	0.00	76.32	100.00
0.58	0.88	0.67	1.79	76.32	0.00	88.91	100.00
0.67	1.31	0.78	3.10	88.91	0.00	103.58	100.00
0.78	1.79	0.91	4.90	103.58	0.00	120.67	100.00
0.91	2.29	1.06	7.19	120.67	0.00	140.58	100.00
1.06	2.77	1.24	9.96	140.58	0.00	163.77	100.00
1.24	3.19	1.44	13.16	163.77	0.00	190.80	100.00
1.44	3.54	1.68	16.69	190.80	0.00	222.28	100.00
1.68	3.82	1.95	20.51	222.28	0.00	258.95	100.00
1.95	4.10	2.28	24.61	258.95	0.00	301.68	100.00
2.28	4.46	2.65	29.07	301.68	0.00	351.46	100.00
2.65	4.95	3.09	34.02	351.46	0.00	409.45	100.00
3.09	5.57	3.60	39.58	409.45	0.00	477.01	100.00
3.60	6.22	4.19	45.81	477.01	0.00	555.71	100.00
4.19	6.81	4.88	52.62	555.71	0.00	647.41	100.00
4.88	7.18	5.69	59.80	647.41	0.00	754.23	100.00
5.69	7.23	6.63	67.03	754.23	0.00	878.67	100.00



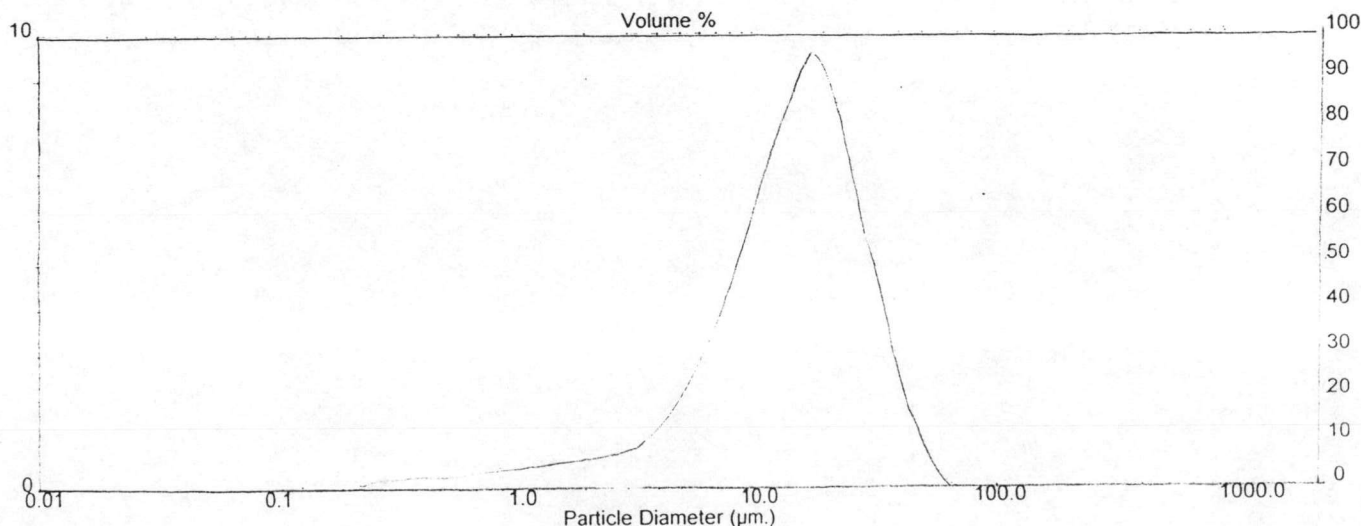
### Result: Analysis Report

Sample Details		
Sample ID: I.5 P50 500 i9	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 2	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.8 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.236 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0278 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9670 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.18 um	D (v, 0.5) = 15.16 um	D (v, 0.9) = 32.68 um
D [4, 3] = 20.29 um	D [3, 2] = 6.20 um	Span = 1.881E+00	Uniformity = 7.850E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	3.82	7.72	20.78
0.06	0.00	0.07	0.00	7.72	4.81	9.00	25.59
0.07	0.00	0.08	0.00	9.00	5.88	10.48	31.48
0.08	0.00	0.09	0.00	10.48	6.98	12.21	38.45
0.09	0.00	0.11	0.01	12.21	7.98	14.22	46.44
0.11	0.00	0.13	0.01	14.22	8.83	16.57	55.26
0.13	0.01	0.15	0.02	16.57	9.50	19.31	64.77
0.15	0.02	0.17	0.03	19.31	8.97	22.49	73.74
0.17	0.03	0.20	0.06	22.49	7.80	26.20	81.54
0.20	0.06	0.23	0.13	26.20	6.23	30.53	87.77
0.23	0.11	0.27	0.24	30.53	4.54	35.56	92.31
0.27	0.17	0.31	0.41	35.56	2.98	41.43	95.29
0.31	0.20	0.36	0.61	41.43	1.70	48.27	96.99
0.36	0.22	0.42	0.83	48.27	0.77	56.23	97.77
0.42	0.25	0.49	1.09	56.23	0.21	65.51	97.98
0.49	0.31	0.58	1.40	65.51	0.00	76.32	97.98
0.58	0.35	0.67	1.75	76.32	0.00	88.91	97.98
0.67	0.42	0.78	2.17	88.91	0.02	103.58	98.00
0.78	0.47	0.91	2.63	103.58	0.15	120.67	98.15
0.91	0.53	1.06	3.16	120.67	0.25	140.58	98.39
1.06	0.58	1.24	3.75	140.58	0.30	163.77	98.69
1.24	0.62	1.44	4.37	163.77	0.31	190.80	99.01
1.44	0.63	1.68	5.00	190.80	0.30	222.28	99.30
1.68	0.63	1.95	5.63	222.28	0.26	258.95	99.57
1.95	0.65	2.28	6.28	258.95	0.20	301.68	99.77
2.28	0.70	2.65	6.98	301.68	0.14	351.46	99.91
2.65	0.80	3.09	7.78	351.46	0.09	409.45	100.00
3.09	0.98	3.60	8.76	409.45	0.00	477.01	100.00
3.60	1.27	4.19	10.03	477.01	0.00	555.71	100.00
4.19	1.69	4.88	11.73	555.71	0.00	647.41	100.00
4.88	2.26	5.69	13.99	647.41	0.00	754.23	100.00
5.69	2.97	6.63	16.96	754.23	0.00	878.67	100.00





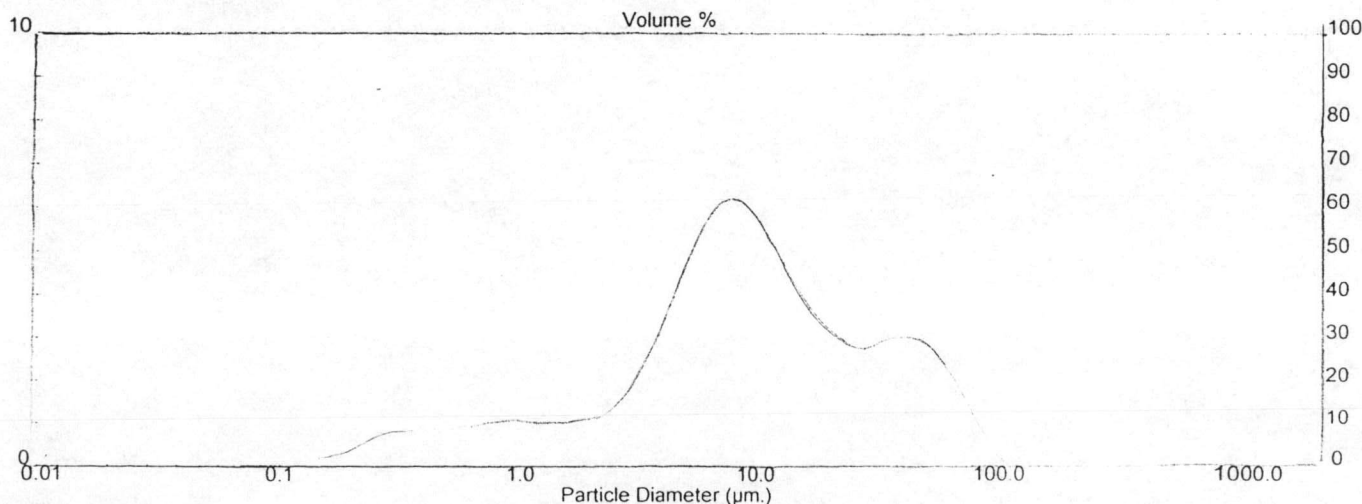
### Result: Analysis Report

Sample Details		
Sample ID: I.5 P50 500 / 12	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 22.2 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.361 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		
	Killed Result Channels: < 0.05 um; > 222.28 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0162 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 2.2106 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.10 um	D (v, 0.5) = 9.32 um	D (v, 0.9) = 45.82 um
D [4, 3] = 16.79 um	D [3, 2] = 2.71 um	Soan = 4.799E+00	Uniformity = 1.328E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.98	7.72	42.42
0.06	0.01	0.07	0.01	7.72	6.17	9.00	48.59
0.07	0.01	0.08	0.03	9.00	6.00	10.48	54.59
0.08	0.02	0.09	0.05	10.48	5.54	12.21	60.13
0.09	0.03	0.11	0.08	12.21	4.93	14.22	65.06
0.11	0.05	0.13	0.13	14.22	4.28	16.57	69.34
0.13	0.08	0.15	0.21	16.57	3.72	19.31	73.06
0.15	0.13	0.17	0.34	19.31	3.28	22.49	76.33
0.17	0.22	0.20	0.56	22.49	2.97	26.20	79.31
0.20	0.37	0.23	0.94	26.20	2.75	30.53	82.06
0.23	0.58	0.27	1.52	30.53	2.89	35.56	84.95
0.27	0.77	0.31	2.29	35.56	3.03	41.43	87.98
0.31	0.82	0.36	3.11	41.43	3.06	48.27	91.03
0.36	0.81	0.42	3.92	48.27	2.87	56.23	93.90
0.42	0.84	0.49	4.76	56.23	2.45	65.51	96.35
0.49	0.92	0.58	5.68	65.51	1.85	76.32	98.20
0.58	0.94	0.67	6.61	76.32	1.18	88.91	99.38
0.67	1.01	0.78	7.62	88.91	0.55	103.58	99.93
0.78	1.03	0.91	8.65	103.58	0.07	120.67	100.00
0.91	1.07	1.06	9.72	120.67	0.00	140.58	100.00
1.06	1.09	1.24	10.82	140.58	0.00	163.77	100.00
1.24	1.08	1.44	11.90	163.77	0.00	190.80	100.00
1.44	1.04	1.68	12.94	190.80	0.00	222.28	100.00
1.68	1.01	1.95	13.94	222.28	0.00	258.95	100.00
1.95	1.06	2.28	15.00	258.95	0.00	301.68	100.00
2.28	1.23	2.65	16.23	301.68	0.00	351.46	100.00
2.65	1.57	3.09	17.79	351.46	0.00	409.45	100.00
3.09	2.09	3.60	19.89	409.45	0.00	477.01	100.00
3.60	2.82	4.19	22.71	477.01	0.00	555.71	100.00
4.19	3.69	4.88	26.39	555.71	0.00	647.41	100.00
4.88	4.61	5.69	31.01	647.41	0.00	754.23	100.00
5.69	5.43	6.63	36.44	754.23	0.00	878.67	100.00



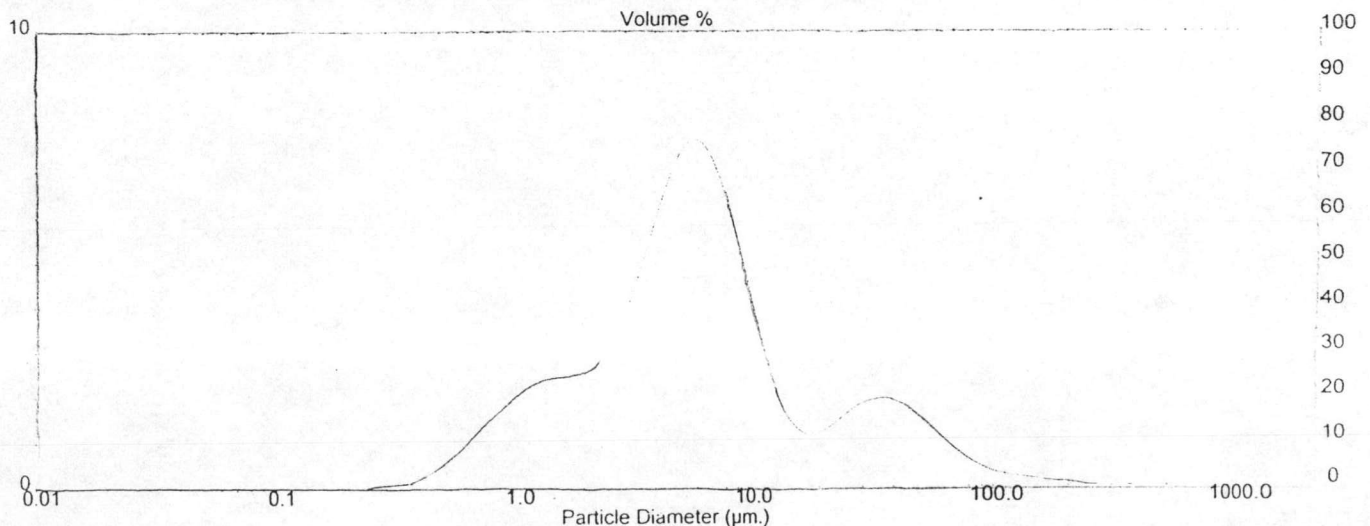
### Result: Analysis Report

Sample Details		
Sample ID: I.5 P50 500/15	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 34	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.4 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.646 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0127 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.7474 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.35 um	D (v, 0.5) = 5.77 um	D (v, 0.9) = 36.65 um
D [4, 3] = 15.04 um	D [3, 2] = 3.43 um	Span = 6.122E+00	Uniformity = 2.078E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	7.09	7.72	64.04
0.06	0.00	0.07	0.00	7.72	6.08	9.00	70.12
0.07	0.00	0.08	0.00	9.00	4.80	10.48	74.91
0.08	0.00	0.09	0.00	10.48	3.47	12.21	78.38
0.09	0.00	0.11	0.00	12.21	2.17	14.22	80.55
0.11	0.00	0.13	0.00	14.22	1.44	16.57	81.99
0.13	0.00	0.15	0.00	16.57	1.16	19.31	83.16
0.15	0.00	0.17	0.00	19.31	1.24	22.49	84.40
0.17	0.00	0.20	0.00	22.49	1.50	26.20	85.89
0.20	0.00	0.23	0.00	26.20	1.78	30.53	87.67
0.23	0.00	0.27	0.00	30.53	1.94	35.56	89.61
0.27	0.00	0.31	0.00	35.56	1.94	41.43	91.55
0.31	0.00	0.36	0.00	41.43	1.78	48.27	93.33
0.36	0.08	0.42	0.08	48.27	1.49	56.23	94.82
0.42	0.28	0.49	0.36	56.23	1.15	65.51	95.97
0.49	0.56	0.58	0.92	65.51	0.83	76.32	96.80
0.58	0.85	0.67	1.77	76.32	0.56	88.91	97.36
0.67	1.23	0.78	3.01	88.91	0.38	103.58	97.74
0.78	1.55	0.91	4.56	103.58	0.29	120.67	98.03
0.91	1.89	1.06	6.44	120.67	0.28	140.58	98.31
1.06	2.17	1.24	8.61	140.58	0.31	163.77	98.62
1.24	2.33	1.44	10.94	163.77	0.36	190.80	98.98
1.44	2.37	1.68	13.31	190.80	0.37	222.28	99.35
1.68	2.40	1.95	15.71	222.28	0.32	258.95	99.67
1.95	2.57	2.28	18.27	258.95	0.22	301.68	99.89
2.28	2.94	2.65	21.22	301.68	0.11	351.46	100.00
2.65	3.62	3.09	24.84	351.46	0.00	409.45	100.00
3.09	4.57	3.60	29.40	409.45	0.00	477.01	100.00
3.60	5.69	4.19	35.09	477.01	0.00	555.71	100.00
4.19	6.76	4.88	41.85	555.71	0.00	647.41	100.00
4.88	7.49	5.69	49.34	647.41	0.00	754.23	100.00
5.69	7.61	6.63	56.95	754.23	0.00	878.67	100.00



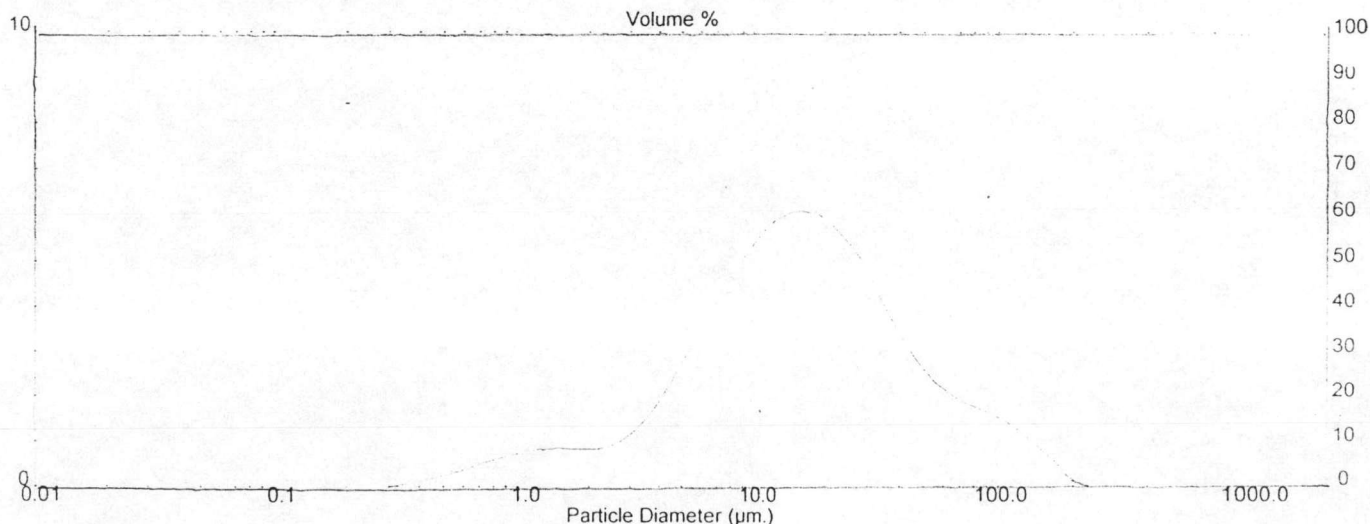
### Result: Analysis Report

Sample Details		
Sample ID: 1-5 P50 75019	Run Number: 5	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 18.4 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.514 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0198 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8823 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.51 um	D (v, 0.5) = 15.42 um	D (v, 0.9) = 61.20 um
D [4, 3] = 25.64 um	D [3, 2] = 6.80 um	Span = 3.742E+00	Uniformity = 1.162E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.05	0.00	6.63	4.21	7.72	25.11
0.06	0.00	0.07	0.00	7.72	4.78	9.00	29.89
0.07	0.00	0.08	0.00	9.00	5.27	10.48	35.16
0.08	0.00	0.09	0.00	10.48	5.67	12.21	40.83
0.09	0.00	0.11	0.00	12.21	5.96	14.22	46.79
0.11	0.00	0.13	0.00	14.22	6.11	16.57	52.90
0.13	0.00	0.15	0.00	16.57	6.08	19.31	58.98
0.15	0.00	0.17	0.00	19.31	5.86	22.49	64.83
0.17	0.00	0.20	0.00	22.49	5.48	26.20	70.32
0.20	0.00	0.23	0.00	26.20	5.03	30.53	75.34
0.23	0.00	0.27	0.00	30.53	4.31	35.56	79.66
0.27	0.00	0.31	0.00	35.56	3.61	41.43	83.27
0.31	0.05	0.36	0.06	41.43	2.99	48.27	86.26
0.36	0.11	0.42	0.17	48.27	2.51	56.23	88.77
0.42	0.19	0.49	0.37	56.23	2.15	65.51	90.92
0.49	0.29	0.58	0.66	65.51	1.91	76.32	92.84
0.58	0.40	0.67	1.05	76.32	1.75	88.91	94.58
0.67	0.52	0.78	1.58	88.91	1.59	103.58	96.17
0.78	0.62	0.91	2.20	103.58	1.38	120.67	97.55
0.91	0.71	1.06	2.91	120.67	1.11	140.58	98.66
1.06	0.78	1.24	3.69	140.58	0.78	163.77	99.44
1.24	0.81	1.44	4.50	163.77	0.45	190.80	99.89
1.44	0.81	1.68	5.31	190.80	0.11	222.28	100.00
1.68	0.79	1.95	6.10	222.28	0.00	258.95	100.00
1.95	0.81	2.28	6.91	258.95	0.00	301.68	100.00
2.28	0.89	2.65	7.80	301.68	0.00	351.46	100.00
2.65	1.07	3.09	8.88	351.46	0.00	409.45	100.00
3.09	1.37	3.60	10.25	409.45	0.00	477.01	100.00
3.60	1.79	4.19	12.04	477.01	0.00	555.71	100.00
4.19	2.33	4.88	14.37	555.71	0.00	647.41	100.00
4.88	2.94	5.69	17.32	647.41	0.00	754.23	100.00
5.69	3.59	6.63	20.90	754.23	0.00	878.67	100.00





## Result: Analysis Report

## Sample Details

Sample ID: 1.5 P50 750/12

Run Number: 2

Measurement Date: Wed, Aug 01, 2000

Sample File: PARI

Record Number: 8

Analysis Date: Wed, Aug 01, 2000

Sample Path: A:1

Result Source: Analysed

Sample Notes: Test by Pranee : Scientific and Tecnological Research

Equipment Center Chulalongkorn University

Liquid medium : water

## System Details

Range Lens: 300RF mm

Beam Length: 2.40 mm

Sampler: MS17

Obscuration: 8.7 %

Presentation: 30HD

[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]

Residual: 4.690 %

Analysis Model: Polydisperse

Modifications: Active -

Killed Data Channels: Low 0; High 2

## Result Statistics

Distribution Type: Volume

Concentration = 0.0089 %Vol

Density = 1.000 g / cub. cm

Specific S.A. = 0.8074 sq. m / g

Mean Diameters:

D (v, 0.1) = 4.90 um

D (v, 0.5) = 9.77 um

D (v, 0.9) = 16.89 um

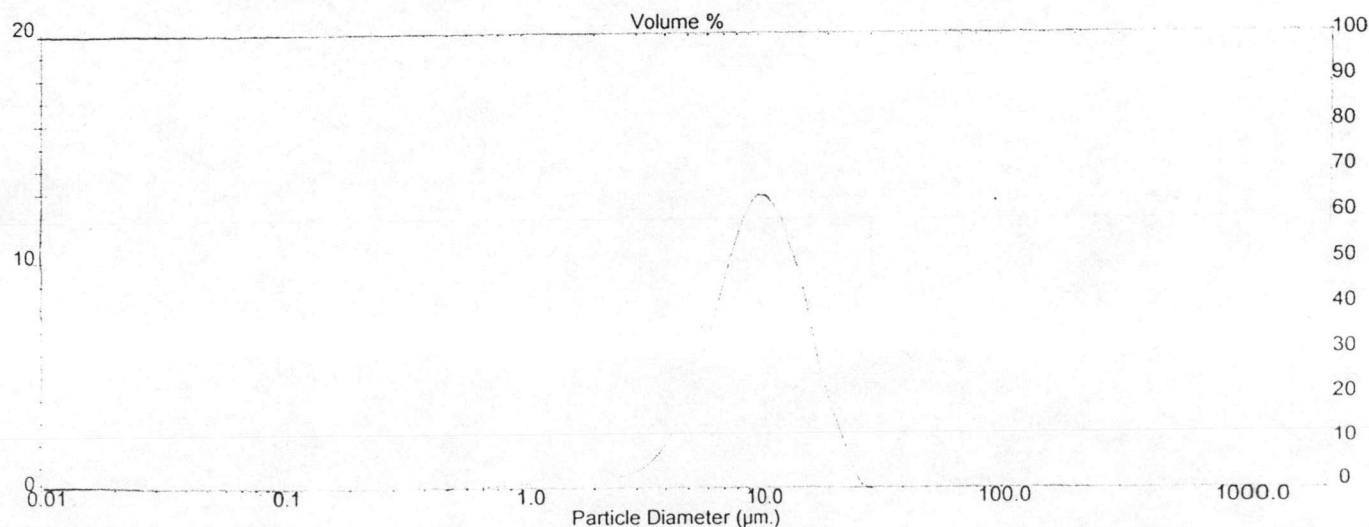
D [4, 3] = 10.39 um

D [3, 2] = 7.43 um

Span = 1.227E+00

Uniformity = 3.816E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	9.56	7.72	31.40
0.06	0.00	0.07	0.00	7.72	11.71	9.00	43.11
0.07	0.00	0.08	0.00	9.00	12.88	10.48	55.99
0.08	0.00	0.09	0.00	10.48	12.69	12.21	68.68
0.09	0.00	0.11	0.00	12.21	11.26	14.22	79.94
0.11	0.00	0.13	0.00	14.22	9.16	16.57	89.10
0.13	0.00	0.15	0.00	16.57	5.96	19.31	95.06
0.15	0.00	0.17	0.00	19.31	3.45	22.49	98.51
0.17	0.00	0.20	0.00	22.49	1.41	26.20	99.92
0.20	0.00	0.23	0.00	26.20	0.08	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.00	0.49	0.00	56.23	0.00	65.51	100.00
0.49	0.10	0.58	0.10	65.51	0.00	76.32	100.00
0.58	0.11	0.67	0.21	76.32	0.00	88.91	100.00
0.67	0.14	0.78	0.35	88.91	0.00	103.58	100.00
0.78	0.19	0.91	0.53	103.58	0.00	120.67	100.00
0.91	0.24	1.06	0.78	120.67	0.00	140.58	100.00
1.06	0.30	1.24	1.08	140.58	0.00	163.77	100.00
1.24	0.35	1.44	1.43	163.77	0.00	190.80	100.00
1.44	0.39	1.68	1.82	190.80	0.00	222.28	100.00
1.68	0.41	1.95	2.24	222.28	0.00	258.95	100.00
1.95	0.45	2.28	2.69	258.95	0.00	301.68	100.00
2.28	0.52	2.65	3.21	301.68	0.00	351.46	100.00
2.65	0.71	3.09	3.92	351.46	0.00	409.45	100.00
3.09	1.10	3.60	5.03	409.45	0.00	477.01	100.00
3.60	1.84	4.19	6.87	477.01	0.00	555.71	100.00
4.19	3.05	4.88	9.92	555.71	0.00	647.41	100.00
4.88	4.82	5.69	14.74	647.41	0.00	754.23	100.00
5.69	7.09	6.63	21.84	754.23	0.00	878.67	100.00



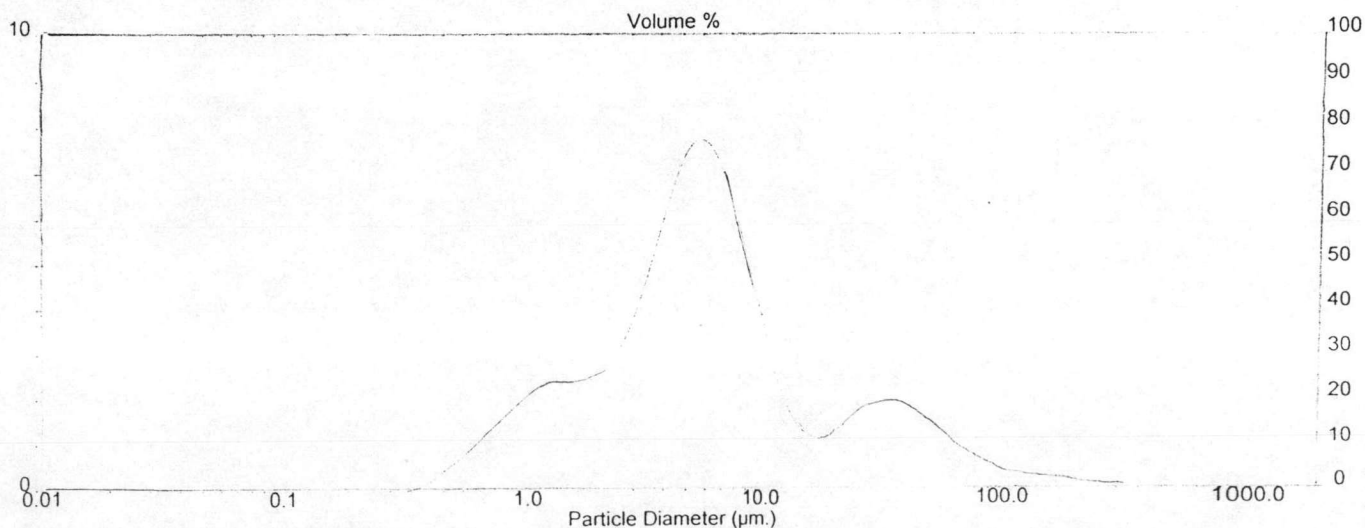
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 P50 750115	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 35	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.593 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0128 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.7367 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.36 um	D (v, 0.5) = 5.80 um	D (v, 0.9) = 37.99 um
D [4, 3] = 15.61 um	D [3, 2] = 3.45 um	Span = 6.311E+00	Uniformity = 2.158E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	7.12	7.72	63.78
0.06	0.00	0.07	0.00	7.72	6.07	9.00	69.85
0.07	0.00	0.08	0.00	9.00	4.75	10.48	74.60
0.08	0.00	0.09	0.00	10.48	3.41	12.21	78.01
0.09	0.00	0.11	0.00	12.21	2.13	14.22	80.14
0.11	0.00	0.13	0.00	14.22	1.41	16.57	81.55
0.13	0.00	0.15	0.00	16.57	1.15	19.31	82.71
0.15	0.00	0.17	0.00	19.31	1.23	22.49	83.94
0.17	0.00	0.20	0.00	22.49	1.50	26.20	85.44
0.20	0.00	0.23	0.00	26.20	1.77	30.53	87.21
0.23	0.00	0.27	0.00	30.53	1.94	35.56	89.15
0.27	0.00	0.31	0.00	35.56	1.93	41.43	91.09
0.31	0.00	0.36	0.00	41.43	1.77	48.27	92.86
0.36	0.08	0.42	0.08	48.27	1.49	56.23	94.35
0.42	0.28	0.49	0.35	56.23	1.17	65.51	95.52
0.49	0.55	0.58	0.90	65.51	0.87	76.32	96.39
0.58	0.84	0.67	1.74	76.32	0.63	88.91	97.03
0.67	1.22	0.78	2.96	88.91	0.47	103.58	97.50
0.78	1.54	0.91	4.50	103.58	0.38	120.67	97.87
0.91	1.89	1.06	6.39	120.67	0.34	140.58	98.22
1.06	2.19	1.24	8.58	140.58	0.35	163.77	98.56
1.24	2.36	1.44	10.94	163.77	0.36	190.80	98.92
1.44	2.38	1.68	13.32	190.80	0.36	222.28	99.28
1.68	2.38	1.95	15.70	222.28	0.32	258.95	99.61
1.95	2.52	2.28	18.22	258.95	0.24	301.68	99.85
2.28	2.86	2.65	21.08	301.68	0.15	351.46	100.00
2.65	3.52	3.09	24.60	351.46	0.00	409.45	100.00
3.09	4.47	3.60	29.06	409.45	0.00	477.01	100.00
3.60	5.62	4.19	34.69	477.01	0.00	555.71	100.00
4.19	6.75	4.88	41.44	555.71	0.00	647.41	100.00
4.88	7.54	5.69	48.98	647.41	0.00	754.23	100.00
5.69	7.68	6.63	56.66	754.23	0.00	878.67	100.00



### Result: Analysis Report

#### Sample Details

Sample ID: 3P50 75019  
 Sample File: PARI  
 Sample Path: C:\SIZERS\DATA\DATA\AID\  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

Run Number: 8  
 Record Number: 4

Measured: Tue 29 Aug 2000  
 Analysed: Tue 29 Aug 2000  
 Result Source: Analysed

#### System Details

Range Lens: 300RF mm  
 Presentation: 30HD  
 Analysis Model: Polydisperse  
 Modifications: Active -

Beam Length: 2.40 mm  
 [Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2

Sampler: MS1

Obscuration: 12.8 %  
 Residual: 0.648 %

#### Result Statistics

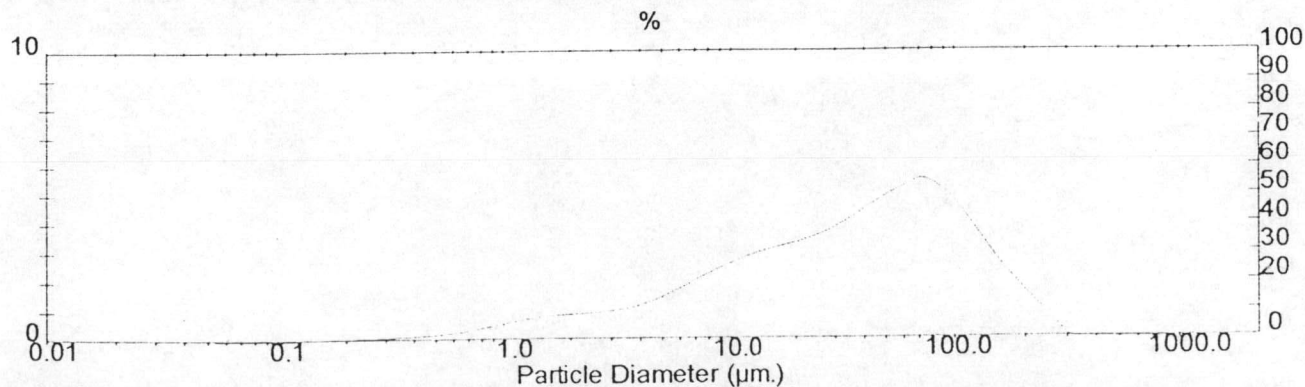
Distribution Type: Volume  
 Mean Diameters:  
 D [4, 3] = 53.12 um

Concentration = 0.0170 %Vol  
 D (v, 0.1) = 3.67 um  
 D [3, 2] = 6.58 um

Density = 0.000 g / cub. cm  
 D (v, 0.5) = 36.26 um  
 Span = 3.401E+00

Specific S.A. = 0.0000 sq. m / g  
 D (v, 0.9) = 126.98 um  
 Uniformity = 1.081E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	2.07	7.72	17.79
0.06	0.01	0.07	0.02	7.72	2.33	9.00	20.13
0.07	0.02	0.08	0.04	9.00	2.57	10.48	22.70
0.08	0.03	0.09	0.06	10.48	2.79	12.21	25.48
0.09	0.03	0.11	0.09	12.21	2.96	14.22	28.44
0.11	0.04	0.13	0.13	14.22	3.10	16.57	31.54
0.13	0.05	0.15	0.18	16.57	3.23	19.31	34.77
0.15	0.06	0.17	0.24	19.31	3.36	22.49	38.13
0.17	0.07	0.20	0.31	22.49	3.53	26.20	41.67
0.20	0.08	0.23	0.40	26.20	3.76	30.53	45.42
0.23	0.10	0.27	0.49	30.53	4.04	35.56	49.46
0.27	0.12	0.31	0.61	35.56	4.36	41.43	53.82
0.31	0.13	0.36	0.74	41.43	4.69	48.27	58.52
0.36	0.15	0.42	0.90	48.27	5.00	56.23	63.52
0.42	0.18	0.49	1.08	56.23	5.27	65.51	68.79
0.49	0.22	0.58	1.30	65.51	5.50	76.32	74.28
0.58	0.28	0.67	1.58	76.32	5.33	88.91	79.62
0.67	0.35	0.78	1.93	88.91	4.90	103.58	84.51
0.78	0.46	0.91	2.39	103.58	4.24	120.67	88.75
0.91	0.56	1.06	2.95	120.67	3.48	140.58	92.23
1.06	0.66	1.24	3.61	140.58	2.75	163.77	94.38
1.24	0.75	1.44	4.36	163.77	2.10	190.80	97.08
1.44	0.82	1.68	5.17	190.80	1.54	222.28	98.62
1.68	0.86	1.95	6.03	222.28	0.97	258.95	99.59
1.95	0.89	2.28	6.93	258.95	0.41	301.68	100.00
2.28	0.92	2.65	7.85	301.68	0.00	351.46	100.00
2.65	0.97	3.09	8.82	351.46	0.00	409.45	100.00
3.09	1.05	3.60	9.87	409.45	0.00	477.01	100.00
3.60	1.17	4.19	11.04	477.01	0.00	555.71	100.00
4.19	1.34	4.88	12.37	555.71	0.00	647.41	100.00
4.88	1.55	5.69	13.93	647.41	0.00	754.23	100.00
5.69	1.80	6.63	15.73	754.23	0.00	878.67	100.00





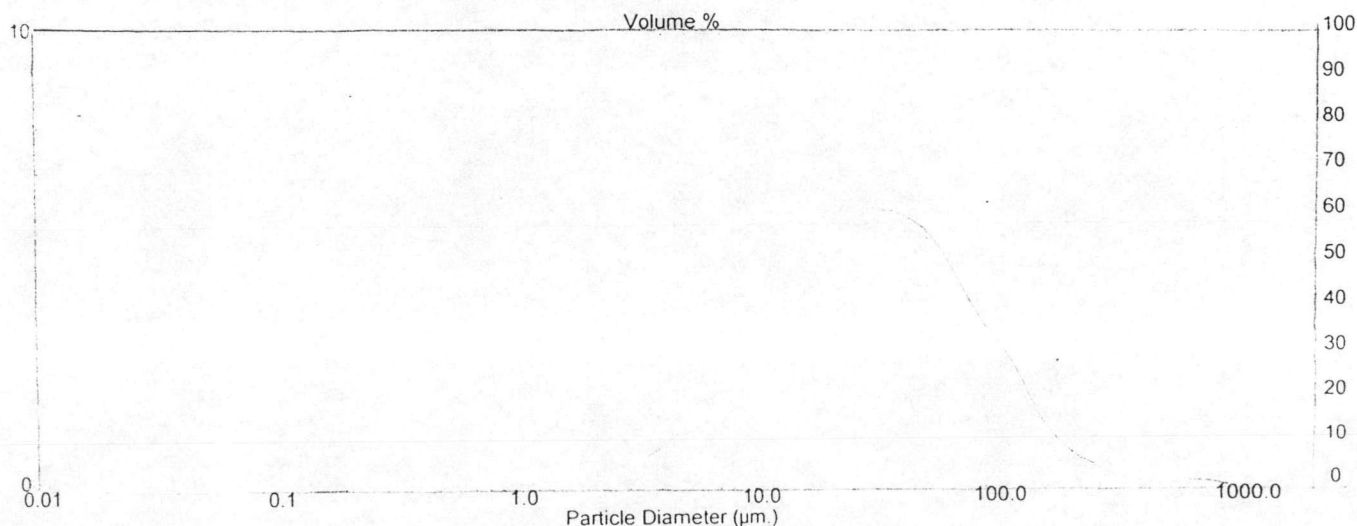
### Result: Analysis Report

Sample Details		
Sample ID: 3P50 750/12	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 9	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 15.0 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.225 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0253 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.6350 sq. m / g
Mean Diameters:	D (v, 0.1) = 6.14 um	D (v, 0.5) = 27.77 um	D (v, 0.9) = 114.18 um
D [4, 3] = 54.12 um	D [3, 2] = 9.45 um	Span = 3.890E+00	Uniformity = 1.472E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.05	0.00	6.53	2.38	7.72	13.39
0.06	0.00	0.07	0.00	7.72	2.90	9.00	16.29
0.07	0.00	0.08	0.01	9.00	3.43	10.48	19.72
0.08	0.00	0.09	0.01	10.48	3.95	12.21	23.66
0.09	0.01	0.11	0.02	12.21	4.41	14.22	28.07
0.11	0.01	0.13	0.02	14.22	4.77	16.57	32.84
0.13	0.01	0.15	0.04	16.57	5.00	19.31	37.84
0.15	0.02	0.17	0.06	19.31	5.11	22.49	42.95
0.17	0.03	0.20	0.08	22.49	5.11	26.20	48.07
0.20	0.04	0.23	0.13	26.20	5.04	30.53	53.11
0.23	0.06	0.27	0.19	30.53	4.93	35.56	58.05
0.27	0.08	0.31	0.28	35.56	4.82	41.43	62.86
0.31	0.10	0.36	0.38	41.43	4.70	48.27	67.57
0.36	0.11	0.42	0.49	48.27	4.60	56.23	72.16
0.42	0.13	0.49	0.62	56.23	4.46	65.51	76.62
0.49	0.17	0.58	0.79	65.51	4.23	76.32	80.85
0.58	0.20	0.67	0.99	76.32	3.88	88.91	84.73
0.67	0.24	0.78	1.23	88.91	3.40	103.58	88.13
0.78	0.28	0.91	1.51	103.58	2.82	120.67	90.95
0.91	0.33	1.06	1.83	120.67	2.18	140.58	93.13
1.06	0.37	1.24	2.20	140.58	1.58	163.77	94.71
1.24	0.40	1.44	2.60	163.77	1.08	190.80	95.80
1.44	0.41	1.68	3.01	190.80	0.73	222.28	96.53
1.68	0.43	1.95	3.44	222.28	0.52	258.95	97.05
1.95	0.45	2.28	3.89	258.95	0.44	301.68	97.49
2.28	0.48	2.65	4.37	301.68	0.44	351.46	97.93
2.65	0.56	3.09	4.93	351.46	0.46	409.45	98.39
3.09	0.68	3.60	5.61	409.45	0.47	477.01	98.86
3.60	0.88	4.19	6.49	477.01	0.44	555.71	99.30
4.19	1.14	4.88	7.63	555.71	0.36	647.41	99.66
4.88	1.48	5.69	9.11	647.41	0.23	754.23	99.89
5.69	1.90	6.63	11.02	754.23	0.11	878.67	100.00



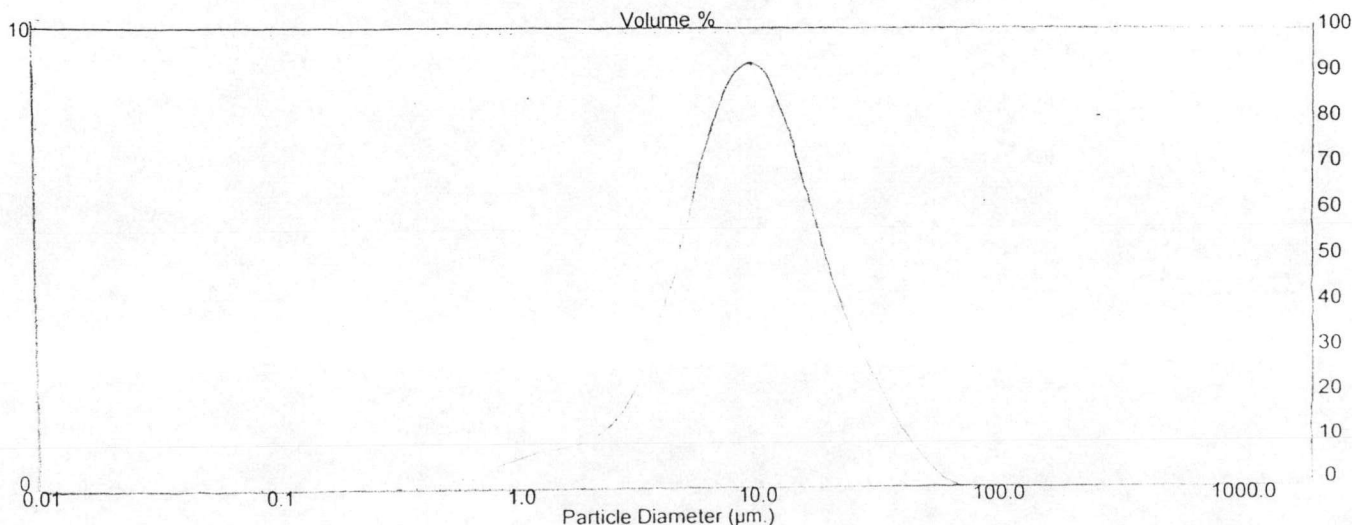
Result: Analysis Report

Sample Details		
Sample ID: 3P50 750115	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 5	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.5 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000):	Dispersant R.I. = 1.3300]	Residual: 4.373 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0205 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0553 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.15 um	D (v, 0.5) = 8.99 um	D (v, 0.9) = 19.18 um
D [4, 3] = 10.27 um	D [3, 2] = 5.69 um	Span = 1.783E+00	Uniformity = 5.487E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	8.27	7.72	40.95
0.06	0.00	0.07	0.00	7.72	9.06	9.00	50.01
0.07	0.00	0.08	0.00	9.00	9.36	10.48	59.37
0.08	0.00	0.09	0.00	10.48	9.14	12.21	68.52
0.09	0.00	0.11	0.00	12.21	8.41	14.22	76.92
0.11	0.00	0.13	0.00	14.22	7.30	16.57	84.22
0.13	0.00	0.15	0.00	16.57	6.00	19.31	90.22
0.15	0.00	0.17	0.00	19.31	4.40	22.49	94.62
0.17	0.00	0.20	0.00	22.49	2.95	26.20	97.57
0.20	0.00	0.23	0.00	26.20	1.70	30.53	99.28
0.23	0.00	0.27	0.00	30.53	0.69	35.56	99.96
0.27	0.00	0.31	0.00	35.56	0.04	41.43	100.00
0.31	0.02	0.36	0.02	41.43	0.00	48.27	100.00
0.36	0.04	0.42	0.07	48.27	0.00	56.23	100.00
0.42	0.09	0.49	0.15	56.23	0.00	65.51	100.00
0.49	0.15	0.58	0.31	65.51	0.00	76.32	100.00
0.58	0.24	0.67	0.55	76.32	0.00	88.91	100.00
0.67	0.37	0.78	0.91	88.91	0.00	103.58	100.00
0.78	0.50	0.91	1.42	103.58	0.00	120.67	100.00
0.91	0.64	1.06	2.06	120.67	0.00	140.58	100.00
1.06	0.77	1.24	2.83	140.58	0.00	163.77	100.00
1.24	0.87	1.44	3.71	163.77	0.00	190.80	100.00
1.44	0.93	1.68	4.64	190.80	0.00	222.28	100.00
1.68	0.99	1.95	5.63	222.28	0.00	258.95	100.00
1.95	1.10	2.28	6.73	258.95	0.00	301.68	100.00
2.28	1.31	2.65	8.04	301.68	0.00	351.46	100.00
2.65	1.70	3.09	9.74	351.46	0.00	409.45	100.00
3.09	2.34	3.60	12.08	409.45	0.00	477.01	100.00
3.60	3.25	4.19	15.33	477.01	0.00	555.71	100.00
4.19	4.43	4.88	19.77	555.71	0.00	647.41	100.00
4.88	5.78	5.69	25.55	647.41	0.00	754.23	100.00
5.69	7.13	6.63	32.68	754.23	0.00	878.67	100.00



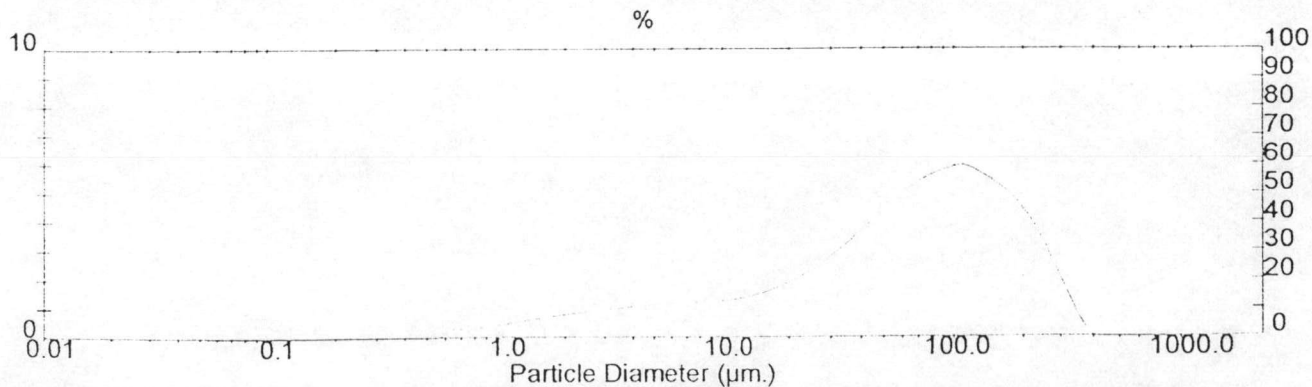
### Result: Analysis Report

Sample Details		
Sample ID: 5P50 75019	Run Number: 1	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 4	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water		
Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 13.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.102 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0237 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.89 um	D (v, 0.5) = 66.89 um	D (v, 0.9) = 204.22 um
D [4, 3] = 87.66 um	D [3, 2] = 12.49 um	Span = 2.980E+00	Uniformity = 9.116E-01

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	1.23	7.72	13.62
0.06	0.00	0.07	0.00	7.72	1.25	9.00	14.87
0.07	0.00	0.08	0.00	9.00	1.28	10.48	16.15
0.08	0.00	0.09	0.00	10.48	1.33	12.21	17.49
0.09	0.00	0.11	0.00	12.21	1.42	14.22	18.90
0.11	0.00	0.13	0.00	14.22	1.55	16.57	20.45
0.13	0.00	0.15	0.00	16.57	1.74	19.31	22.19
0.15	0.00	0.17	0.00	19.31	1.98	22.49	24.18
0.17	0.00	0.20	0.00	22.49	2.29	26.20	26.47
0.20	0.00	0.23	0.00	26.20	2.66	30.53	29.13
0.23	0.00	0.27	0.00	30.53	3.08	35.56	32.20
0.27	0.00	0.31	0.00	35.56	3.54	41.43	35.75
0.31	0.00	0.36	0.00	41.43	4.03	48.27	39.78
0.36	0.00	0.42	0.00	48.27	4.52	56.23	44.31
0.42	0.00	0.49	0.00	56.23	4.98	65.51	49.28
0.49	0.00	0.58	0.00	65.51	5.37	76.32	54.65
0.58	0.30	0.67	0.30	76.32	5.66	88.91	60.31
0.67	0.32	0.78	0.62	88.91	5.84	103.58	66.15
0.78	0.38	0.91	1.00	103.58	5.93	120.67	72.08
0.91	0.45	1.06	1.45	120.67	5.68	140.58	77.75
1.06	0.53	1.24	1.97	140.58	5.34	163.77	83.10
1.24	0.62	1.44	2.59	163.77	4.91	190.80	88.00
1.44	0.70	1.68	3.30	190.80	4.29	222.28	92.30
1.68	0.77	1.95	4.07	222.28	3.49	258.95	95.79
1.95	0.84	2.28	4.91	258.95	2.51	301.68	98.29
2.28	0.90	2.65	5.81	301.68	1.40	351.46	99.70
2.65	0.96	3.09	6.76	351.46	0.30	409.45	100.00
3.09	1.02	3.60	7.78	409.45	0.00	477.01	100.00
3.60	1.08	4.19	8.86	477.01	0.00	555.71	100.00
4.19	1.13	4.88	9.99	555.71	0.00	647.41	100.00
4.88	1.18	5.69	11.17	647.41	0.00	754.23	100.00
5.69	1.21	6.63	12.38	754.23	0.00	878.67	100.00





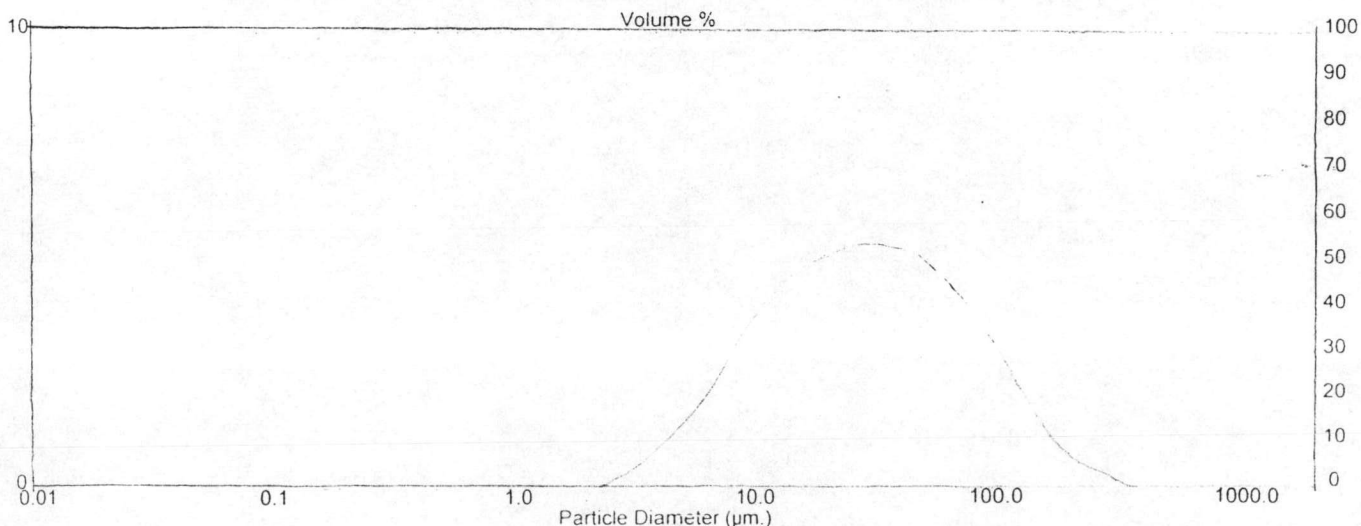
### Result: Analysis Report

Sample Details		
Sample ID: 5 P50 750/12	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details		
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]	Obscuration: 14.9 %
Analysis Model: Polydisperse		Residual: 0.193 %
Modifications: Active --	Killed Data Channels: Low 0; High 2	

Result Statistics			
Distribution Type: Volume	Concentration = 0.0248 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.6232 sq. m / g
Mean Diameters:	D (v, 0.1) = 6.13 um	D (v, 0.5) = 27.44 um	D (v, 0.9) = 105.74 um
D [4, 3] = 47.39 um	D [3, 2] = 9.63 um	Span = 3.631E+00	Uniformity = 1.249E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.53	2.39	7.72	13.42
0.06	0.00	0.07	0.00	7.72	2.92	9.00	16.34
0.07	0.00	0.08	0.00	9.00	3.46	10.48	19.80
0.08	0.00	0.09	0.01	10.48	3.99	12.21	23.78
0.09	0.00	0.11	0.01	12.21	4.45	14.22	28.24
0.11	0.01	0.13	0.01	14.22	4.82	16.57	33.05
0.13	0.01	0.15	0.02	16.57	5.06	19.31	38.11
0.15	0.01	0.17	0.04	19.31	5.17	22.49	43.28
0.17	0.02	0.20	0.06	22.49	5.17	26.20	48.45
0.20	0.04	0.23	0.10	26.20	5.12	30.53	53.57
0.23	0.06	0.27	0.15	30.53	5.03	35.56	58.59
0.27	0.08	0.31	0.23	35.56	4.94	41.43	63.53
0.31	0.10	0.36	0.33	41.43	4.86	48.27	68.39
0.36	0.11	0.42	0.44	48.27	4.78	56.23	73.17
0.42	0.13	0.49	0.57	56.23	4.64	65.51	77.81
0.49	0.17	0.58	0.74	65.51	4.37	76.32	82.18
0.58	0.20	0.67	0.94	76.32	3.97	88.91	86.15
0.67	0.24	0.78	1.19	88.91	3.43	103.58	89.58
0.78	0.29	0.91	1.48	103.58	2.80	120.67	92.38
0.91	0.33	1.06	1.81	120.67	2.13	140.58	94.51
1.06	0.37	1.24	2.18	140.58	1.53	163.77	96.04
1.24	0.40	1.44	2.58	163.77	1.05	190.80	97.09
1.44	0.42	1.68	3.01	190.80	0.72	222.28	97.81
1.68	0.43	1.95	3.44	222.28	0.53	258.95	98.34
1.95	0.45	2.28	3.89	258.95	0.43	301.68	98.77
2.28	0.49	2.65	4.38	301.68	0.38	351.46	99.15
2.65	0.56	3.09	4.94	351.46	0.33	409.45	99.47
3.09	0.68	3.60	5.63	409.45	0.25	477.01	99.73
3.60	0.87	4.19	6.50	477.01	0.17	555.71	99.90
4.19	1.14	4.88	7.64	555.71	0.09	647.41	99.99
4.88	1.49	5.69	9.12	647.41	0.01	754.23	100.00
5.69	1.91	6.63	11.03	754.23	0.00	878.67	100.00



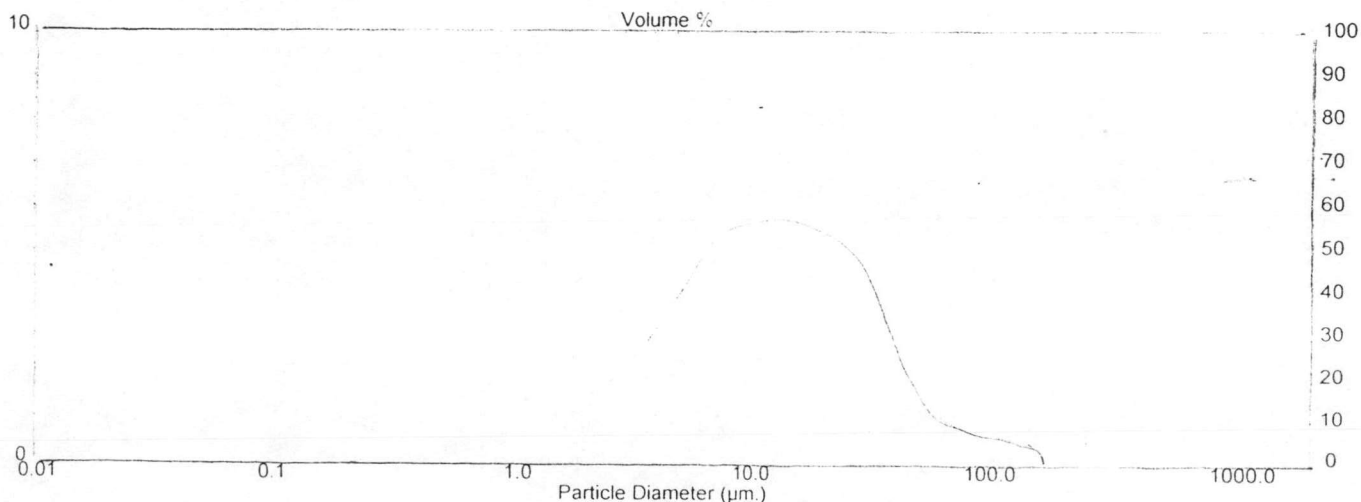
Result: Analysis Report

Sample Details		
Sample ID: 5 P 50 750115	Run Number: 11	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 25.5 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.309 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --	Killed Result Channels: < 0.05 um; > 163.77 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0204 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 2.1027 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.35 um	D (v, 0.5) = 10.52 um	D (v, 0.9) = 37.44 um
D [4, 3] = 16.74 um	D [3, 2] = 2.85 um	Span = 3.429E+00	Uniformity = 1.162E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.01	0.06	0.01	6.63	4.48	7.72	40.59
0.06	0.03	0.07	0.04	7.72	4.61	9.00	45.20
0.07	0.04	0.08	0.08	9.00	4.66	10.48	49.88
0.08	0.06	0.09	0.14	10.48	4.75	12.21	54.62
0.09	0.08	0.11	0.22	12.21	4.84	14.22	59.46
0.11	0.10	0.13	0.33	14.22	4.95	16.57	64.41
0.13	0.13	0.15	0.46	16.57	5.05	19.31	69.46
0.15	0.17	0.17	0.63	19.31	5.08	22.49	74.54
0.17	0.22	0.20	0.85	22.49	5.03	26.20	79.57
0.20	0.28	0.23	1.13	26.20	4.90	30.53	84.47
0.23	0.35	0.27	1.49	30.53	4.27	35.56	88.74
0.27	0.42	0.31	1.91	35.56	3.45	41.43	92.20
0.31	0.47	0.36	2.38	41.43	2.58	48.27	94.77
0.36	0.52	0.42	2.90	48.27	1.76	56.23	96.53
0.42	0.59	0.49	3.49	56.23	1.09	65.51	97.62
0.49	0.68	0.58	4.17	65.51	0.62	76.32	98.24
0.58	0.77	0.67	4.94	76.32	0.36	88.91	98.60
0.67	0.89	0.78	5.83	88.91	0.26	103.58	98.85
0.78	1.01	0.91	6.85	103.58	0.27	120.67	99.13
0.91	1.13	1.06	7.98	120.67	0.37	140.58	99.50
1.06	1.24	1.24	9.21	140.58	0.50	163.77	100.00
1.24	1.32	1.44	10.54	163.77	0.00	190.80	100.00
1.44	1.40	1.68	11.94	190.80	0.00	222.28	100.00
1.68	1.48	1.95	13.42	222.28	0.00	258.95	100.00
1.95	1.62	2.28	15.04	258.95	0.00	301.68	100.00
2.28	1.82	2.65	16.86	301.68	0.00	351.46	100.00
2.65	2.13	3.09	18.99	351.46	0.00	409.45	100.00
3.09	2.52	3.60	21.51	409.45	0.00	477.01	100.00
3.60	2.99	4.19	24.50	477.01	0.00	555.71	100.00
4.19	3.47	4.88	27.96	555.71	0.00	647.41	100.00
4.88	3.90	5.69	31.87	647.41	0.00	754.23	100.00
5.69	4.25	6.63	36.12	754.23	0.00	878.67	100.00



**APPENDIX VI**

**Particle size and size distribution curve  
of chitosan microparticles**



## Result: Analysis Report

### Sample Details

Sample ID: LMWCS 250 / 1 A  
 Sample File: PARI  
 Sample Path: C:\SIZERS\DATA\DATA\AID\  
 Sample Notes: Dispersing medium : DI water  
 Treatment : stir

Run Number: 7  
 Record Number: 9

Measured: Tue 29 Aug 2000  
 Analysed: Tue 29 Aug 2000  
 Result Source: Analysed

### System Details

Range Lens: 300RF mm  
 Presentation: 30HD  
 Analysis Model: Polydisperse  
 Modifications: Active -

Beam Length: 2.40 mm  
 [Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]  
 Killed Data Channels: Low 0; High 2

Sampler: MS1

Obscuration: 15.3 %

Residual: 2.749 %

### Result Statistics

Distribution Type: Volume

Concentration = 0.0083 %Vol

Density = 0.000 g / cub. cm

Specific S.A. = 0.0000 sq. m / g

Mean Diameters:

D (v, 0.1) = 1.36 um

D (v, 0.5) = 6.73 um

D (v, 0.9) = 31.14 um

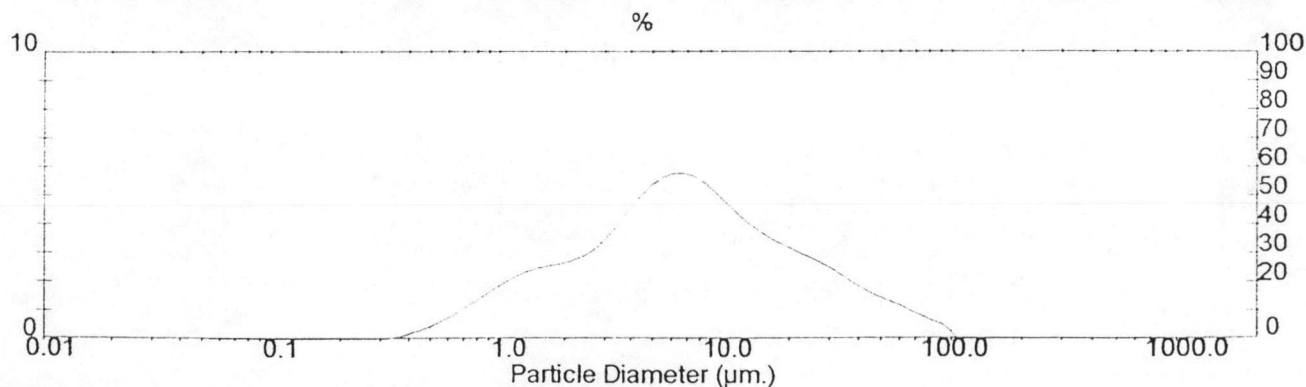
D [4, 3] = 12.40 um

D [3, 2] = 3.54 um

Span = 4.421E+00

Uniformity = 1.359E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.70	7.72	55.11
0.06	0.00	0.07	0.00	7.72	5.43	9.00	60.54
0.07	0.00	0.08	0.00	9.00	5.00	10.48	65.54
0.08	0.00	0.09	0.00	10.48	4.51	12.21	70.05
0.09	0.00	0.11	0.00	12.21	4.06	14.22	74.11
0.11	0.00	0.13	0.00	14.22	3.67	16.57	77.78
0.13	0.00	0.15	0.00	16.57	3.36	19.31	81.13
0.15	0.00	0.17	0.00	19.31	3.10	22.49	84.23
0.17	0.00	0.20	0.00	22.49	2.85	26.20	87.08
0.20	0.00	0.23	0.00	26.20	2.60	30.53	89.68
0.23	0.00	0.27	0.00	30.53	2.28	35.56	91.96
0.27	0.00	0.31	0.00	35.56	1.93	41.43	93.90
0.31	0.06	0.36	0.06	41.43	1.62	48.27	95.52
0.36	0.19	0.42	0.25	48.27	1.38	56.23	96.90
0.42	0.35	0.49	0.60	56.23	1.16	65.51	98.06
0.49	0.56	0.58	1.16	65.51	0.90	76.32	98.96
0.58	0.82	0.67	1.98	76.32	0.65	88.91	99.61
0.67	1.15	0.78	3.13	88.91	0.39	103.58	100.00
0.78	1.48	0.91	4.61	103.58	0.00	120.67	100.00
0.91	1.81	1.06	6.41	120.67	0.00	140.58	100.00
1.06	2.10	1.24	8.51	140.58	0.00	163.77	100.00
1.24	2.33	1.44	10.84	163.77	0.00	190.80	100.00
1.44	2.48	1.68	13.32	190.80	0.00	222.28	100.00
1.68	2.58	1.95	15.90	222.28	0.00	258.95	100.00
1.95	2.71	2.28	18.62	258.95	0.00	301.68	100.00
2.28	2.93	2.65	21.55	301.68	0.00	351.46	100.00
2.65	3.31	3.09	24.86	351.46	0.00	409.45	100.00
3.09	3.83	3.60	28.69	409.45	0.00	477.01	100.00
3.60	4.44	4.19	33.12	477.01	0.00	555.71	100.00
4.19	5.04	4.88	38.16	555.71	0.00	647.41	100.00
4.88	5.51	5.69	43.66	647.41	0.00	754.23	100.00
5.69	5.74	6.63	49.40	754.23	0.00	878.67	100.00



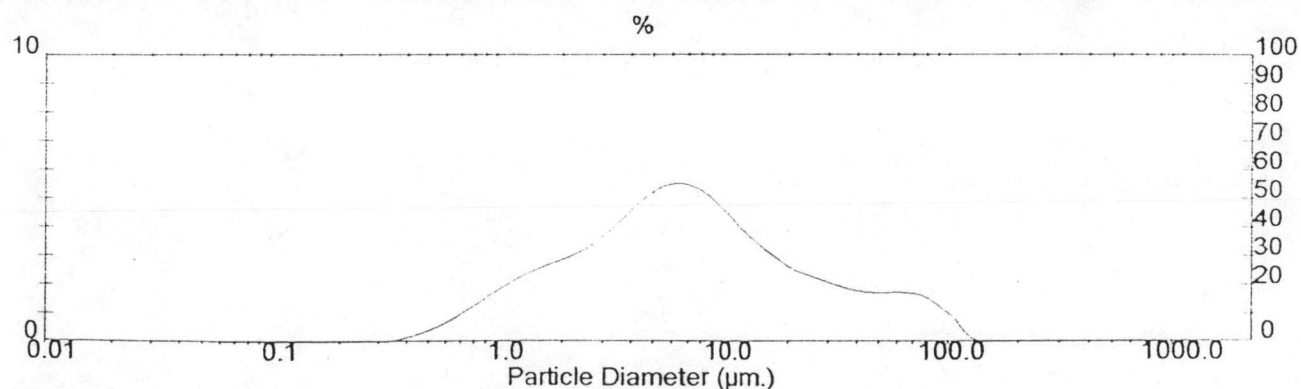
## Result: Analysis Report

Sample Details		
Sample ID: LMWC5 500 / 1A	Run Number: 5	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 5	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 17.0 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.321 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0094 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.41 um	D (v, 0.5) = 6.72 um	D (v, 0.9) = 41.94 um
D [4, 3] = 14.90 um	D [3, 2] = 3.62 um	Span = 6.034E+00	Uniformity = 1.738E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.44	7.72	54.96
0.06	0.00	0.07	0.00	7.72	5.17	9.00	60.13
0.07	0.00	0.08	0.00	9.00	4.75	10.48	64.88
0.08	0.00	0.09	0.00	10.48	4.25	12.21	69.13
0.09	0.00	0.11	0.00	12.21	3.75	14.22	72.88
0.11	0.00	0.13	0.00	14.22	3.29	16.57	76.17
0.13	0.00	0.15	0.00	16.57	2.90	19.31	79.06
0.15	0.00	0.17	0.00	19.31	2.54	22.49	81.61
0.17	0.00	0.20	0.00	22.49	2.33	26.20	83.94
0.20	0.00	0.23	0.00	26.20	2.14	30.53	86.08
0.23	0.00	0.27	0.00	30.53	1.96	35.56	88.04
0.27	0.00	0.31	0.00	35.56	1.82	41.43	89.86
0.31	0.05	0.36	0.05	41.43	1.73	48.27	91.59
0.36	0.16	0.42	0.22	48.27	1.71	56.23	93.29
0.42	0.31	0.49	0.53	56.23	1.72	65.51	95.01
0.49	0.51	0.58	1.03	65.51	1.68	76.32	96.69
0.58	0.74	0.67	1.78	76.32	1.49	88.91	98.18
0.67	1.04	0.78	2.82	88.91	1.10	103.58	99.28
0.78	1.38	0.91	4.20	103.58	0.61	120.67	99.89
0.91	1.72	1.06	5.92	120.67	0.11	140.58	100.00
1.06	2.04	1.24	7.96	140.58	0.00	163.77	100.00
1.24	2.32	1.44	10.28	163.77	0.00	190.80	100.00
1.44	2.54	1.68	12.83	190.80	0.00	222.28	100.00
1.68	2.74	1.95	15.57	222.28	0.00	258.95	100.00
1.95	2.94	2.28	18.51	258.95	0.00	301.68	100.00
2.28	3.18	2.65	21.69	301.68	0.00	351.46	100.00
2.65	3.54	3.09	25.23	351.46	0.00	409.45	100.00
3.09	3.99	3.60	29.22	409.45	0.00	477.01	100.00
3.60	4.49	4.19	33.71	477.01	0.00	555.71	100.00
4.19	4.97	4.88	38.68	555.71	0.00	647.41	100.00
4.88	5.34	5.69	44.02	647.41	0.00	754.23	100.00
5.69	5.50	6.63	49.52	754.23	0.00	878.67	100.00



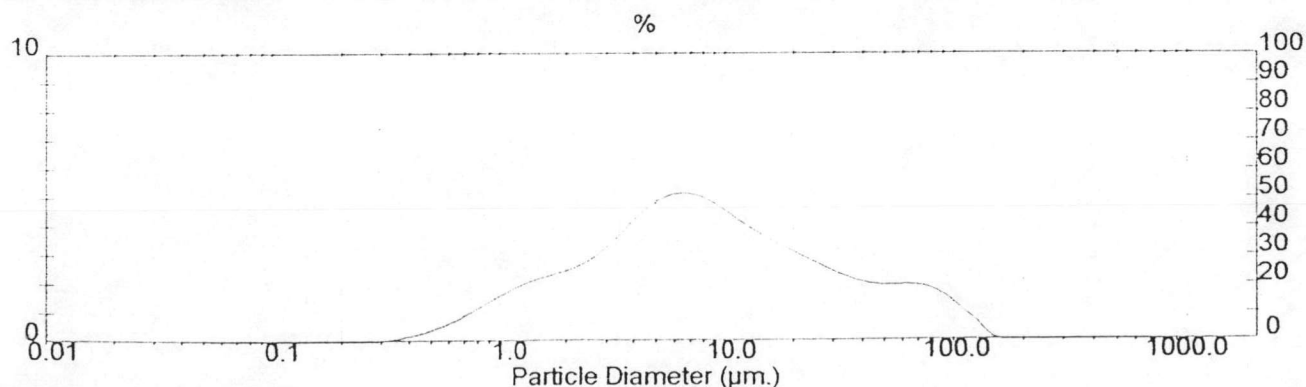
## Result: Analysis Report

Sample Details		
Sample ID: LMWCS 750 / 1A	Run Number: 9	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 63	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\A\DATA\A\I\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 14.1 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.525 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0084 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.50 um	D (v, 0.5) = 7.74 um	D (v, 0.9) = 51.24 um
D [4, 3] = 17.73 um	D [3, 2] = 3.88 um	Span = 6.431E+00	Uniformity = 1.824E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.11	7.72	49.94
0.06	0.00	0.07	0.00	7.72	4.92	9.00	54.86
0.07	0.00	0.08	0.00	9.00	4.62	10.48	59.48
0.08	0.00	0.09	0.00	10.48	4.27	12.21	63.76
0.09	0.00	0.11	0.00	12.21	3.92	14.22	67.67
0.11	0.00	0.13	0.00	14.22	3.59	16.57	71.26
0.13	0.00	0.15	0.00	16.57	3.29	19.31	74.56
0.15	0.00	0.17	0.00	19.31	3.02	22.49	77.58
0.17	0.00	0.20	0.00	22.49	2.77	26.20	80.35
0.20	0.00	0.23	0.00	26.20	2.52	30.53	82.87
0.23	0.00	0.27	0.00	30.53	2.29	35.56	85.16
0.27	0.04	0.31	0.04	35.56	2.10	41.43	87.26
0.31	0.11	0.36	0.15	41.43	1.98	48.27	89.24
0.36	0.20	0.42	0.34	48.27	1.95	56.23	91.18
0.42	0.32	0.49	0.66	56.23	1.96	65.51	93.14
0.49	0.49	0.58	1.15	65.51	1.93	76.32	95.07
0.58	0.70	0.67	1.85	76.32	1.78	88.91	96.86
0.67	0.96	0.78	2.81	88.91	1.46	103.58	98.32
0.78	1.26	0.91	4.07	103.58	1.01	120.67	99.33
0.91	1.55	1.06	5.61	120.67	0.56	140.58	99.89
1.06	1.81	1.24	7.42	140.58	0.11	163.77	100.00
1.24	2.04	1.44	9.46	163.77	0.00	190.80	100.00
1.44	2.21	1.68	11.67	190.80	0.00	222.28	100.00
1.68	2.35	1.95	14.02	222.28	0.00	258.95	100.00
1.95	2.52	2.28	16.54	258.95	0.00	301.68	100.00
2.28	2.78	2.65	19.32	301.68	0.00	351.46	100.00
2.65	3.14	3.09	22.46	351.46	0.00	409.45	100.00
3.09	3.60	3.60	26.05	409.45	0.00	477.01	100.00
3.60	4.11	4.19	30.17	477.01	0.00	555.71	100.00
4.19	4.59	4.88	34.76	555.71	0.00	647.41	100.00
4.88	4.95	5.69	39.71	647.41	0.00	754.23	100.00
5.69	5.13	6.63	44.84	754.23	0.00	878.67	100.00





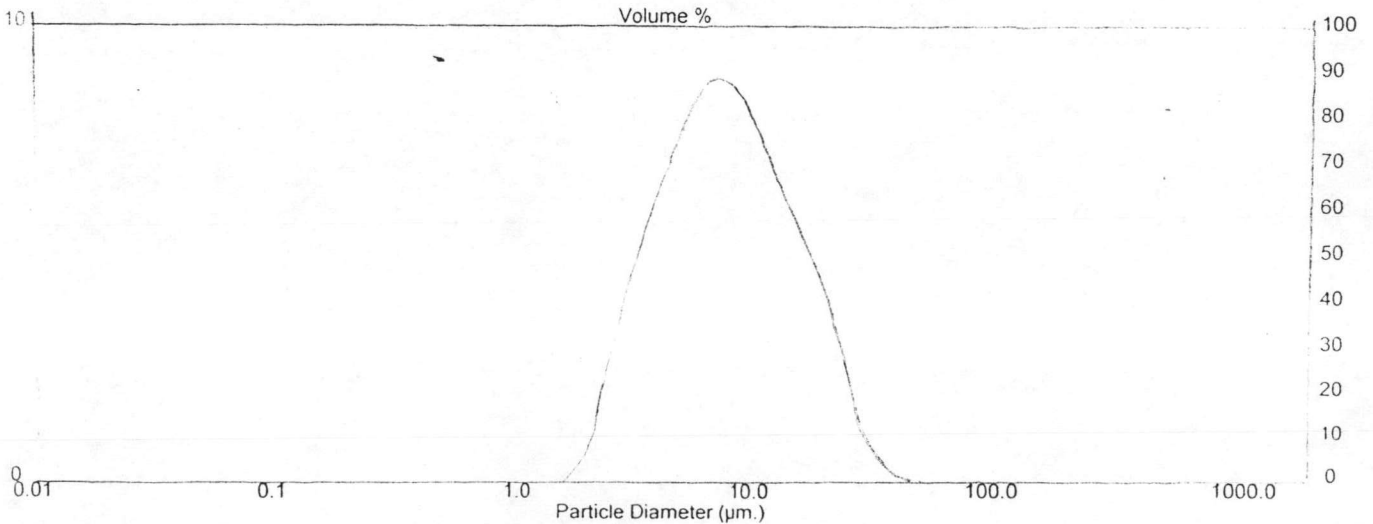
Result: Analysis Report

Sample Details		
Sample ID: LMW C5 250 / 18	Run Number: 5 -	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 72	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 8.8 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 5.725 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0088 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8063 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.90 um	D (v, 0.5) = 8.83 um	D (v, 0.9) = 22.39 um
D [4, 3] = 11.22 um	D [3, 2] = 7.44 um	Span = 2.094E+00	Uniformity = 6.321E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	8.76	7.72	42.18
0.06	0.00	0.07	0.00	7.72	8.87	9.00	51.05
0.07	0.00	0.08	0.00	9.00	8.40	10.48	59.45
0.08	0.00	0.09	0.00	10.48	7.76	12.21	67.21
0.09	0.00	0.11	0.00	12.21	6.95	14.22	74.16
0.11	0.00	0.13	0.00	14.22	6.13	16.57	80.29
0.13	0.00	0.15	0.00	16.57	5.32	19.31	85.61
0.15	0.00	0.17	0.00	19.31	4.51	22.49	90.12
0.17	0.00	0.20	0.00	22.49	3.69	26.20	93.81
0.20	0.00	0.23	0.00	26.20	2.88	30.53	96.69
0.23	0.00	0.27	0.00	30.53	2.06	35.56	98.75
0.27	0.00	0.31	0.00	35.56	1.25	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.00	0.49	0.00	56.23	0.00	65.51	100.00
0.49	0.00	0.58	0.00	65.51	0.00	76.32	100.00
0.58	0.00	0.67	0.00	76.32	0.00	88.91	100.00
0.67	0.00	0.78	0.00	88.91	0.00	103.58	100.00
0.78	0.00	0.91	0.00	103.58	0.00	120.67	100.00
0.91	0.00	1.06	0.00	120.67	0.00	140.58	100.00
1.06	0.00	1.24	0.00	140.58	0.00	163.77	100.00
1.24	0.00	1.44	0.00	163.77	0.00	190.80	100.00
1.44	0.00	1.68	0.00	190.80	0.00	222.28	100.00
1.68	0.00	1.95	0.00	222.28	0.00	258.95	100.00
1.95	0.00	2.28	0.01	258.95	0.00	301.68	100.00
2.28	2.11	2.65	2.11	301.68	0.00	351.46	100.00
2.65	2.46	3.09	4.56	351.46	0.00	409.45	100.00
3.09	3.28	3.60	7.84	409.45	0.00	477.01	100.00
3.60	4.41	4.19	12.25	477.01	0.00	555.71	100.00
4.19	5.76	4.88	18.01	555.71	0.00	647.41	100.00
4.88	7.18	5.69	25.19	647.41	0.00	754.23	100.00
5.69	8.23	6.63	33.42	754.23	0.00	878.67	100.00



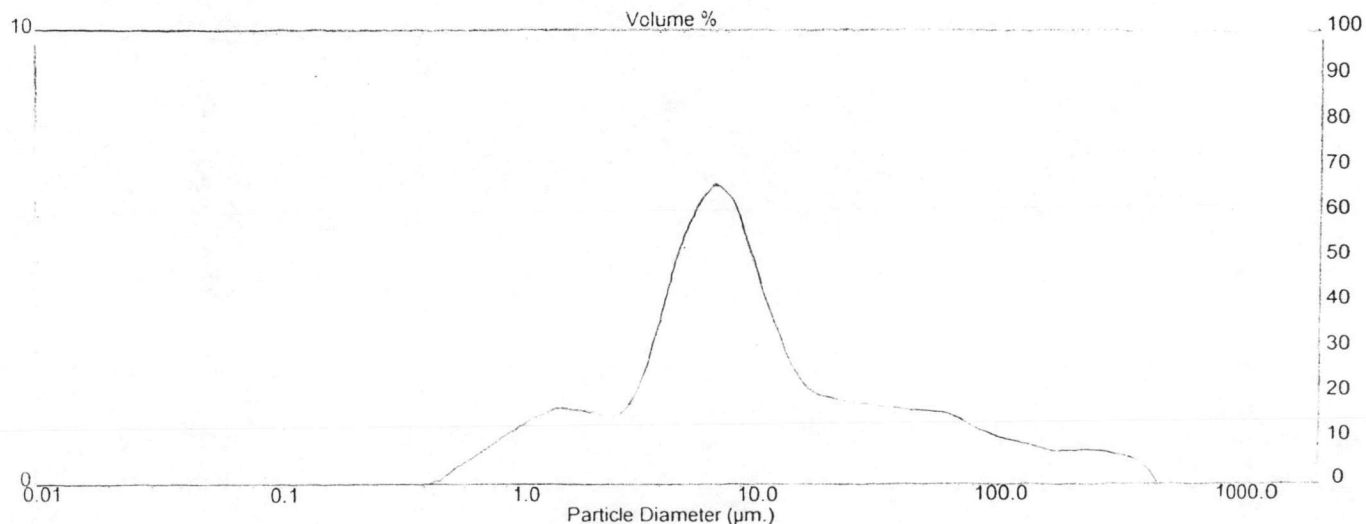
**Result: Analysis Report**

Sample Details		
Sample ID: LMWCS 500 / 16	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 43	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.608 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0130 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2153 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.86 um	D (v, 0.5) = 8.94 um	D (v, 0.9) = 67.03 um
D [4, 3] = 31.36 um	D [3, 2] = 4.94 um	Span = 7.288E+00	Uniformity = 2.988E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.67	7.72	44.00
0.06	0.00	0.07	0.00	7.72	6.24	9.00	50.24
0.07	0.00	0.08	0.00	9.00	5.29	10.48	55.53
0.08	0.00	0.09	0.00	10.48	4.20	12.21	59.73
0.09	0.00	0.11	0.00	12.21	3.22	14.22	62.95
0.11	0.00	0.13	0.00	14.22	2.51	16.57	65.46
0.13	0.00	0.15	0.00	16.57	2.10	19.31	67.56
0.15	0.00	0.17	0.00	19.31	2.00	22.49	69.56
0.17	0.00	0.20	0.00	22.49	2.13	26.20	71.69
0.20	0.00	0.23	0.00	26.20	2.43	30.53	74.12
0.23	0.00	0.27	0.00	30.53	2.99	35.56	77.11
0.27	0.00	0.31	0.00	35.56	3.39	41.43	80.50
0.31	0.00	0.36	0.00	41.43	3.46	48.27	83.96
0.36	0.00	0.42	0.00	48.27	3.17	56.23	87.12
0.42	0.11	0.49	0.11	56.23	2.56	65.51	89.68
0.49	0.30	0.58	0.41	65.51	1.79	76.32	91.47
0.58	0.52	0.67	0.93	76.32	1.06	88.91	92.53
0.67	0.82	0.78	1.75	88.91	0.55	103.58	93.08
0.78	1.08	0.91	2.82	103.58	0.34	120.67	93.42
0.91	1.37	1.06	4.20	120.67	0.42	140.58	93.84
1.06	1.60	1.24	5.79	140.58	0.71	163.77	94.55
1.24	1.65	1.44	7.45	163.77	1.04	190.80	95.59
1.44	1.56	1.68	9.00	190.80	1.23	222.28	96.82
1.68	1.42	1.95	10.42	222.28	1.18	258.95	98.00
1.95	1.36	2.28	11.78	258.95	0.92	301.68	98.92
2.28	1.47	2.65	13.25	301.68	0.67	351.46	99.59
2.65	1.82	3.09	15.07	351.46	0.41	409.45	100.00
3.09	2.44	3.60	17.51	409.45	0.00	477.01	100.00
3.60	3.34	4.19	20.84	477.01	0.00	555.71	100.00
4.19	4.45	4.88	25.29	555.71	0.00	647.41	100.00
4.88	5.60	5.69	30.89	647.41	0.00	754.23	100.00
5.69	6.44	6.63	37.33	754.23	0.00	878.67	100.00



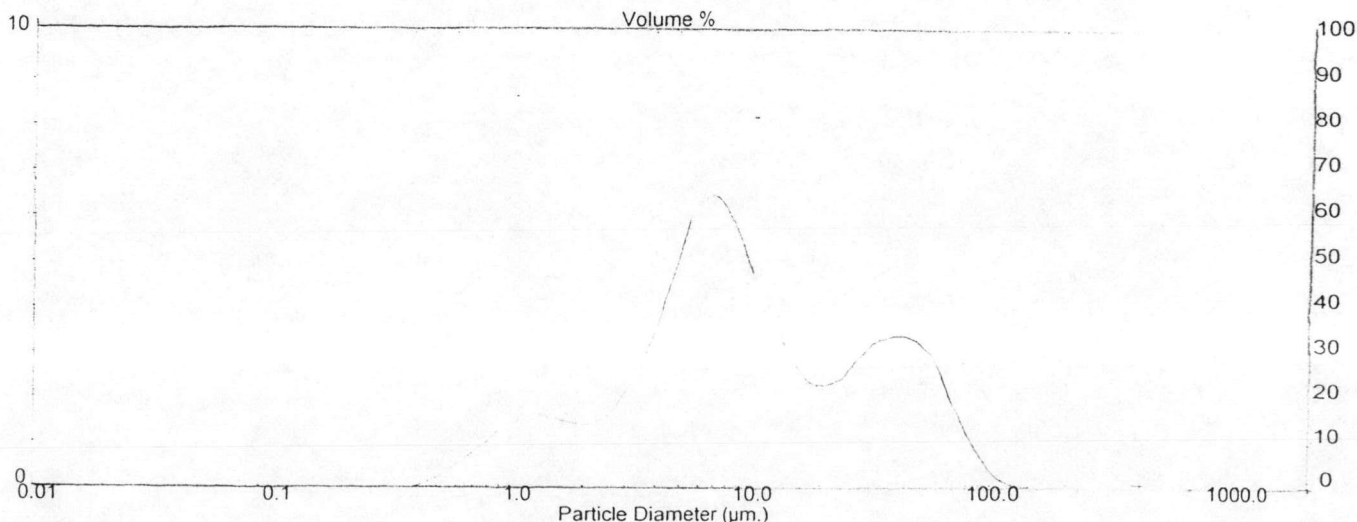
Result: Analysis Report

Sample Details		
Sample ID: LMWCS 750/13	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 45	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.695 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0131 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2101 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.91 um	D (v, 0.5) = 9.10 um	D (v, 0.9) = 65.12 um
D [4, 3] = 32.18 um	D [3, 2] = 4.96 um	Span = 6.944E+00	Uniformity = 3.022E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.41	7.72	43.53
0.06	0.00	0.07	0.00	7.72	6.04	9.00	49.56
0.07	0.00	0.08	0.00	9.00	5.22	10.48	54.78
0.08	0.00	0.09	0.00	10.48	4.24	12.21	59.02
0.09	0.00	0.11	0.00	12.21	3.33	14.22	62.35
0.11	0.00	0.13	0.00	14.22	2.65	16.57	65.00
0.13	0.00	0.15	0.00	16.57	2.27	19.31	67.27
0.15	0.00	0.17	0.00	19.31	2.18	22.49	69.45
0.17	0.00	0.20	0.00	22.49	2.33	26.20	71.78
0.20	0.00	0.23	0.00	26.20	2.63	30.53	74.41
0.23	0.00	0.27	0.00	30.53	3.16	35.56	77.57
0.27	0.00	0.31	0.00	35.56	3.49	41.43	81.07
0.31	0.00	0.36	0.00	41.43	3.49	48.27	84.56
0.36	0.00	0.42	0.00	48.27	3.11	56.23	87.66
0.42	0.12	0.49	0.12	56.23	2.42	65.51	90.08
0.49	0.31	0.58	0.43	65.51	1.59	76.32	91.67
0.58	0.53	0.67	0.96	76.32	0.84	88.91	92.51
0.67	0.83	0.78	1.78	88.91	0.32	103.58	92.83
0.78	1.08	0.91	2.86	103.58	0.14	120.67	92.97
0.91	1.34	1.06	4.20	120.67	0.27	140.58	93.24
1.06	1.53	1.24	5.74	140.58	0.64	163.77	93.88
1.24	1.58	1.44	7.32	163.77	1.06	190.80	94.93
1.44	1.50	1.68	8.82	190.80	1.34	222.28	96.28
1.68	1.41	1.95	10.22	222.28	1.37	258.95	97.65
1.95	1.38	2.28	11.60	258.95	1.16	301.68	98.81
2.28	1.52	2.65	13.13	301.68	0.80	351.46	99.61
2.65	1.90	3.09	15.03	351.46	0.39	409.45	100.00
3.09	2.54	3.60	17.56	409.45	0.00	477.01	100.00
3.60	3.42	4.19	20.98	477.01	0.00	555.71	100.00
4.19	4.45	4.88	25.43	555.71	0.00	647.41	100.00
4.88	5.48	5.69	30.91	647.41	0.00	754.23	100.00
5.69	6.21	6.63	37.12	754.23	0.00	878.67	100.00





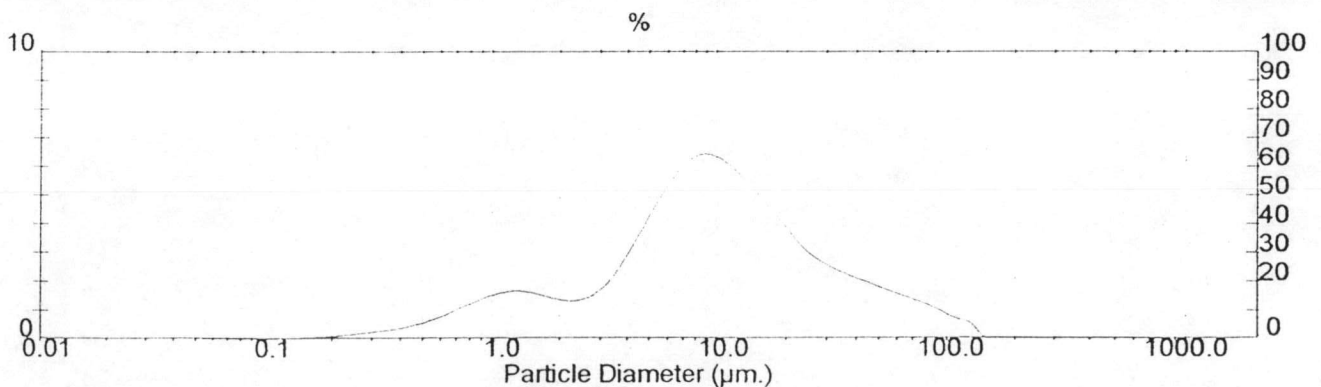
### Result: Analysis Report

Sample Details		
Sample ID: LMWCS 250 / 2 A	Run Number: 3	Measured: Wed 25 Oct 2000
Sample File: PARI	Record Number: 8	Analysed: Wed 25 Oct 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : Water		
Additive : None		
Treatment : Stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 15.2 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	
Analysis Model: Polydisperse			Residual: 1.464 %
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0095 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.36 um	D (v, 0.5) = 9.25 um	D (v, 0.9) = 41.15 um
D [4, 3] = 16.53 um	D [3, 2] = 3.39 um	Span = 4.304E+00	Uniformity = 1.304E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.01	0.06	0.01	6.63	6.08	7.72	42.46
0.06	0.01	0.07	0.02	7.72	6.39	9.00	48.85
0.07	0.02	0.08	0.03	9.00	6.36	10.48	55.22
0.08	0.02	0.09	0.06	10.48	6.06	12.21	61.28
0.09	0.03	0.11	0.09	12.21	5.56	14.22	66.83
0.11	0.04	0.13	0.13	14.22	4.94	16.57	71.78
0.13	0.06	0.15	0.19	16.57	4.30	19.31	76.08
0.15	0.07	0.17	0.26	19.31	3.68	22.49	79.75
0.17	0.10	0.20	0.36	22.49	3.07	26.20	82.82
0.20	0.14	0.23	0.49	26.20	2.69	30.53	85.52
0.23	0.18	0.27	0.68	30.53	2.41	35.56	87.92
0.27	0.24	0.31	0.91	35.56	2.17	41.43	90.09
0.31	0.30	0.36	1.21	41.43	1.96	48.27	92.05
0.36	0.37	0.42	1.58	48.27	1.75	56.23	93.80
0.42	0.48	0.49	2.06	56.23	1.56	65.51	95.36
0.49	0.63	0.58	2.69	65.51	1.38	76.32	96.74
0.58	0.82	0.67	3.52	76.32	1.18	88.91	97.92
0.67	1.07	0.78	4.58	88.91	0.94	103.58	98.86
0.78	1.29	0.91	5.87	103.58	0.69	120.67	99.55
0.91	1.49	1.06	7.35	120.67	0.45	140.58	100.00
1.06	1.62	1.24	8.98	140.58	0.00	163.77	100.00
1.24	1.65	1.44	10.63	163.77	0.00	190.80	100.00
1.44	1.58	1.68	12.21	190.80	0.00	222.28	100.00
1.68	1.43	1.95	13.64	222.28	0.00	258.95	100.00
1.95	1.33	2.28	14.97	258.95	0.00	301.68	100.00
2.28	1.35	2.65	16.32	301.68	0.00	351.46	100.00
2.65	1.57	3.09	17.89	351.46	0.00	409.45	100.00
3.09	2.04	3.60	19.94	409.45	0.00	477.01	100.00
3.60	2.75	4.19	22.69	477.01	0.00	555.71	100.00
4.19	3.64	4.88	26.33	555.71	0.00	647.41	100.00
4.88	4.60	5.69	30.93	647.41	0.00	754.23	100.00
5.69	5.45	6.63	36.38	754.23	0.00	878.67	100.00



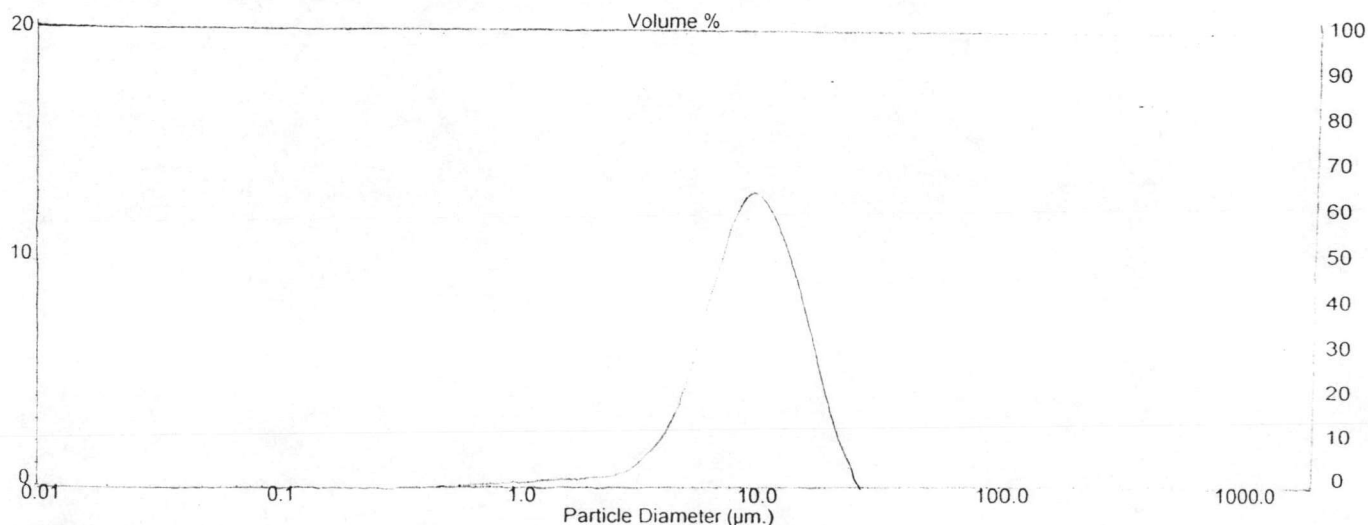
### Result: Analysis Report

Sample Details		
Sample ID: LMWCS 500 i 2A	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 81	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 8.7 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 4.849 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0088 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8182 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.83 um	D (v, 0.5) = 9.64 um	D (v, 0.9) = 16.70 um
D [4, 3] = 10.26 um	D [3, 2] = 7.33 um	Span = 1.232E+00	Uniformity = 3.830E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	9.77	7.72	32.38
0.06	0.00	0.07	0.00	7.72	11.86	9.00	44.23
0.07	0.00	0.08	0.00	9.00	12.92	10.48	57.15
0.08	0.00	0.09	0.00	10.48	12.60	12.21	69.75
0.09	0.00	0.11	0.00	12.21	11.04	14.22	80.78
0.11	0.00	0.13	0.00	14.22	8.86	16.57	89.65
0.13	0.00	0.15	0.00	16.57	5.71	19.31	95.36
0.15	0.00	0.17	0.00	19.31	3.28	22.49	98.64
0.17	0.00	0.20	0.00	22.49	1.31	26.20	99.95
0.20	0.00	0.23	0.00	26.20	0.05	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.00	0.49	0.00	56.23	0.00	65.51	100.00
0.49	0.10	0.58	0.10	65.51	0.00	76.32	100.00
0.58	0.11	0.67	0.21	76.32	0.00	88.91	100.00
0.67	0.14	0.78	0.35	88.91	0.00	103.58	100.00
0.78	0.19	0.91	0.54	103.58	0.00	120.67	100.00
0.91	0.25	1.06	0.79	120.67	0.00	140.58	100.00
1.06	0.31	1.24	1.10	140.58	0.00	163.77	100.00
1.24	0.36	1.44	1.46	163.77	0.00	190.80	100.00
1.44	0.40	1.68	1.87	190.80	0.00	222.28	100.00
1.68	0.43	1.95	2.29	222.28	0.00	258.95	100.00
1.95	0.46	2.28	2.75	258.95	0.00	301.68	100.00
2.28	0.54	2.65	3.29	301.68	0.00	351.46	100.00
2.65	0.74	3.09	4.04	351.46	0.00	409.45	100.00
3.09	1.16	3.60	5.19	409.45	0.00	477.01	100.00
3.60	1.93	4.19	7.12	477.01	0.00	555.71	100.00
4.19	3.18	4.88	10.30	555.71	0.00	647.41	100.00
4.88	5.00	5.69	15.30	647.41	0.00	754.23	100.00
5.69	7.30	6.63	22.60	754.23	0.00	878.67	100.00



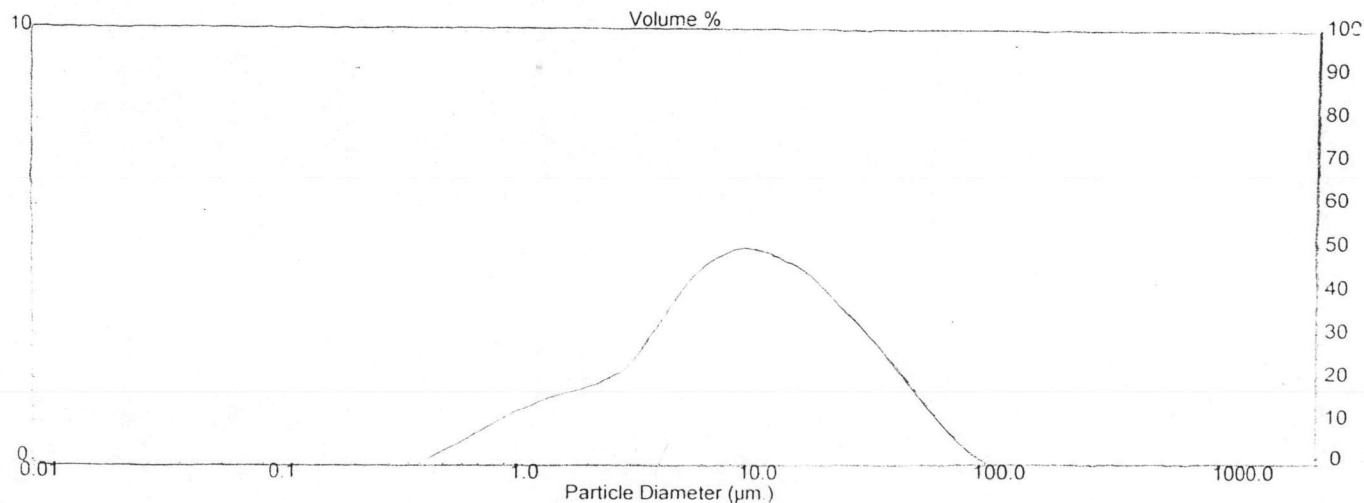
### Result: Analysis Report

Sample Details		
Sample ID: LMw C5 750 / 2 A	Run Number: 2	Measurement Date: Wed, Aug 01, 2009
Sample File: PARI	Record Number: 11	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 21.0 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.524 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --	Killed Result Channels: < 0.05 um; > 120.67 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0179 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2928 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.77 um	D (v, 0.5) = 10.19 um	D (v, 0.9) = 32.91 um
D [4, 3] = 14.31 um	D [3, 2] = 4.64 um	Span = 3.056E+00	Uniformity = 9.423E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	5.63	4.95	7.72	40.92
0.06	0.00	0.07	0.00	7.72	5.00	9.00	45.93
0.07	0.00	0.08	0.00	9.00	4.99	10.48	50.92
0.08	0.00	0.09	0.00	10.48	5.00	12.21	55.92
0.09	0.00	0.11	0.00	12.21	5.08	14.22	61.00
0.11	0.00	0.13	0.00	14.22	5.21	16.57	66.21
0.13	0.00	0.15	0.00	16.57	5.35	19.31	71.56
0.15	0.00	0.17	0.00	19.31	5.42	22.49	76.98
0.17	0.00	0.20	0.00	22.49	5.39	26.20	82.37
0.20	0.00	0.23	0.00	26.20	5.28	30.53	87.65
0.23	0.00	0.27	0.00	30.53	4.54	35.56	92.19
0.27	0.00	0.31	0.00	35.56	3.54	41.43	95.73
0.31	0.00	0.36	0.00	41.43	2.43	48.27	98.16
0.36	0.09	0.42	0.09	48.27	1.36	56.23	99.53
0.42	0.22	0.49	0.31	56.23	0.47	65.51	100.00
0.49	0.39	0.58	0.69	65.51	0.00	76.32	100.00
0.58	0.59	0.67	1.28	76.32	0.00	88.91	100.00
0.67	0.84	0.78	2.12	88.91	0.00	103.58	100.00
0.78	1.08	0.91	3.20	103.58	0.00	120.67	100.00
0.91	1.32	1.06	4.52	120.67	0.00	140.58	100.00
1.06	1.52	1.24	6.04	140.58	0.00	163.77	100.00
1.24	1.65	1.44	7.69	163.77	0.00	190.80	100.00
1.44	1.71	1.68	9.40	190.80	0.00	222.28	100.00
1.68	1.73	1.95	11.12	222.28	0.00	258.95	100.00
1.95	1.79	2.28	12.91	258.95	0.00	301.68	100.00
2.28	1.94	2.65	14.86	301.68	0.00	351.46	100.00
2.65	2.24	3.09	17.10	351.46	0.00	409.45	100.00
3.09	2.68	3.60	19.78	409.45	0.00	477.01	100.00
3.60	3.24	4.19	23.02	477.01	0.00	555.71	100.00
4.19	3.83	4.88	26.85	555.71	0.00	647.41	100.00
4.88	4.37	5.69	31.22	647.41	0.00	754.23	100.00
5.69	4.75	6.63	35.97	754.23	0.00	878.67	100.00





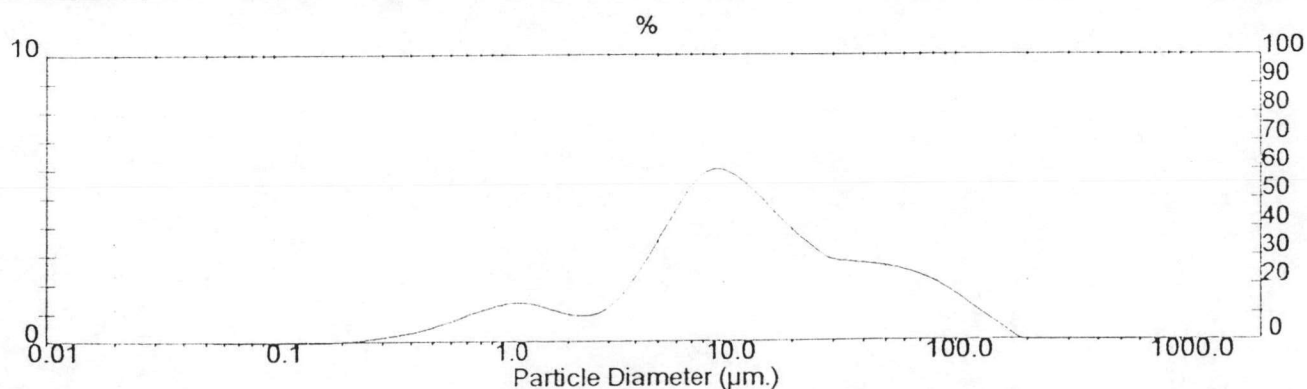
## Result: Analysis Report

Sample Details		
Sample ID: LMWLS 250/3A	Run Number: 3	Measured: Wed 25 Oct 2000
Sample File: PARI	Record Number: 7	Analysed: Wed 25 Oct 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : Water		
Additive : None		
Treatment : Stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 14.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.879 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0111 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.59 um	D (v, 0.5) = 11.25 um	D (v, 0.9) = 62.27 um
D [4, 3] = 22.74 um	D [3, 2] = 4.20 um	Span = 5.396E+00	Uniformity = 1.536E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	5.63	5.49	7.72	35.37
0.06	0.00	0.07	0.00	7.72	5.91	9.00	41.29
0.07	0.00	0.08	0.00	9.00	6.00	10.48	47.29
0.08	0.00	0.09	0.00	10.48	5.79	12.21	53.08
0.09	0.00	0.11	0.00	12.21	5.36	14.22	58.44
0.11	0.01	0.13	0.01	14.22	4.83	16.57	63.27
0.13	0.01	0.15	0.02	16.57	4.27	19.31	67.54
0.15	0.03	0.17	0.04	19.31	3.76	22.49	71.30
0.17	0.05	0.20	0.09	22.49	3.31	26.20	74.61
0.20	0.08	0.23	0.17	26.20	2.91	30.53	77.52
0.23	0.13	0.27	0.30	30.53	2.79	35.56	80.31
0.27	0.19	0.31	0.49	35.56	2.73	41.43	83.05
0.31	0.27	0.36	0.76	41.43	2.68	48.27	85.73
0.36	0.35	0.42	1.11	48.27	2.60	56.23	88.33
0.42	0.47	0.49	1.58	56.23	2.47	65.51	90.80
0.49	0.62	0.58	2.20	65.51	2.29	76.32	93.10
0.58	0.79	0.67	2.98	76.32	2.05	88.91	95.15
0.67	1.00	0.78	3.93	88.91	1.73	103.58	96.88
0.78	1.16	0.91	5.15	103.58	1.35	120.67	98.23
0.91	1.30	1.06	6.45	120.67	0.97	140.58	99.20
1.06	1.38	1.24	7.83	140.58	0.59	163.77	99.79
1.24	1.36	1.44	9.19	163.77	0.21	190.80	100.00
1.44	1.25	1.68	10.44	190.80	0.00	222.28	100.00
1.68	1.09	1.95	11.53	222.28	0.00	258.95	100.00
1.95	0.96	2.28	12.49	258.95	0.00	301.68	100.00
2.28	0.95	2.65	13.44	301.68	0.00	351.46	100.00
2.65	1.12	3.09	14.56	351.46	0.00	409.45	100.00
3.09	1.52	3.60	16.07	409.45	0.00	477.01	100.00
3.60	2.15	4.19	18.22	477.01	0.00	555.71	100.00
4.19	2.97	4.88	21.20	555.71	0.00	647.41	100.00
4.88	3.90	5.69	25.09	647.41	0.00	754.23	100.00
5.69	4.79	6.63	29.88	754.23	0.00	878.67	100.00



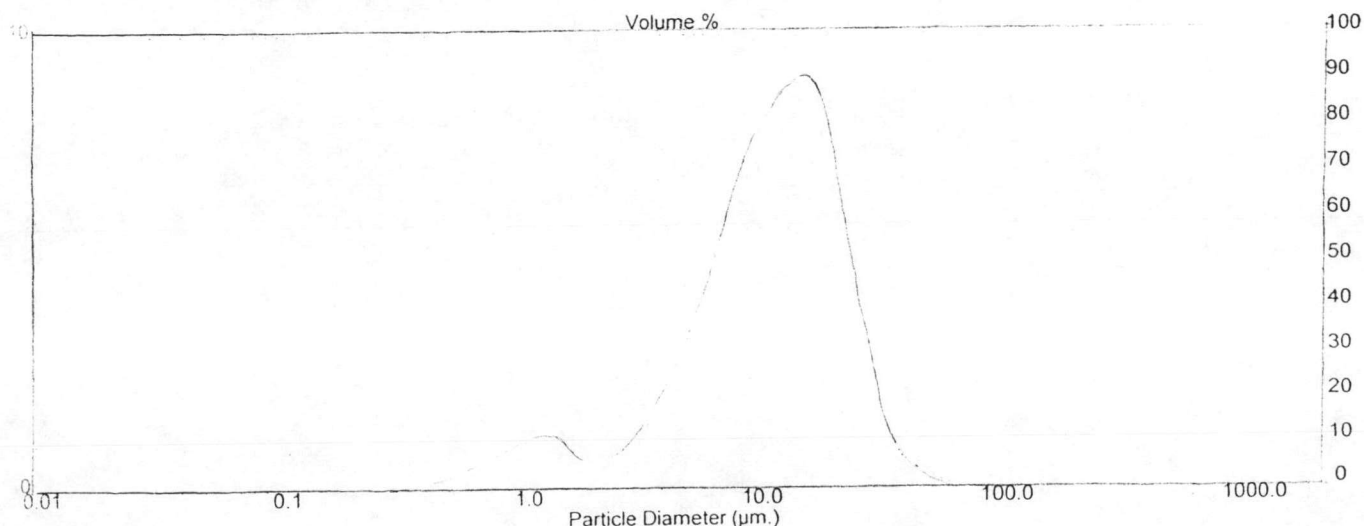
### Result: Analysis Report

Sample Details		Measurement Date: Wed, Aug 01, 2000
Sample ID: LMWCS 50013A	Run Number: 3	Analysis Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 33	Result Source: Analysed
Sample Path: A:\		
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			Obscuration: 15.4 %
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Residual: 1.168 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0134 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1062 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.91 um	D (v, 0.5) = 11.57 um	D (v, 0.9) = 23.99 um
D [4, 3] = 12.77 um	D [3, 2] = 5.42 um	Span = 1.821E+00	Uniformity = 5.544E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.78	7.72	30.23
0.06	0.00	0.07	0.00	7.72	6.80	9.00	37.02
0.07	0.00	0.08	0.00	9.00	7.65	10.48	44.67
0.08	0.00	0.09	0.00	10.48	8.33	12.21	53.00
0.09	0.00	0.11	0.00	12.21	8.78	14.22	61.78
0.11	0.00	0.13	0.00	14.22	8.96	16.57	70.74
0.13	0.00	0.15	0.00	16.57	8.86	19.31	79.61
0.15	0.00	0.17	0.00	19.31	7.67	22.49	87.27
0.17	0.00	0.20	0.00	22.49	5.93	26.20	93.20
0.20	0.00	0.23	0.00	26.20	3.98	30.53	97.19
0.23	0.00	0.27	0.00	30.53	2.19	35.56	99.37
0.27	0.02	0.31	0.02	35.56	0.63	41.43	100.00
0.31	0.09	0.36	0.12	41.43	0.00	48.27	100.00
0.36	0.17	0.42	0.28	48.27	0.00	56.23	100.00
0.42	0.27	0.49	0.56	56.23	0.00	65.51	100.00
0.49	0.41	0.58	0.97	65.51	0.00	76.32	100.00
0.58	0.54	0.67	1.51	76.32	0.00	88.91	100.00
0.67	0.72	0.78	2.23	88.91	0.00	103.58	100.00
0.78	0.85	0.91	3.07	103.58	0.00	120.67	100.00
0.91	0.98	1.06	4.05	120.67	0.00	140.50	100.00
1.06	1.07	1.24	5.12	140.58	0.00	163.77	100.00
1.24	1.10	1.44	6.22	163.77	0.00	190.80	100.00
1.44	1.07	1.68	7.29	190.80	0.00	222.28	100.00
1.68	0.71	1.95	8.00	222.28	0.00	258.95	100.00
1.95	0.69	2.28	8.69	258.95	0.00	301.68	100.00
2.28	0.76	2.65	9.41	301.68	0.00	351.46	100.00
2.65	0.95	3.09	10.39	351.46	0.00	409.45	100.00
3.09	1.30	3.60	11.70	409.45	0.00	477.01	100.00
3.60	1.85	4.19	13.55	477.01	0.00	555.71	100.00
4.19	2.62	4.88	16.17	555.71	0.00	647.41	100.00
4.88	3.59	5.69	19.76	647.41	0.00	754.23	100.00
5.69	4.68	6.63	24.45	754.23	0.00	878.67	100.00



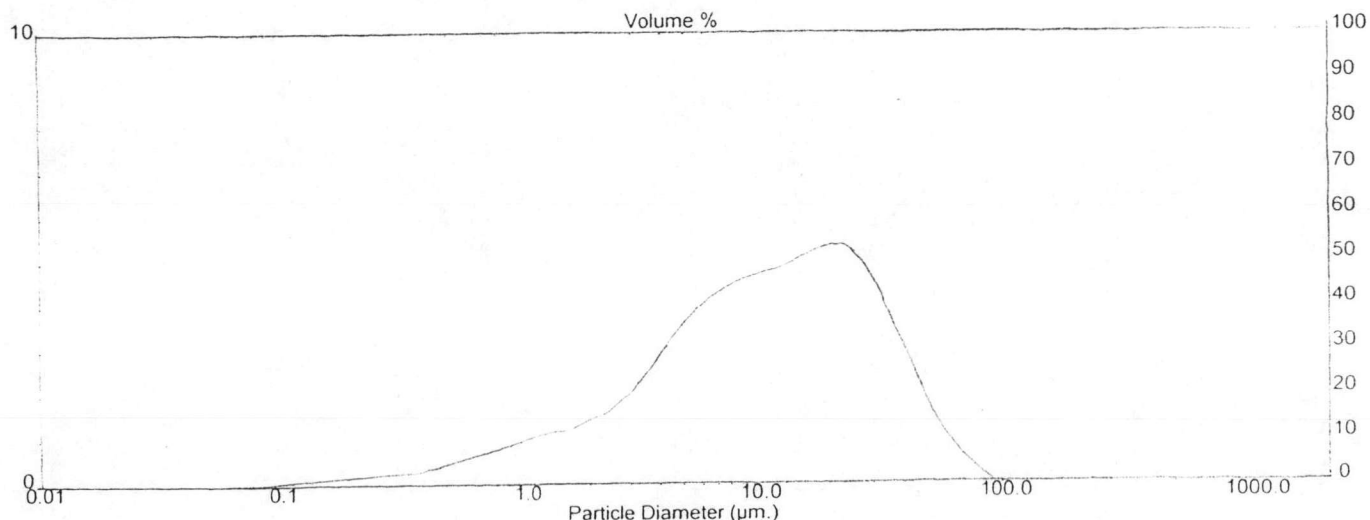
Result: Analysis Report

Sample Details		
Sample ID: LMWCS 750 / 3 A	Run Number: 9	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 6	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.4 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.338 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0180 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.7063 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.66 um	D (v, 0.5) = 11.63 um	D (v, 0.9) = 42.35 um
D [4, 3] = 30.94 um	D [3, 2] = 3.52 um	Span = 3.499E+00	Uniformity = 2.223E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.01	0.06	0.01	6.63	4.39	7.72	37.56
0.06	0.02	0.07	0.02	7.72	4.55	9.00	42.11
0.07	0.02	0.08	0.05	9.00	4.66	10.48	46.77
0.08	0.03	0.09	0.08	10.48	4.75	12.21	51.52
0.09	0.05	0.11	0.13	12.21	4.87	14.22	56.40
0.11	0.06	0.13	0.19	14.22	5.03	16.57	61.43
0.13	0.08	0.15	0.27	16.57	5.21	19.31	66.63
0.15	0.10	0.17	0.37	19.31	5.39	22.49	72.03
0.17	0.13	0.20	0.50	22.49	5.28	26.20	77.31
0.20	0.18	0.23	0.68	26.20	4.87	30.53	82.17
0.23	0.23	0.27	0.91	30.53	4.16	35.56	86.33
0.27	0.28	0.31	1.19	35.56	3.27	41.43	89.61
0.31	0.33	0.36	1.52	41.43	2.34	48.27	91.95
0.36	0.39	0.42	1.91	48.27	1.51	56.23	93.46
0.42	0.46	0.49	2.37	56.23	0.88	65.51	94.34
0.49	0.56	0.58	2.93	65.51	0.47	76.32	94.81
0.58	0.67	0.67	3.60	76.32	0.28	88.91	95.09
0.67	0.80	0.78	4.40	88.91	0.24	103.58	95.32
0.78	0.93	0.91	5.33	103.58	0.27	120.67	95.60
0.91	1.05	1.06	6.38	120.67	0.32	140.58	95.92
1.06	1.16	1.24	7.54	140.58	0.35	163.77	96.26
1.24	1.24	1.44	8.78	163.77	0.35	190.80	96.61
1.44	1.31	1.68	10.09	190.80	0.34	222.28	96.95
1.68	1.38	1.95	11.47	222.28	0.34	258.95	97.29
1.95	1.51	2.28	12.97	258.95	0.34	301.68	97.63
2.28	1.70	2.65	14.67	301.68	0.36	351.46	97.99
2.65	2.00	3.09	16.67	351.46	0.39	409.45	98.38
3.09	2.39	3.60	19.07	409.45	0.41	477.01	98.79
3.60	2.85	4.19	21.92	477.01	0.40	555.71	99.19
4.19	3.33	4.88	25.25	555.71	0.37	647.41	99.56
4.88	3.78	5.69	29.03	647.41	0.28	754.23	99.85
5.69	4.14	6.63	33.17	754.23	0.15	878.67	100.00





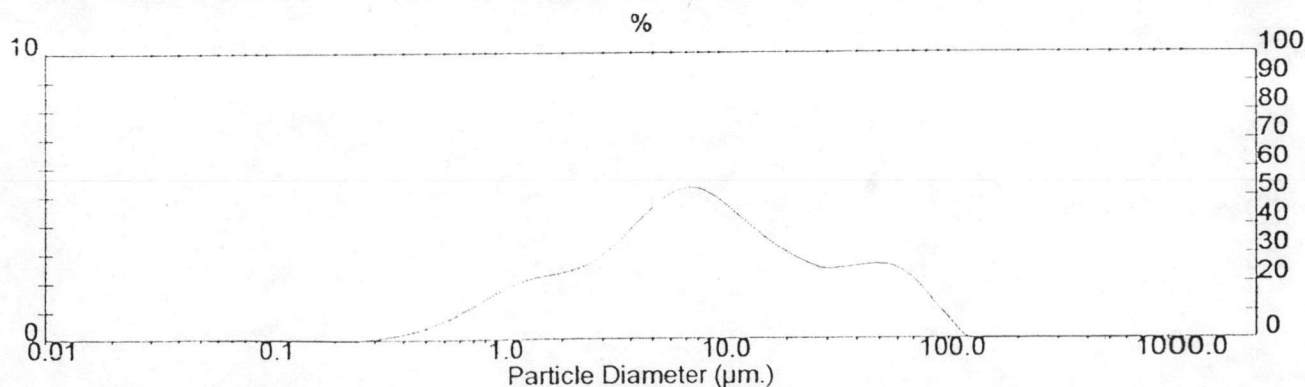
## Result: Analysis Report

Sample Details		
Sample ID: MMWCS 250/1A	Run Number: 5	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 20	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water		
Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 14.2 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 2.078 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0085 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.44 um	D (v, 0.5) = 8.01 um	D (v, 0.9) = 47.67 um
D [4, 3] = 16.49 um	D [3, 2] = 3.77 um	Span = 5.770E+00	Uniformity = 1.595E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.28	7.72	48.72
0.06	0.00	0.07	0.00	7.72	5.22	9.00	53.94
0.07	0.00	0.08	0.00	9.00	4.96	10.48	58.90
0.08	0.00	0.09	0.00	10.48	4.57	12.21	63.46
0.09	0.00	0.11	0.00	12.21	4.12	14.22	67.58
0.11	0.00	0.13	0.00	14.22	3.67	16.57	71.24
0.13	0.00	0.15	0.00	16.57	3.27	19.31	74.52
0.15	0.00	0.17	0.00	19.31	2.95	22.49	77.46
0.17	0.00	0.20	0.00	22.49	2.69	26.20	80.16
0.20	0.00	0.23	0.00	26.20	2.47	30.53	82.63
0.23	0.03	0.27	0.03	30.53	2.47	35.56	85.10
0.27	0.09	0.31	0.12	35.56	2.53	41.43	87.62
0.31	0.16	0.36	0.28	41.43	2.59	48.27	90.21
0.36	0.26	0.42	0.54	48.27	2.60	56.23	92.81
0.42	0.38	0.49	0.92	56.23	2.45	65.51	95.26
0.49	0.56	0.58	1.48	65.51	2.08	76.32	97.34
0.58	0.76	0.67	2.24	76.32	1.48	88.91	98.82
0.67	1.03	0.78	3.27	88.91	0.89	103.58	99.71
0.78	1.31	0.91	4.57	103.58	0.29	120.67	100.00
0.91	1.59	1.06	6.16	120.67	0.00	140.58	100.00
1.06	1.84	1.24	8.00	140.58	0.00	163.77	100.00
1.24	2.04	1.44	10.03	163.77	0.00	190.80	100.00
1.44	2.17	1.68	12.21	190.80	0.00	222.28	100.00
1.68	2.27	1.95	14.47	222.28	0.00	258.95	100.00
1.95	2.37	2.28	16.84	258.95	0.00	301.68	100.00
2.28	2.54	2.65	19.39	301.68	0.00	351.46	100.00
2.65	2.83	3.09	22.22	351.46	0.00	409.45	100.00
3.09	3.25	3.60	25.46	409.45	0.00	477.01	100.00
3.60	3.75	4.19	29.22	477.01	0.00	555.71	100.00
4.19	4.30	4.88	33.52	555.71	0.00	647.41	100.00
4.88	4.79	5.69	38.31	647.41	0.00	754.23	100.00
5.69	5.14	6.63	43.44	754.23	0.00	878.67	100.00



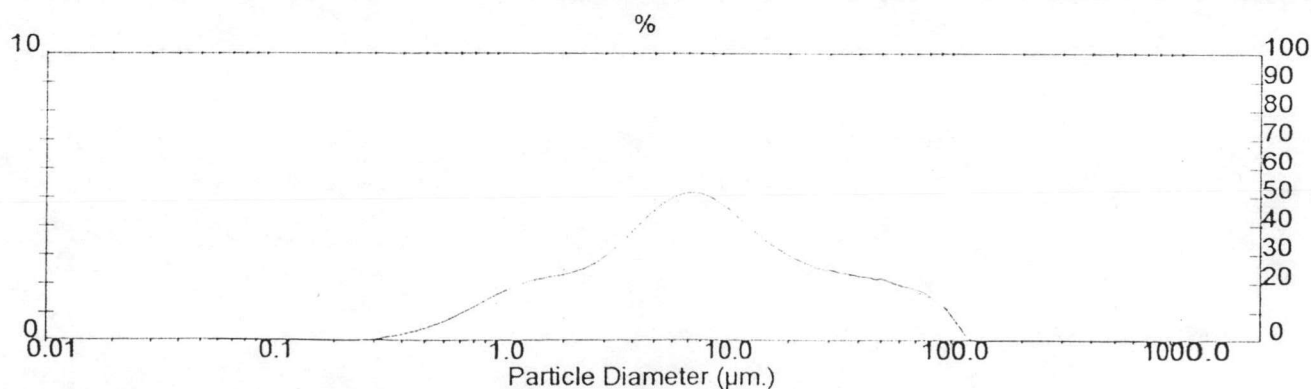
## Result: Analysis Report

Sample Details		
Sample ID: MMWCS 50011A	Run Number: 6	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 21	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 14.2 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.927 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0085 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.44 um	D (v, 0.5) = 8.14 um	D (v, 0.9) = 50.78 um
D [4, 3] = 17.28 um	D [3, 2] = 3.80 um	Span = 6.059E+00	Uniformity = 1.661E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.17	7.72	48.21
0.06	0.00	0.07	0.00	7.72	5.09	9.00	53.30
0.07	0.00	0.08	0.00	9.00	4.83	10.48	58.13
0.08	0.00	0.09	0.00	10.48	4.45	12.21	62.58
0.09	0.00	0.11	0.00	12.21	4.01	14.22	66.59
0.11	0.00	0.13	0.00	14.22	3.59	16.57	70.18
0.13	0.00	0.15	0.00	16.57	3.21	19.31	73.39
0.15	0.00	0.17	0.00	19.31	2.91	22.49	76.30
0.17	0.00	0.20	0.00	22.49	2.68	26.20	78.98
0.20	0.00	0.23	0.00	26.20	2.48	30.53	81.46
0.23	0.03	0.27	0.03	30.53	2.48	35.56	83.94
0.27	0.09	0.31	0.12	35.56	2.54	41.43	86.48
0.31	0.16	0.36	0.28	41.43	2.63	48.27	89.11
0.36	0.26	0.42	0.53	48.27	2.68	56.23	91.79
0.42	0.38	0.49	0.92	56.23	2.61	65.51	94.40
0.49	0.56	0.58	1.47	65.51	2.34	76.32	96.74
0.58	0.76	0.67	2.24	76.32	1.81	88.91	98.55
0.67	1.03	0.78	3.27	88.91	1.09	103.58	99.63
0.78	1.31	0.91	4.57	103.58	0.37	120.67	100.00
0.91	1.58	1.06	6.15	120.67	0.00	140.58	100.00
1.06	1.83	1.24	7.98	140.58	0.00	163.77	100.00
1.24	2.02	1.44	10.00	163.77	0.00	190.80	100.00
1.44	2.15	1.68	12.15	190.80	0.00	222.28	100.00
1.68	2.25	1.95	14.40	222.28	0.00	258.95	100.00
1.95	2.36	2.28	16.76	258.95	0.00	301.68	100.00
2.28	2.53	2.65	19.29	301.68	0.00	351.46	100.00
2.65	2.82	3.09	22.11	351.46	0.00	409.45	100.00
3.09	3.23	3.60	25.34	409.45	0.00	477.01	100.00
3.60	3.72	4.19	29.06	477.01	0.00	555.71	100.00
4.19	4.25	4.88	33.30	555.71	0.00	647.41	100.00
4.88	4.71	5.69	38.01	647.41	0.00	754.23	100.00
5.69	5.04	6.63	43.05	754.23	0.00	878.67	100.00



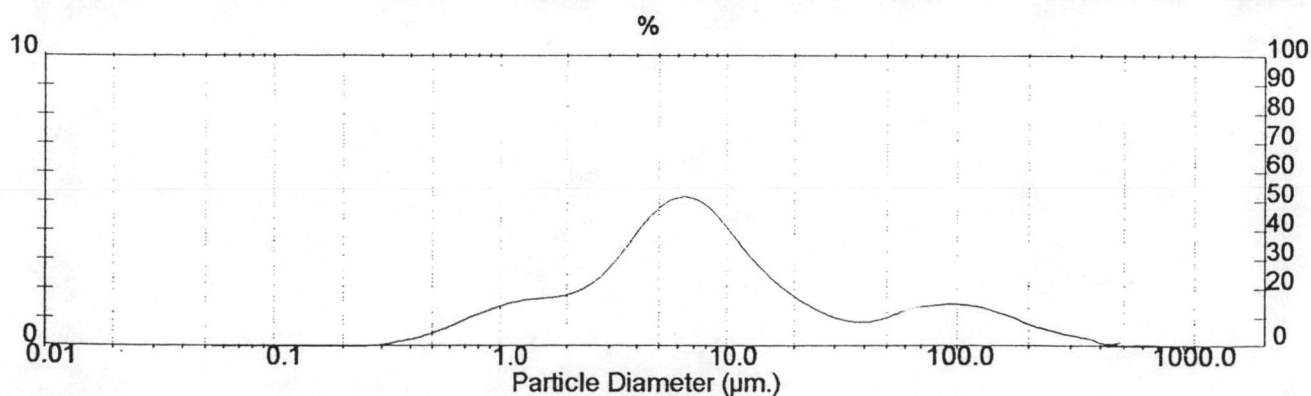
## Result: Analysis Report

Sample Details		
Sample ID: MMWCS 750/1A	Run Number: 3	Measured: Tue 29 Aug 2000
Sample File: PARI	Record Number: 7	Analysed: Tue 29 Aug 2000
Sample Path: C:\SIZERS\DATA\DATA\AID\		Result Source: Analysed
Sample Notes: Dispersing medium : DI water Treatment : stir		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS1	Obscuration: 13.2 %
Presentation: 3OHD	[Particle R.I. = (1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.232 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0089 %Vol	Density = 0.000 g / cub. cm	Specific S.A. = 0.0000 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.59 um	D (v, 0.5) = 9.04 um	D (v, 0.9) = 81.00 um
D [4, 3] = 51.22 um	D [3, 2] = 4.23 um	Span = 1.985E+01	Uniformity = 5.205E+00

Size Low (um)	In %	Size High (um)	Under%	Size Low (um)	In %	Size High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.05	7.72	45.14
0.06	0.00	0.07	0.00	7.72	4.72	9.00	49.86
0.07	0.00	0.08	0.00	9.00	4.21	10.48	54.07
0.08	0.00	0.09	0.00	10.48	3.61	12.21	57.68
0.09	0.00	0.11	0.00	12.21	3.01	14.22	60.69
0.11	0.00	0.13	0.00	14.22	2.47	16.57	63.16
0.13	0.00	0.15	0.00	16.57	2.01	19.31	65.17
0.15	0.00	0.17	0.00	19.31	1.63	22.49	66.79
0.17	0.00	0.20	0.00	22.49	1.32	26.20	68.11
0.20	0.00	0.23	0.00	26.20	1.08	30.53	69.19
0.23	0.02	0.27	0.02	30.53	0.92	35.56	70.11
0.27	0.08	0.31	0.11	35.56	0.85	41.43	70.97
0.31	0.16	0.36	0.27	41.43	0.89	48.27	71.86
0.36	0.26	0.42	0.54	48.27	1.06	56.23	72.92
0.42	0.39	0.49	0.93	56.23	1.33	65.51	74.24
0.49	0.56	0.58	1.49	65.51	1.68	76.32	75.93
0.58	0.75	0.67	2.24	76.32	2.09	88.91	78.01
0.67	0.99	0.78	3.23	88.91	2.40	103.58	80.41
0.78	1.19	0.91	4.42	103.58	2.54	120.67	82.95
0.91	1.38	1.06	5.79	120.67	2.58	140.58	85.54
1.06	1.52	1.24	7.31	140.58	2.66	163.77	88.20
1.24	1.61	1.44	8.93	163.77	2.76	190.80	90.96
1.44	1.66	1.68	10.59	190.80	2.71	222.28	93.67
1.68	1.71	1.95	12.30	222.28	2.46	258.95	96.12
1.95	1.84	2.28	14.14	258.95	1.98	301.68	98.10
2.28	2.10	2.65	16.23	301.68	1.29	351.46	99.39
2.65	2.53	3.09	18.76	351.46	0.61	409.45	100.00
3.09	3.11	3.60	21.88	409.45	0.00	477.01	100.00
3.60	3.78	4.19	25.65	477.01	0.00	555.71	100.00
4.19	4.42	4.88	30.07	555.71	0.00	647.41	100.00
4.88	4.90	5.69	34.97	647.41	0.00	754.23	100.00
5.69	5.12	6.63	40.09	754.23	0.00	878.67	100.00





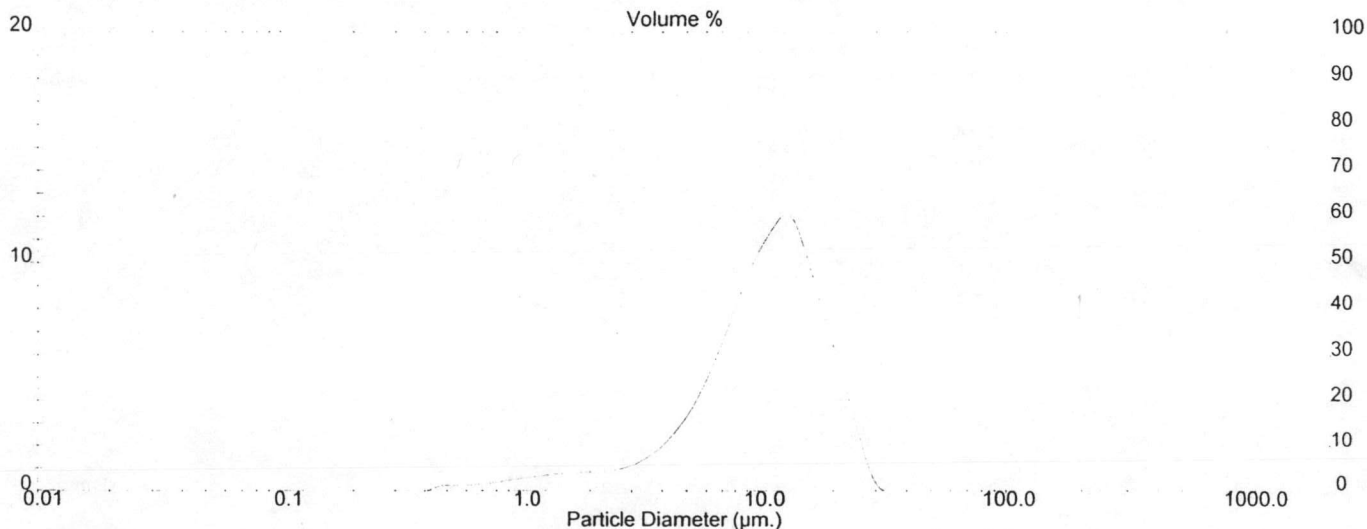
Result: Analysis Report

Sample Details		
Sample ID: MMWCS 250/1A	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: (Result Not Saved)		Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 25.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.840 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0262 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9319 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.91 um	D (v, 0.5) = 10.81 um	D (v, 0.9) = 19.35 um
D [4, 3] = 11.29 um	D [3, 2] = 6.44 um	Span = 1.428E+00	Uniformity = 4.358E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.73	7.72	29.10
0.06	0.00	0.07	0.00	7.72	8.51	9.00	37.61
0.07	0.00	0.08	0.00	9.00	10.18	10.48	47.79
0.08	0.00	0.09	0.00	10.48	11.42	12.21	59.22
0.09	0.00	0.11	0.00	12.21	12.05	14.22	71.27
0.11	0.00	0.13	0.00	14.22	10.51	16.57	81.78
0.13	0.00	0.15	0.00	16.57	8.13	19.31	89.91
0.15	0.00	0.17	0.00	19.31	5.75	22.49	95.65
0.17	0.00	0.20	0.00	22.49	3.36	26.20	99.02
0.20	0.00	0.23	0.00	26.20	0.98	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.20	0.49	0.20	56.23	0.00	65.51	100.00
0.49	0.24	0.58	0.44	65.51	0.00	76.32	100.00
0.58	0.27	0.67	0.72	76.32	0.00	88.91	100.00
0.67	0.34	0.78	1.06	88.91	0.00	103.58	100.00
0.78	0.43	0.91	1.49	103.58	0.00	120.67	100.00
0.91	0.53	1.06	2.02	120.67	0.00	140.58	100.00
1.06	0.62	1.24	2.64	140.58	0.00	163.77	100.00
1.24	0.71	1.44	3.35	163.77	0.00	190.80	100.00
1.44	0.77	1.68	4.12	190.80	0.00	222.28	100.00
1.68	0.82	1.95	4.94	222.28	0.00	258.95	100.00
1.95	0.85	2.28	5.79	258.95	0.00	301.68	100.00
2.28	0.90	2.65	6.69	301.68	0.00	351.46	100.00
2.65	1.04	3.09	7.74	351.46	0.00	409.45	100.00
3.09	1.34	3.60	9.07	409.45	0.00	477.01	100.00
3.60	1.85	4.19	10.92	477.01	0.00	555.71	100.00
4.19	2.63	4.88	13.55	555.71	0.00	647.41	100.00
4.88	3.72	5.69	17.27	647.41	0.00	754.23	100.00
5.69	5.10	6.63	22.37	754.23	0.00	878.67	100.00



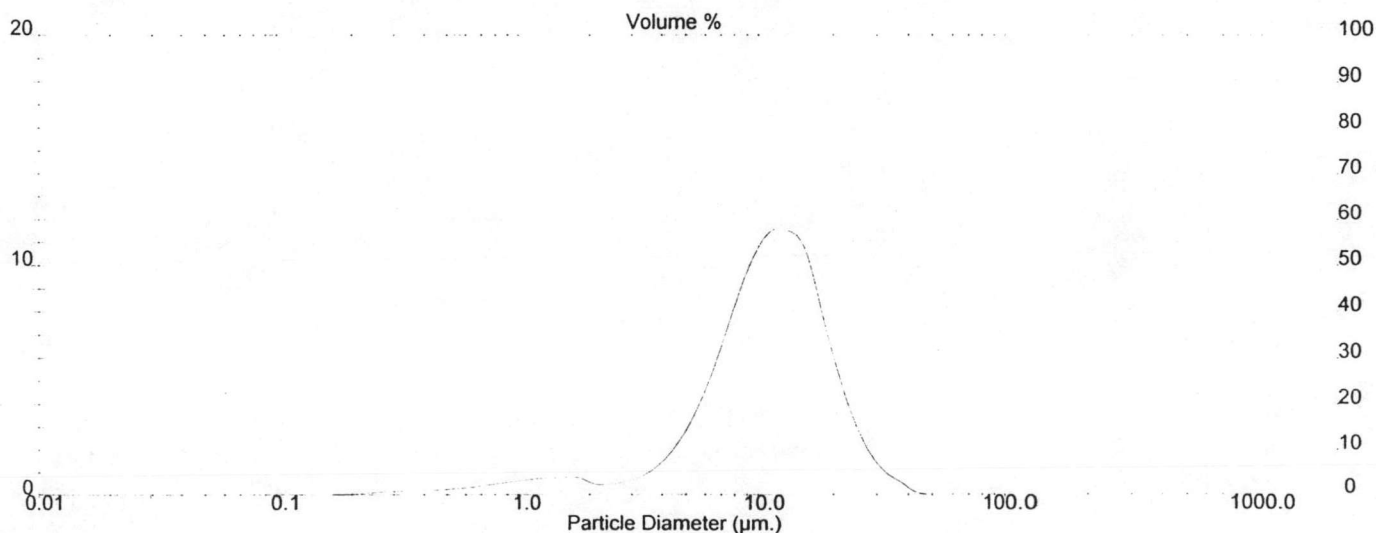
**Result: Analysis Report**

Sample Details		
Sample ID: MMWCS 500 / 2A	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 8	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 11.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.137 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0107 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0978 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.21 um	D (v, 0.5) = 11.03 um	D (v, 0.9) = 20.30 um
D [4, 3] = 11.86 um	D [3, 2] = 5.47 um	Span = 1.459E+00	Uniformity = 4.585E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.05	0.00	6.63	6.74	7.72	25.94
0.06	0.00	0.07	0.00	7.72	8.76	9.00	35.70
0.07	0.00	0.08	0.00	9.00	10.49	10.48	46.19
0.08	0.00	0.09	0.01	10.48	11.48	12.21	57.67
0.09	0.01	0.11	0.01	12.21	11.48	14.22	69.15
0.11	0.01	0.13	0.02	14.22	10.71	16.57	79.86
0.13	0.01	0.15	0.03	16.57	8.08	19.31	87.94
0.15	0.02	0.17	0.06	19.31	5.43	22.49	93.37
0.17	0.04	0.20	0.10	22.49	3.29	26.20	96.67
0.20	0.07	0.23	0.17	26.20	1.83	30.53	98.50
0.23	0.12	0.27	0.28	30.53	0.95	35.56	99.45
0.27	0.16	0.31	0.45	35.56	0.47	41.43	99.93
0.31	0.18	0.36	0.63	41.43	0.07	48.27	100.00
0.36	0.19	0.42	0.82	48.27	0.00	56.23	100.00
0.42	0.23	0.49	1.05	56.23	0.00	65.51	100.00
0.49	0.28	0.58	1.33	65.51	0.00	76.32	100.00
0.58	0.33	0.67	1.66	76.32	0.00	88.91	100.00
0.67	0.42	0.78	2.09	88.91	0.00	103.58	100.00
0.78	0.52	0.91	2.61	103.58	0.00	120.67	100.00
0.91	0.62	1.06	3.22	120.67	0.00	140.58	100.00
1.06	0.70	1.24	3.93	140.58	0.00	163.77	100.00
1.24	0.76	1.44	4.68	163.77	0.00	190.80	100.00
1.44	0.78	1.68	5.46	190.80	0.00	222.28	100.00
1.68	0.76	1.95	6.22	222.28	0.00	258.95	100.00
1.95	0.48	2.28	6.70	258.95	0.00	301.68	100.00
2.28	0.48	2.65	7.19	301.68	0.00	351.46	100.00
2.65	0.59	3.09	7.78	351.46	0.00	409.45	100.00
3.09	0.85	3.60	8.62	409.45	0.00	477.01	100.00
3.60	1.33	4.19	9.95	477.01	0.00	555.71	100.00
4.19	2.12	4.88	12.07	555.71	0.00	647.41	100.00
4.88	3.28	5.69	15.35	647.41	0.00	754.23	100.00
5.69	4.85	6.63	20.20	754.23	0.00	878.67	100.00



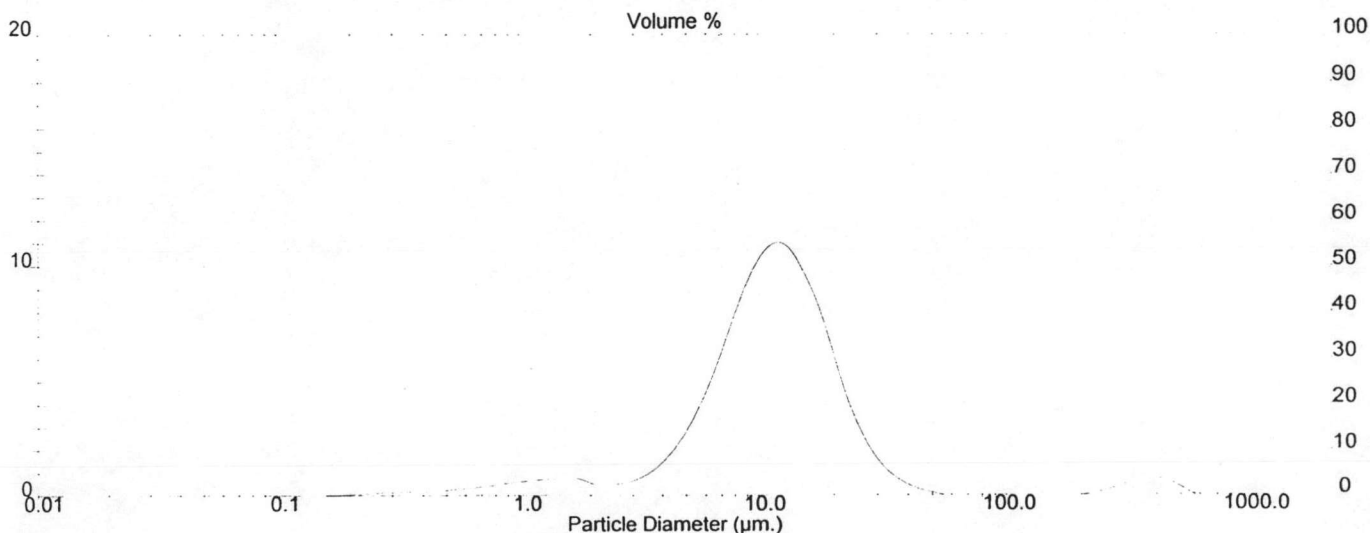
**Result: Analysis Report**

Sample Details		
Sample ID: MMWCS 750/2A	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 9	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 12.8 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.236 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0124 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0790 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.28 um	D (v, 0.5) = 11.26 um	D (v, 0.9) = 22.88 um
D [4, 3] = 22.59 um	D [3, 2] = 5.56 um	Span = 1.652E+00	Uniformity = 1.392E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.56	7.72	26.45
0.06	0.00	0.07	0.00	7.72	8.44	9.00	34.89
0.07	0.00	0.08	0.01	9.00	10.03	10.48	44.92
0.08	0.01	0.09	0.01	10.48	10.92	12.21	55.84
0.09	0.01	0.11	0.02	12.21	10.76	14.22	66.60
0.11	0.01	0.13	0.03	14.22	9.60	16.57	76.20
0.13	0.02	0.15	0.05	16.57	7.88	19.31	84.08
0.15	0.03	0.17	0.07	19.31	5.45	22.49	89.53
0.17	0.05	0.20	0.12	22.49	3.45	26.20	92.97
0.20	0.07	0.23	0.19	26.20	2.03	30.53	95.00
0.23	0.12	0.27	0.31	30.53	1.12	35.56	96.12
0.27	0.16	0.31	0.47	35.56	0.59	41.43	96.71
0.31	0.18	0.36	0.64	41.43	0.28	48.27	96.99
0.36	0.19	0.42	0.84	48.27	0.09	56.23	97.08
0.42	0.22	0.49	1.06	56.23	0.00	65.51	97.08
0.49	0.28	0.58	1.33	65.51	0.00	76.32	97.08
0.58	0.33	0.67	1.66	76.32	0.00	88.91	97.08
0.67	0.41	0.78	2.07	88.91	0.00	103.58	97.08
0.78	0.50	0.91	2.57	103.58	0.00	120.67	97.08
0.91	0.60	1.06	3.17	120.67	0.00	140.58	97.08
1.06	0.67	1.24	3.84	140.58	0.00	163.77	97.08
1.24	0.73	1.44	4.57	163.77	0.00	190.80	97.08
1.44	0.74	1.68	5.31	190.80	0.03	222.28	97.11
1.68	0.73	1.95	6.05	222.28	0.17	258.95	97.28
1.95	0.47	2.28	6.52	258.95	0.38	301.68	97.66
2.28	0.48	2.65	6.99	301.68	0.64	351.46	98.30
2.65	0.59	3.09	7.58	351.46	0.78	409.45	99.07
3.09	0.85	3.60	8.43	409.45	0.64	477.01	99.71
3.60	1.33	4.19	9.77	477.01	0.29	555.71	100.00
4.19	2.11	4.88	11.88	555.71	0.00	647.41	100.00
4.88	3.25	5.69	15.13	647.41	0.00	754.23	100.00
5.69	4.76	6.63	19.89	754.23	0.00	878.67	100.00





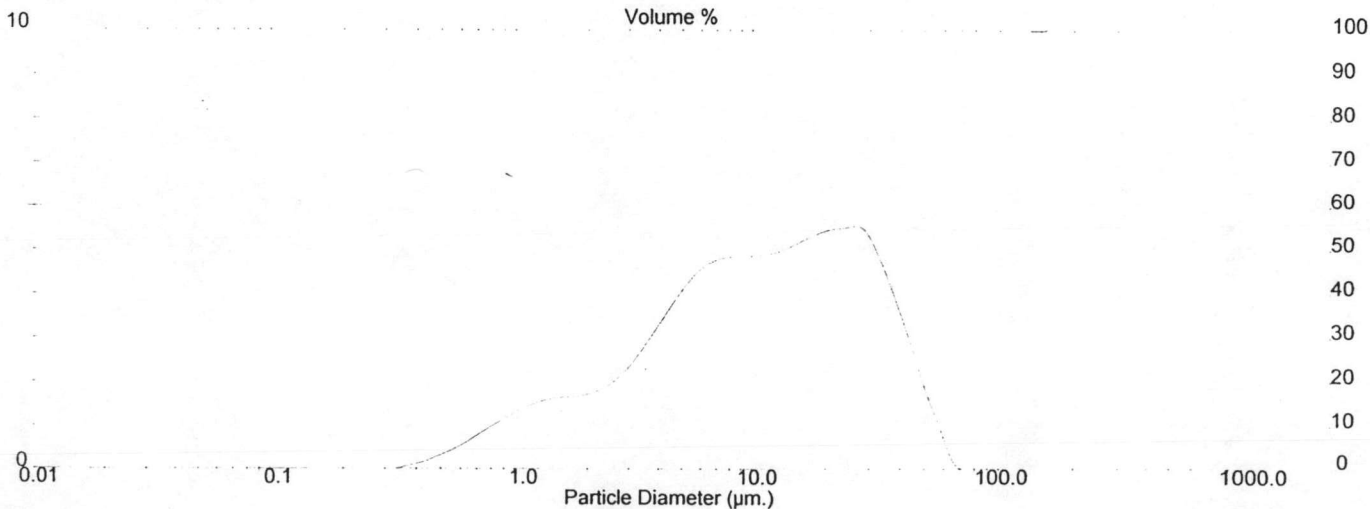
**Result: Analysis Report**

Sample Details		
Sample ID: HMWCS 250 / 1A	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 12	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 21.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.552 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -	Killed Result Channels: < 0.05 um; > 120.67 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0183 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2796 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.80 um	D (v, 0.5) = 10.61 um	D (v, 0.9) = 34.20 um
D [4, 3] = 14.87 um	D [3, 2] = 4.69 um	Span = 3.053E+00	Uniformity = 9.455E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.77	7.72	39.94
0.06	0.00	0.07	0.00	7.72	4.83	9.00	44.77
0.07	0.00	0.08	0.00	9.00	4.83	10.48	49.60
0.08	0.00	0.09	0.00	10.48	4.86	12.21	54.46
0.09	0.00	0.11	0.00	12.21	4.96	14.22	59.43
0.11	0.00	0.13	0.00	14.22	5.13	16.57	64.56
0.13	0.00	0.15	0.00	16.57	5.32	19.31	69.88
0.15	0.00	0.17	0.00	19.31	5.45	22.49	75.33
0.17	0.00	0.20	0.00	22.49	5.50	26.20	80.84
0.20	0.00	0.23	0.00	26.20	5.49	30.53	86.32
0.23	0.00	0.27	0.00	30.53	4.82	35.56	91.15
0.27	0.00	0.31	0.00	35.56	3.86	41.43	95.01
0.31	0.02	0.36	0.02	41.43	2.73	48.27	97.74
0.36	0.11	0.42	0.14	48.27	1.61	56.23	99.35
0.42	0.24	0.49	0.37	56.23	0.65	65.51	100.00
0.49	0.40	0.58	0.77	65.51	0.00	76.32	100.00
0.58	0.59	0.67	1.36	76.32	0.00	88.91	100.00
0.67	0.83	0.78	2.20	88.91	0.00	103.58	100.00
0.78	1.06	0.91	3.26	103.58	0.00	120.67	100.00
0.91	1.28	1.06	4.54	120.67	0.00	140.58	100.00
1.06	1.46	1.24	6.00	140.58	0.00	163.77	100.00
1.24	1.59	1.44	7.59	163.77	0.00	190.80	100.00
1.44	1.64	1.68	9.23	190.80	0.00	222.28	100.00
1.68	1.68	1.95	10.91	222.28	0.00	258.95	100.00
1.95	1.75	2.28	12.66	258.95	0.00	301.68	100.00
2.28	1.92	2.65	14.58	301.68	0.00	351.46	100.00
2.65	2.22	3.09	16.80	351.46	0.00	409.45	100.00
3.09	2.65	3.60	19.45	409.45	0.00	477.01	100.00
3.60	3.18	4.19	22.62	477.01	0.00	555.71	100.00
4.19	3.73	4.88	26.36	555.71	0.00	647.41	100.00
4.88	4.23	5.69	30.59	647.41	0.00	754.23	100.00
5.69	4.58	6.63	35.17	754.23	0.00	878.67	100.00



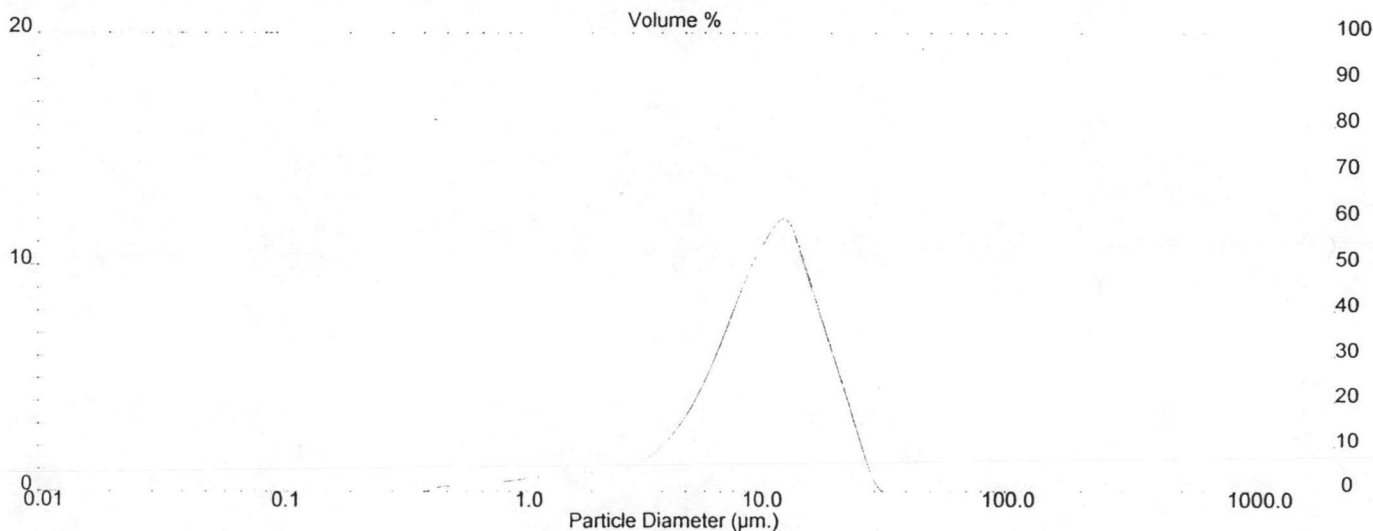
**Result: Analysis Report**

Sample Details		
Sample ID: HMWCS 500/1A	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 2	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 25.7 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.809 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0262 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9334 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.88 um	D (v, 0.5) = 10.82 um	D (v, 0.9) = 19.48 um
D [4, 3] = 11.33 um	D [3, 2] = 6.43 um	Span = 1.442E+00	Uniformity = 4.398E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.53	6.71	7.72	29.20
0.06	0.00	0.07	0.00	7.72	8.46	9.00	37.66
0.07	0.00	0.08	0.00	9.00	10.09	10.48	47.75
0.08	0.00	0.09	0.00	10.48	11.32	12.21	59.07
0.09	0.00	0.11	0.00	12.21	11.95	14.22	71.02
0.11	0.00	0.13	0.00	14.22	10.45	16.57	81.47
0.13	0.00	0.15	0.00	16.57	8.12	19.31	89.59
0.15	0.00	0.17	0.00	19.31	5.80	22.49	95.39
0.17	0.00	0.20	0.00	22.49	3.47	26.20	98.86
0.20	0.00	0.23	0.00	26.20	1.14	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.20	0.49	0.20	56.23	0.00	65.51	100.00
0.49	0.24	0.58	0.45	65.51	0.00	76.32	100.00
0.58	0.28	0.67	0.72	76.32	0.00	88.91	100.00
0.67	0.34	0.78	1.07	88.91	0.00	103.58	100.00
0.78	0.43	0.91	1.50	103.58	0.00	120.67	100.00
0.91	0.53	1.06	2.03	120.67	0.00	140.58	100.00
1.06	0.62	1.24	2.65	140.58	0.00	163.77	100.00
1.24	0.71	1.44	3.36	163.77	0.00	190.80	100.00
1.44	0.78	1.68	4.14	190.80	0.00	222.28	100.00
1.68	0.82	1.95	4.96	222.28	0.00	258.95	100.00
1.95	0.86	2.28	5.82	258.95	0.00	301.68	100.00
2.28	0.91	2.65	6.73	301.68	0.00	351.46	100.00
2.65	1.06	3.09	7.79	351.46	0.00	409.45	100.00
3.09	1.35	3.60	9.14	409.45	0.00	477.01	100.00
3.60	1.87	4.19	11.01	477.01	0.00	555.71	100.00
4.19	2.65	4.88	13.66	555.71	0.00	647.41	100.00
4.88	3.73	5.69	17.39	647.41	0.00	754.23	100.00
5.69	5.10	6.63	22.49	754.23	0.00	878.67	100.00



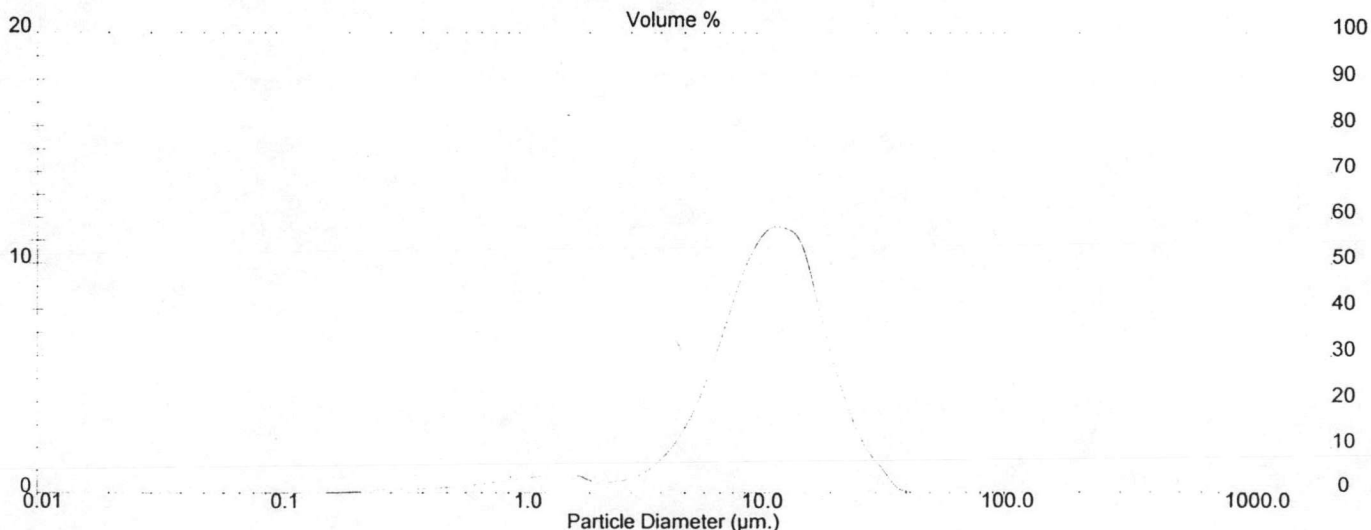
**Result: Analysis Report**

Sample Details		
Sample ID: HMWCS 750 / 1A	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 8	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 11.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 1.156 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0105 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1153 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.17 um	D (v, 0.5) = 10.97 um	D (v, 0.9) = 20.02 um
D [4, 3] = 11.70 um	D [3, 2] = 5.38 um	Span = 1.445E+00	Uniformity = 4.508E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.81	7.72	27.26
0.06	0.00	0.07	0.00	7.72	8.82	9.00	36.09
0.07	0.00	0.08	0.01	9.00	10.54	10.48	46.62
0.08	0.00	0.09	0.01	10.48	11.51	12.21	58.13
0.09	0.01	0.11	0.02	12.21	11.50	14.22	69.63
0.11	0.01	0.13	0.03	14.22	10.74	16.57	80.38
0.13	0.02	0.15	0.04	16.57	8.12	19.31	88.49
0.15	0.03	0.17	0.07	19.31	5.45	22.49	93.94
0.17	0.04	0.20	0.11	22.49	3.27	26.20	97.22
0.20	0.08	0.23	0.19	26.20	1.77	30.53	98.99
0.23	0.12	0.27	0.31	30.53	0.88	35.56	99.87
0.27	0.16	0.31	0.48	35.56	0.13	41.43	100.00
0.31	0.19	0.36	0.66	41.43	0.00	48.27	100.00
0.36	0.20	0.42	0.86	48.27	0.00	56.23	100.00
0.42	0.23	0.49	1.09	56.23	0.00	65.51	100.00
0.49	0.28	0.58	1.37	65.51	0.00	76.32	100.00
0.58	0.34	0.67	1.70	76.32	0.00	88.91	100.00
0.67	0.42	0.78	2.13	88.91	0.00	103.58	100.00
0.78	0.52	0.91	2.65	103.58	0.00	120.67	100.00
0.91	0.62	1.06	3.27	120.67	0.00	140.58	100.00
1.06	0.71	1.24	3.98	140.58	0.00	163.77	100.00
1.24	0.76	1.44	4.74	163.77	0.00	190.80	100.00
1.44	0.78	1.68	5.52	190.80	0.00	222.28	100.00
1.68	0.77	1.95	6.29	222.28	0.00	258.95	100.00
1.95	0.48	2.28	6.78	258.95	0.00	301.68	100.00
2.28	0.49	2.65	7.26	301.68	0.00	351.46	100.00
2.65	0.60	3.09	7.86	351.46	0.00	409.45	100.00
3.09	0.86	3.60	8.72	409.45	0.00	477.01	100.00
3.60	1.35	4.19	10.06	477.01	0.00	555.71	100.00
4.19	2.15	4.88	12.21	555.71	0.00	647.41	100.00
4.88	3.33	5.69	15.54	647.41	0.00	754.23	100.00
5.69	4.91	6.63	20.45	754.23	0.00	878.67	100.00





**APPENDIX VII**

**PARTICLE SIZE AND SIZE DISTRIBUTION CURVE OF**

**POLY( LACTIDE - CO - GLYCOLIDE ) MICROPARTICLES KEPT**

**AT 40°C FOR 1 MONTH**

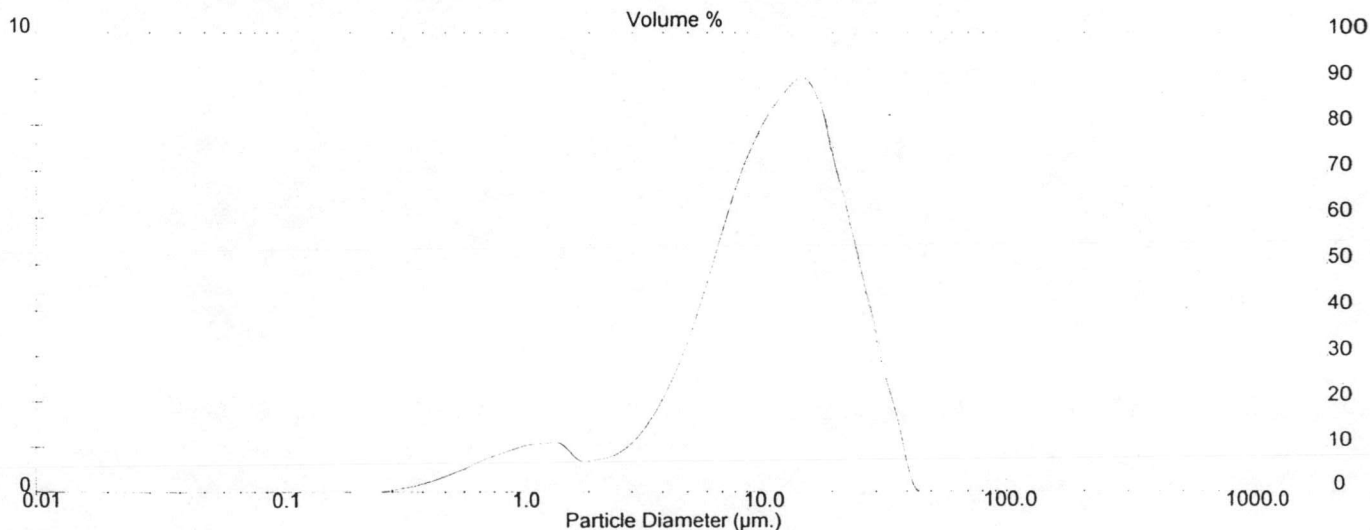
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 DL 250/15	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 31	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details		
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]	Obscuration: 15.4 %
Analysis Model: Polydisperse		Residual: 1.538 %
Modifications: Active --	Killed Data Channels: Low 0; High 2	

Result Statistics			
Distribution Type: Volume	Concentration = 0.0132 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1154 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.88 um	D (v, 0.5) = 11.45 um	D (v, 0.9) = 24.33 um
D [4, 3] = 12.79 um	D [3, 2] = 5.38 um	Span = 1.873E+00	Uniformity = 5.682E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.84	7.72	30.74
0.06	0.00	0.07	0.00	7.72	6.83	9.00	37.57
0.07	0.00	0.08	0.00	9.00	7.66	10.48	45.24
0.08	0.00	0.09	0.00	10.48	8.32	12.21	53.55
0.09	0.00	0.11	0.00	12.21	8.77	14.22	62.32
0.11	0.00	0.13	0.00	14.22	9.01	16.57	71.34
0.13	0.00	0.15	0.00	16.57	8.42	19.31	79.75
0.15	0.00	0.17	0.00	19.31	7.20	22.49	86.95
0.17	0.00	0.20	0.00	22.49	5.53	26.20	92.48
0.20	0.00	0.23	0.00	26.20	3.94	30.53	96.42
0.23	0.00	0.27	0.00	30.53	2.46	35.56	98.88
0.27	0.03	0.31	0.03	35.56	1.12	41.43	100.00
0.31	0.10	0.36	0.13	41.43	0.00	48.27	100.00
0.36	0.18	0.42	0.31	48.27	0.00	56.23	100.00
0.42	0.28	0.49	0.59	56.23	0.00	65.51	100.00
0.49	0.41	0.58	1.00	65.51	0.00	76.32	100.00
0.58	0.55	0.67	1.55	76.32	0.00	88.91	100.00
0.67	0.72	0.78	2.26	88.91	0.00	103.58	100.00
0.78	0.84	0.91	3.11	103.58	0.00	120.67	100.00
0.91	0.97	1.06	4.07	120.67	0.00	140.58	100.00
1.06	1.05	1.24	5.13	140.58	0.00	163.77	100.00
1.24	1.09	1.44	6.21	163.77	0.00	190.80	100.00
1.44	1.06	1.68	7.27	190.80	0.00	222.28	100.00
1.68	0.72	1.95	8.00	222.28	0.00	258.95	100.00
1.95	0.71	2.28	8.70	258.95	0.00	301.68	100.00
2.28	0.79	2.65	9.49	301.68	0.00	351.46	100.00
2.65	0.99	3.09	10.48	351.46	0.00	409.45	100.00
3.09	1.36	3.60	11.84	409.45	0.00	477.01	100.00
3.60	1.93	4.19	13.77	477.01	0.00	555.71	100.00
4.19	2.71	4.88	16.48	555.71	0.00	647.41	100.00
4.88	3.67	5.69	20.15	647.41	0.00	754.23	100.00
5.69	4.75	6.63	24.91	754.23	0.00	878.67	100.00



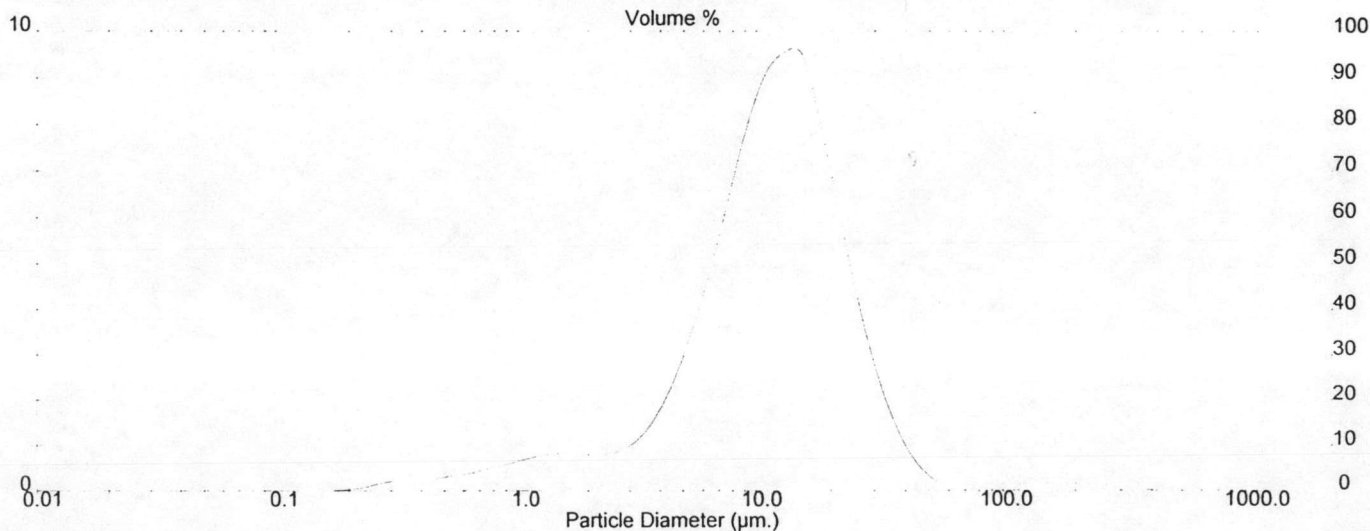
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 DL 500/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 26	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 26.9 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.235 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0272 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1026 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.48 um	D (v, 0.5) = 11.69 um	D (v, 0.9) = 25.27 um
D [4, 3] = 15.39 um	D [3, 2] = 5.44 um	Span = 1.863E+00	Uniformity = 7.433E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.79	7.72	27.94
0.06	0.00	0.07	0.00	7.72	7.15	9.00	35.09
0.07	0.00	0.08	0.00	9.00	8.36	10.48	43.45
0.08	0.00	0.09	0.00	10.48	9.21	12.21	52.66
0.09	0.00	0.11	0.00	12.21	9.54	14.22	62.20
0.11	0.00	0.13	0.00	14.22	9.47	16.57	71.67
0.13	0.00	0.15	0.01	16.57	8.11	19.31	79.78
0.15	0.01	0.17	0.02	19.31	6.44	22.49	86.22
0.17	0.02	0.20	0.04	22.49	4.77	26.20	90.99
0.20	0.05	0.23	0.09	26.20	3.29	30.53	94.28
0.23	0.12	0.27	0.21	30.53	2.08	35.56	96.35
0.27	0.20	0.31	0.41	35.56	1.18	41.43	97.54
0.31	0.23	0.36	0.64	41.43	0.59	48.27	98.13
0.36	0.23	0.42	0.87	48.27	0.26	56.23	98.39
0.42	0.26	0.49	1.13	56.23	0.11	65.51	98.50
0.49	0.33	0.58	1.46	65.51	0.08	76.32	98.57
0.58	0.37	0.67	1.83	76.32	0.10	88.91	98.67
0.67	0.46	0.78	2.29	88.91	0.14	103.58	98.82
0.78	0.53	0.91	2.82	103.58	0.17	120.67	98.99
0.91	0.63	1.06	3.45	120.67	0.18	140.58	99.17
1.06	0.72	1.24	4.17	140.58	0.17	163.77	99.34
1.24	0.79	1.44	4.96	163.77	0.16	190.80	99.50
1.44	0.81	1.68	5.77	190.80	0.15	222.28	99.65
1.68	0.80	1.95	6.57	222.28	0.14	258.95	99.79
1.95	0.78	2.28	7.36	258.95	0.12	301.68	99.91
2.28	0.80	2.65	8.16	301.68	0.07	351.46	99.98
2.65	0.93	3.09	9.09	351.46	0.02	409.45	100.00
3.09	1.20	3.60	10.29	409.45	0.00	477.01	100.00
3.60	1.67	4.19	11.96	477.01	0.00	555.71	100.00
4.19	2.37	4.88	14.33	555.71	0.00	647.41	100.00
4.88	3.33	5.69	17.66	647.41	0.00	754.23	100.00
5.69	4.49	6.63	22.15	754.23	0.00	878.67	100.00





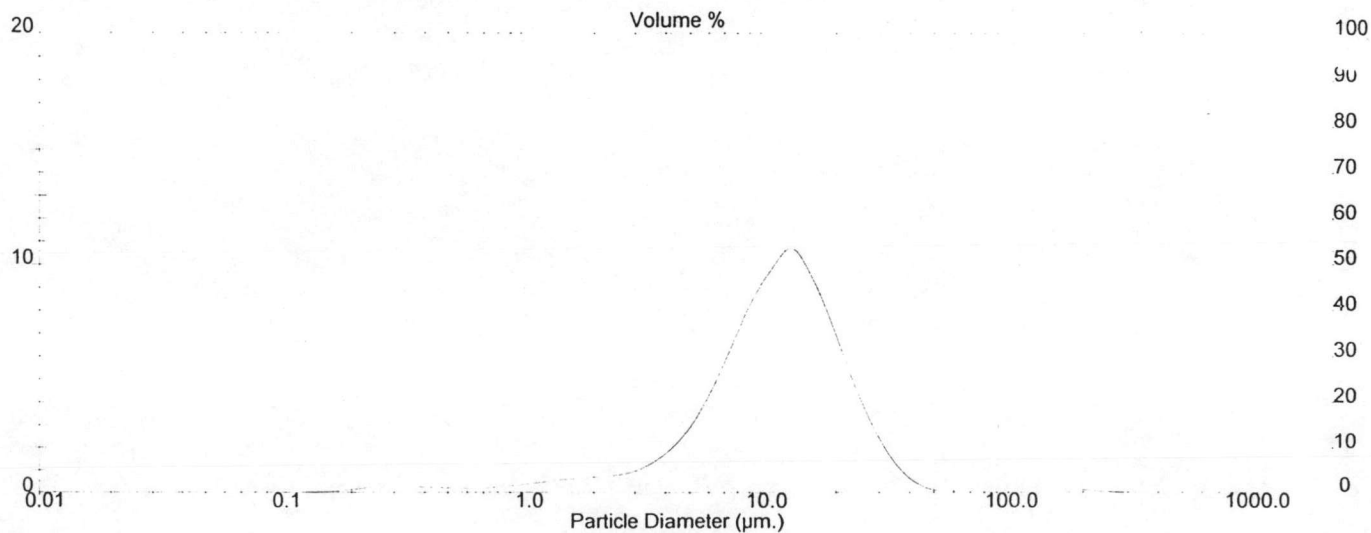
## Result: Analysis Report

Sample Details		
Sample ID: 1.5 DL 750/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 19	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.5 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.343 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0214 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1721 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.07 um	D (v, 0.5) = 11.78 um	D (v, 0.9) = 24.29 um
D [4, 3] = 15.09 um	D [3, 2] = 5.12 um	Span = 1.716E+00	Uniformity = 6.876E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.89	7.72	26.23
0.06	0.00	0.07	0.00	7.72	7.42	9.00	33.65
0.07	0.01	0.08	0.01	9.00	8.83	10.48	42.49
0.08	0.01	0.09	0.02	10.48	9.93	12.21	52.42
0.09	0.01	0.11	0.03	12.21	10.66	14.22	63.08
0.11	0.02	0.13	0.05	14.22	9.78	16.57	72.86
0.13	0.03	0.15	0.08	16.57	8.24	19.31	81.10
0.15	0.05	0.17	0.14	19.31	6.39	22.49	87.49
0.17	0.10	0.20	0.23	22.49	4.55	26.20	92.04
0.20	0.17	0.23	0.40	26.20	2.95	30.53	94.99
0.23	0.26	0.27	0.66	30.53	1.69	35.56	96.68
0.27	0.33	0.31	0.99	35.56	0.83	41.43	97.51
0.31	0.31	0.36	1.30	41.43	0.32	48.27	97.83
0.36	0.26	0.42	1.56	48.27	0.10	56.23	97.93
0.42	0.23	0.49	1.78	56.23	0.10	65.51	98.04
0.49	0.21	0.58	1.99	65.51	0.17	76.32	98.21
0.58	0.19	0.67	2.18	76.32	0.27	88.91	98.48
0.67	0.21	0.78	2.39	88.91	0.32	103.58	98.80
0.78	0.27	0.91	2.66	103.58	0.32	120.67	99.11
0.91	0.35	1.06	3.01	120.67	0.28	140.58	99.39
1.06	0.43	1.24	3.44	140.58	0.22	163.77	99.61
1.24	0.52	1.44	3.96	163.77	0.16	190.80	99.77
1.44	0.60	1.68	4.56	190.80	0.11	222.28	99.88
1.68	0.66	1.95	5.22	222.28	0.07	258.95	99.95
1.95	0.71	2.28	5.93	258.95	0.04	301.68	99.99
2.28	0.77	2.65	6.70	301.68	0.01	351.46	100.00
2.65	0.90	3.09	7.60	351.46	0.00	409.45	100.00
3.09	1.16	3.60	8.75	409.45	0.00	477.01	100.00
3.60	1.61	4.19	10.36	477.01	0.00	555.71	100.00
4.19	2.29	4.88	12.65	555.71	0.00	647.41	100.00
4.88	3.24	5.69	15.89	647.41	0.00	754.23	100.00
5.69	4.45	6.63	20.35	754.23	0.00	878.67	100.00



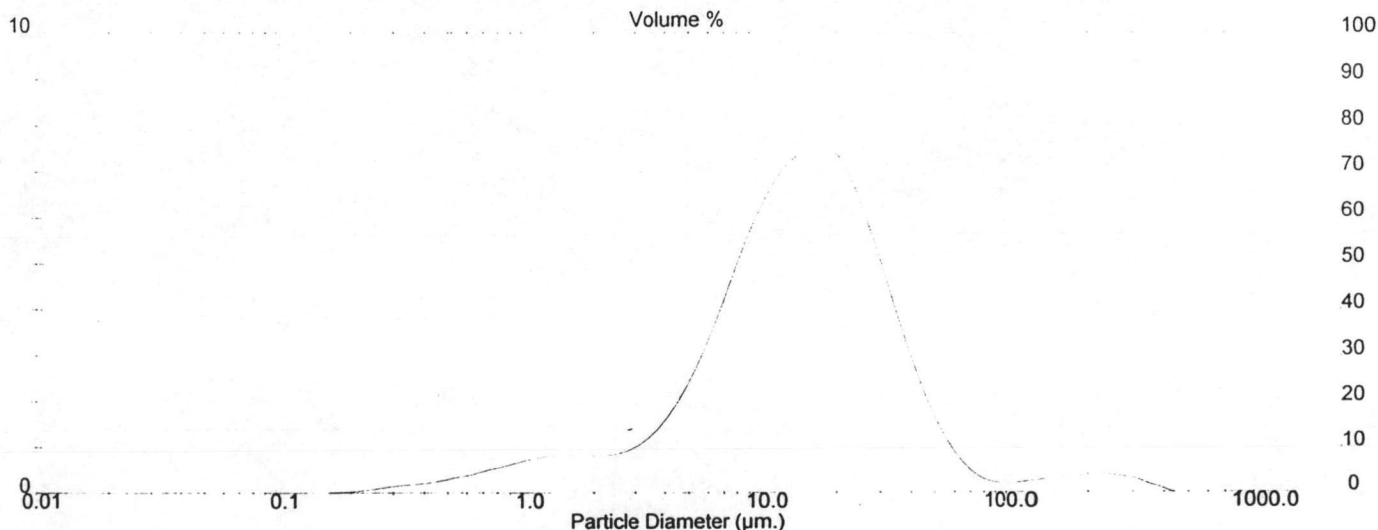
**Result: Analysis Report**

Sample Details		
Sample ID: 3 DL 750115	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 6	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.191 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0248 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0207 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.39 um	D (v, 0.5) = 14.31 um	D (v, 0.9) = 38.25 um
D [4, 3] = 22.66 um	D [3, 2] = 5.88 um	Span = 2.436E+00	Uniformity = 1.057E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.32	7.72	24.43
0.06	0.00	0.07	0.00	7.72	5.23	9.00	29.66
0.07	0.00	0.08	0.00	9.00	6.07	10.48	35.73
0.08	0.00	0.09	0.00	10.48	6.76	12.21	42.49
0.09	0.00	0.11	0.00	12.21	7.22	14.22	49.70
0.11	0.00	0.13	0.01	14.22	7.43	16.57	57.13
0.13	0.01	0.15	0.01	16.57	7.43	19.31	64.56
0.15	0.01	0.17	0.03	19.31	7.29	22.49	71.85
0.17	0.02	0.20	0.05	22.49	6.52	26.20	78.37
0.20	0.05	0.23	0.10	26.20	5.52	30.53	83.89
0.23	0.09	0.27	0.19	30.53	4.41	35.56	88.30
0.27	0.14	0.31	0.33	35.56	3.30	41.43	91.59
0.31	0.18	0.36	0.51	41.43	2.30	48.27	93.89
0.36	0.21	0.42	0.71	48.27	1.48	56.23	95.37
0.42	0.26	0.49	0.97	56.23	0.87	65.51	96.25
0.49	0.34	0.58	1.31	65.51	0.49	76.32	96.73
0.58	0.40	0.67	1.71	76.32	0.28	88.91	97.01
0.67	0.50	0.78	2.21	88.91	0.22	103.58	97.23
0.78	0.58	0.91	2.80	103.58	0.23	120.67	97.46
0.91	0.68	1.06	3.48	120.67	0.27	140.58	97.73
1.06	0.76	1.24	4.24	140.58	0.33	163.77	98.06
1.24	0.81	1.44	5.05	163.77	0.37	190.80	98.43
1.44	0.83	1.68	5.88	190.80	0.40	222.28	98.83
1.68	0.82	1.95	6.70	222.28	0.40	258.95	99.23
1.95	0.82	2.28	7.52	258.95	0.35	301.68	99.59
2.28	0.85	2.65	8.37	301.68	0.26	351.46	99.85
2.65	0.96	3.09	9.33	351.46	0.14	409.45	99.99
3.09	1.16	3.60	10.49	409.45	0.01	477.01	100.00
3.60	1.51	4.19	12.00	477.01	0.00	555.71	100.00
4.19	2.00	4.88	14.00	555.71	0.00	647.41	100.00
4.88	2.66	5.69	16.66	647.41	0.00	754.23	100.00
5.69	3.45	6.63	20.11	754.23	0.00	878.67	100.00



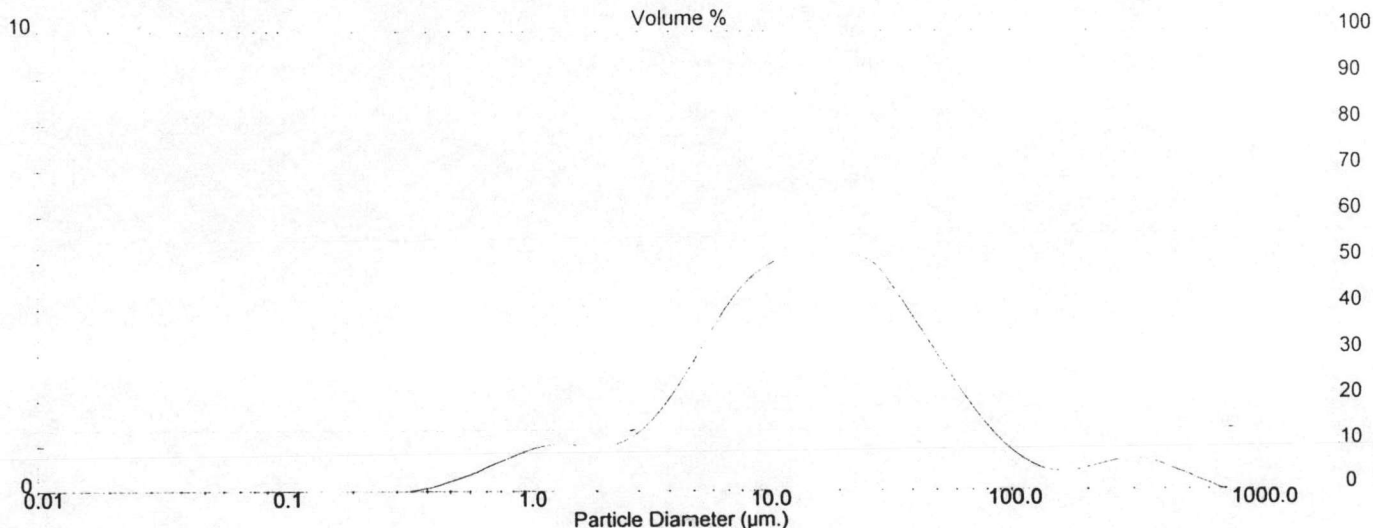
**Result: Analysis Report**

Sample Details		
Sample ID: 5 DL 750/15	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 3	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 13.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.279 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0134 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9243 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.93 um	D (v, 0.5) = 15.57 um	D (v, 0.9) = 66.28 um
D [4, 3] = 35.56 um	D [3, 2] = 6.49 um	Span = 4.068E+00	Uniformity = 1.813E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.15	7.72	27.28
0.06	0.00	0.07	0.00	7.72	4.55	9.00	31.83
0.07	0.00	0.08	0.00	9.00	4.83	10.48	36.66
0.08	0.00	0.09	0.00	10.48	5.03	12.21	41.69
0.09	0.00	0.11	0.00	12.21	5.18	14.22	46.87
0.11	0.00	0.13	0.00	14.22	5.28	16.57	52.16
0.13	0.00	0.15	0.00	16.57	5.31	19.31	57.47
0.15	0.00	0.17	0.00	19.31	5.25	22.49	62.72
0.17	0.00	0.20	0.00	22.49	5.11	26.20	67.84
0.20	0.00	0.23	0.00	26.20	4.92	30.53	72.76
0.23	0.00	0.27	0.00	30.53	4.49	35.56	77.25
0.27	0.00	0.31	0.00	35.56	3.28	41.43	81.23
0.31	0.01	0.36	0.01	41.43	3.43	48.27	84.65
0.36	0.08	0.42	0.08	48.27	2.87	56.23	87.52
0.42	0.16	0.49	0.25	56.23	2.32	65.51	89.84
0.49	0.28	0.58	0.53	65.51	1.81	76.32	91.66
0.58	0.41	0.67	0.94	76.32	1.36	88.91	93.02
0.67	0.58	0.78	1.52	88.91	0.98	103.58	94.00
0.78	0.72	0.91	2.24	103.58	0.69	120.67	94.69
0.91	0.87	1.06	3.10	120.67	0.50	140.58	95.19
1.06	0.98	1.24	4.08	140.58	0.42	163.77	95.61
1.24	1.04	1.44	5.12	163.77	0.43	190.80	96.04
1.44	1.04	1.68	6.16	190.80	0.51	222.28	96.55
1.68	1.01	1.95	7.17	222.28	0.61	258.95	97.15
1.95	1.00	2.28	8.17	258.95	0.68	301.68	97.83
2.28	1.06	2.65	9.23	301.68	0.68	351.46	98.51
2.65	1.23	3.09	10.46	351.46	0.59	409.45	99.10
3.09	1.52	3.60	11.98	409.45	0.45	477.01	99.55
3.60	1.95	4.19	13.93	477.01	0.30	555.71	99.85
4.19	2.48	4.88	16.41	555.71	0.15	647.41	100.00
4.88	3.07	5.69	19.48	647.41	0.00	754.23	100.00
5.69	3.65	6.63	23.13	754.23	0.00	878.67	100.00





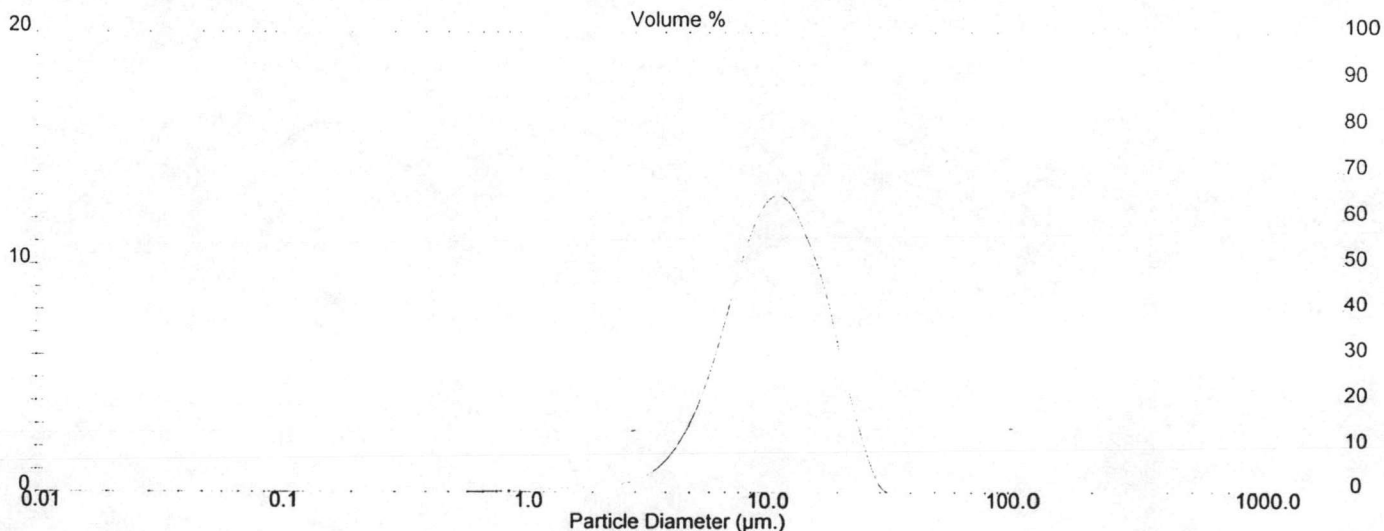
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 P 95 250/15	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 42	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.9 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 4.515 %
Analysis Model: Polydisperse			
Modifications: Active -	. Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0275 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.6832 sq. m / g
Mean Diameters:	D (v, 0.1) = 5.72 um	D (v, 0.5) = 11.07 um	D (v, 0.9) = 19.10 um
D [4, 3] = 11.81 um	D [3, 2] = 8.78 um	Span = 1.209E+00	Uniformity = 3.754E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	7.78	7.72	23.06
0.06	0.00	0.07	0.00	7.72	10.19	9.00	33.26
0.07	0.00	0.08	0.00	9.00	12.11	10.48	45.37
0.08	0.00	0.09	0.00	10.48	12.97	12.21	58.34
0.09	0.00	0.11	0.00	12.21	12.50	14.22	70.84
0.11	0.00	0.13	0.00	14.22	10.91	16.57	81.75
0.13	0.00	0.15	0.00	16.57	8.77	19.31	90.52
0.15	0.00	0.17	0.01	19.31	5.69	22.49	96.21
0.17	0.00	0.20	0.01	22.49	2.97	26.20	99.18
0.20	0.01	0.23	0.01	26.20	0.82	30.53	100.00
0.23	0.01	0.27	0.02	30.53	0.00	35.56	100.00
0.27	0.01	0.31	0.03	35.56	0.00	41.43	100.00
0.31	0.01	0.36	0.04	41.43	0.00	48.27	100.00
0.36	0.01	0.42	0.06	48.27	0.00	56.23	100.00
0.42	0.02	0.49	0.07	56.23	0.00	65.51	100.00
0.49	0.02	0.58	0.09	65.51	0.00	76.32	100.00
0.58	0.03	0.67	0.13	76.32	0.00	88.91	100.00
0.67	0.05	0.78	0.17	88.91	0.00	103.58	100.00
0.78	0.07	0.91	0.24	103.58	0.00	120.67	100.00
0.91	0.10	1.06	0.34	120.67	0.00	140.58	100.00
1.06	0.14	1.24	0.48	140.58	0.00	163.77	100.00
1.24	0.17	1.44	0.65	163.77	0.00	190.80	100.00
1.44	0.21	1.68	0.86	190.80	0.00	222.28	100.00
1.68	0.24	1.95	1.09	222.28	0.00	258.95	100.00
1.95	0.27	2.28	1.37	258.95	0.00	301.68	100.00
2.28	0.33	2.65	1.70	301.68	0.00	351.46	100.00
2.65	0.47	3.09	2.17	351.46	0.00	409.45	100.00
3.09	0.74	3.60	2.91	409.45	0.00	477.01	100.00
3.60	1.26	4.19	4.17	477.01	0.00	555.71	100.00
4.19	2.14	4.88	6.31	555.71	0.00	647.41	100.00
4.88	3.52	5.69	9.83	647.41	0.00	754.23	100.00
5.69	5.45	6.63	15.28	754.23	0.00	878.67	100.00



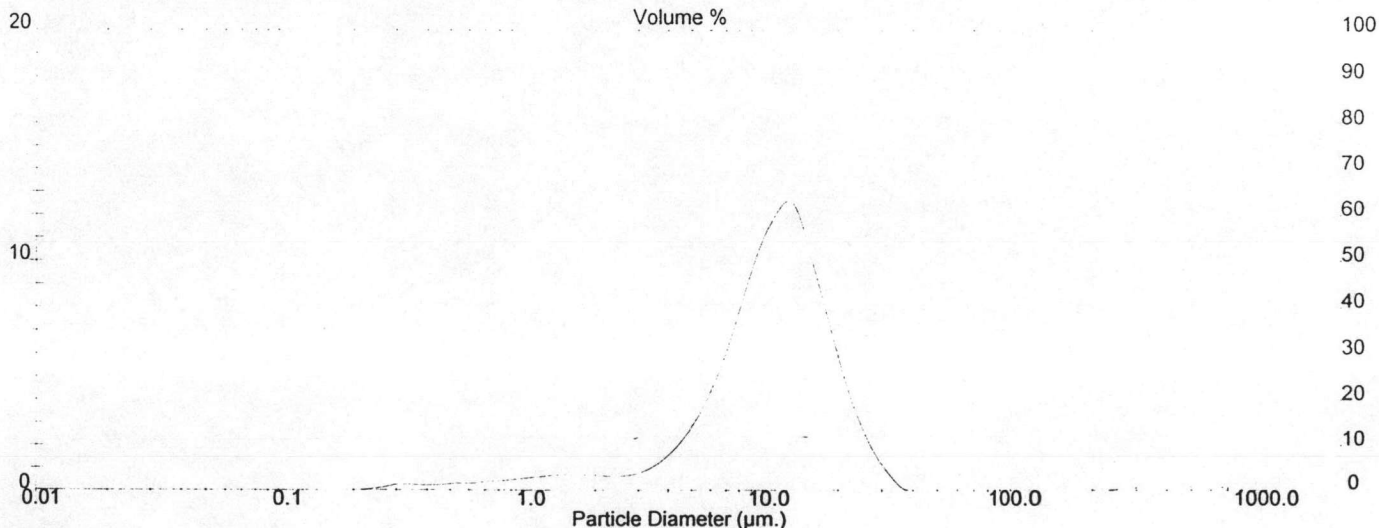
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 P 55 500/15	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 8	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 29.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = -1.3300]	Residual: 0.241 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0306 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0596 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.14 um	D (v, 0.5) = 11.14 um	D (v, 0.9) = 20.22 um
D [4, 3] = 17.23 um	D [3, 2] = 5.66 um	Span = 1.443E+00	Uniformity = 9.294E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.30	7.72	26.36
0.06	0.00	0.07	0.00	7.72	8.42	9.00	34.78
0.07	0.00	0.08	0.00	9.00	10.54	10.48	45.32
0.08	0.00	0.09	0.00	10.48	12.03	12.21	57.36
0.09	0.00	0.11	0.00	12.21	12.50	14.22	69.86
0.11	0.00	0.13	0.00	14.22	10.46	16.57	80.32
0.13	0.00	0.15	0.00	16.57	7.83	19.31	88.16
0.15	0.00	0.17	0.00	19.31	5.27	22.49	93.43
0.17	0.00	0.20	0.00	22.49	3.17	26.20	96.60
0.20	0.02	0.23	0.03	26.20	1.61	30.53	98.21
0.23	0.10	0.27	0.12	30.53	0.58	35.56	98.79
0.27	0.23	0.31	0.36	35.56	0.01	41.43	98.80
0.31	0.27	0.36	0.62	41.43	0.00	48.27	98.80
0.36	0.23	0.42	0.85	48.27	0.00	56.23	98.80
0.42	0.25	0.49	1.10	56.23	0.00	65.51	98.80
0.49	0.32	0.58	1.41	65.51	0.00	76.32	98.80
0.58	0.32	0.67	1.73	76.32	0.00	88.91	98.80
0.67	0.39	0.78	2.12	88.91	0.00	103.58	98.80
0.78	0.44	0.91	2.56	103.58	0.00	120.67	98.80
0.91	0.52	1.06	3.08	120.67	0.00	140.58	98.80
1.06	0.60	1.24	3.68	140.58	0.00	163.77	98.80
1.24	0.67	1.44	4.34	163.77	0.00	190.80	98.80
1.44	0.70	1.68	5.05	190.80	0.00	222.28	98.80
1.68	0.70	1.95	5.75	222.28	0.04	258.95	98.84
1.95	0.66	2.28	6.41	258.95	0.10	301.68	98.94
2.28	0.63	2.65	7.04	301.68	0.15	351.46	99.09
2.65	0.71	3.09	7.75	351.46	0.19	409.45	99.28
3.09	0.96	3.60	8.71	409.45	0.18	477.01	99.46
3.60	1.43	4.19	10.14	477.01	0.17	555.71	99.63
4.19	2.16	4.88	12.30	555.71	0.15	647.41	99.79
4.88	3.19	5.69	15.50	647.41	0.13	754.23	99.91
5.69	4.56	6.63	20.05	754.23	0.09	878.67	100.00



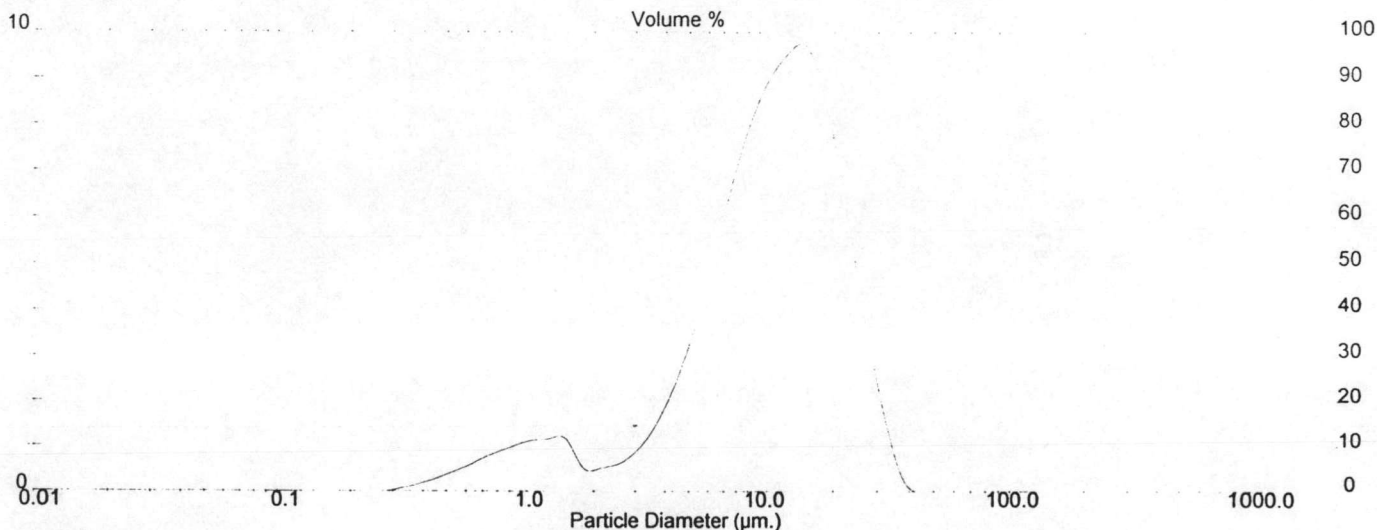
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 P&S 750/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 32	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 15.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 2.074 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0131 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1255 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.02 um	D (v, 0.5) = 11.27 um	D (v, 0.9) = 22.43 um
D [4, 3] = 12.23 um	D [3, 2] = 5.33 um	Span = 1.723E+00	Uniformity = 5.215E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.13	7.72	30.11
0.06	0.00	0.07	0.00	7.72	7.33	9.00	37.44
0.07	0.00	0.08	0.00	9.00	8.33	10.48	45.77
0.08	0.00	0.09	0.00	10.48	9.08	12.21	54.84
0.09	0.00	0.11	0.00	12.21	9.54	14.22	64.38
0.11	0.00	0.13	0.00	14.22	9.71	16.57	74.10
0.13	0.00	0.15	0.00	16.57	8.82	19.31	82.92
0.15	0.00	0.17	0.00	19.31	7.20	22.49	90.11
0.17	0.00	0.20	0.00	22.49	5.14	26.20	95.26
0.20	0.00	0.23	0.00	26.20	3.10	30.53	98.36
0.23	0.00	0.27	0.00	30.53	1.42	35.56	99.78
0.27	0.02	0.31	0.02	35.56	0.22	41.43	100.00
0.31	0.09	0.36	0.11	41.43	0.00	48.27	100.00
0.36	0.18	0.42	0.28	48.27	0.00	56.23	100.00
0.42	0.29	0.49	0.57	56.23	0.00	65.51	100.00
0.49	0.43	0.58	1.00	65.51	0.00	76.32	100.00
0.58	0.58	0.67	1.58	76.32	0.00	88.91	100.00
0.67	0.77	0.78	2.35	88.91	0.00	103.58	100.00
0.78	0.91	0.91	3.26	103.58	0.00	120.67	100.00
0.91	1.04	1.06	4.29	120.67	0.00	140.58	100.00
1.06	1.13	1.24	5.43	140.58	0.00	163.77	100.00
1.24	1.17	1.44	6.59	163.77	0.00	190.80	100.00
1.44	1.15	1.68	7.74	190.80	0.00	222.28	100.00
1.68	0.53	1.95	8.27	222.28	0.00	258.95	100.00
1.95	0.51	2.28	8.78	258.95	0.00	301.68	100.00
2.28	0.58	2.65	9.36	301.68	0.00	351.46	100.00
2.65	0.78	3.09	10.14	351.46	0.00	409.45	100.00
3.09	1.13	3.60	11.27	409.45	0.00	477.01	100.00
3.60	1.71	4.19	12.98	477.01	0.00	555.71	100.00
4.19	2.53	4.88	15.52	555.71	0.00	647.41	100.00
4.88	3.61	5.69	19.12	647.41	0.00	754.23	100.00
5.69	4.85	6.63	23.98	754.23	0.00	878.67	100.00





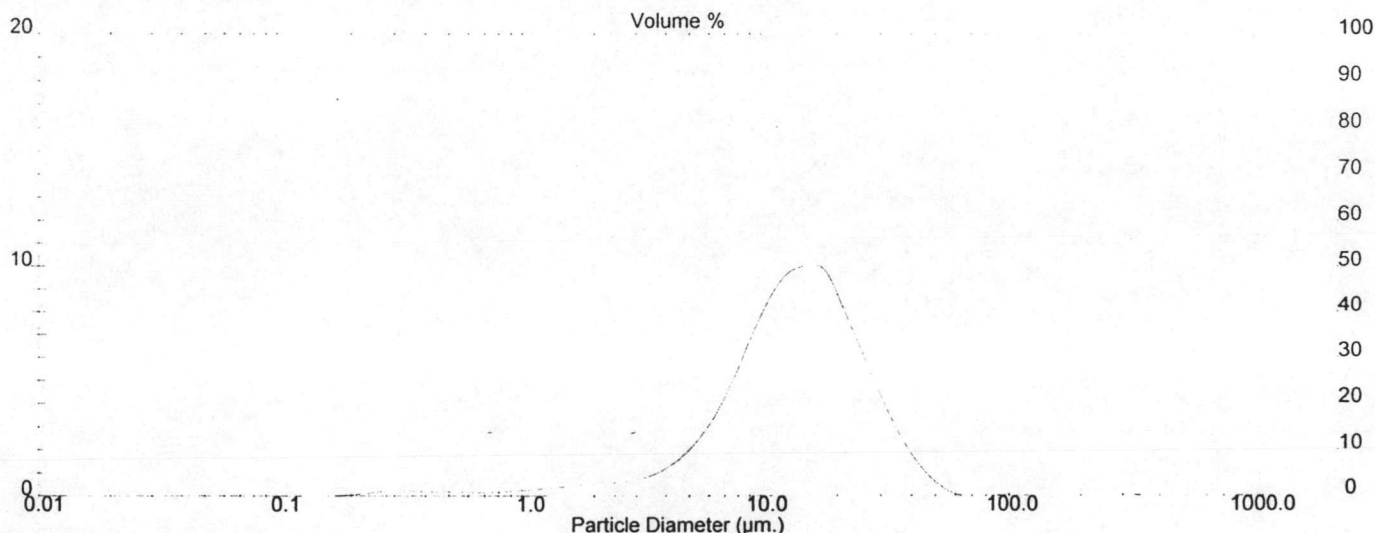
### Result: Analysis Report

Sample Details		
Sample ID: 3 P 25 750/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 4	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.2 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.289 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active -			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0255 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9054 sq. m / g
Mean Diameters:	D (v, 0.1) = 5.20 um	D (v, 0.5) = 13.98 um	D (v, 0.9) = 29.49 um
D [4, 3] = 18.39 um	D [3, 2] = 6.63 um	Span = 1.737E+00	Uniformity = 7.125E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.42	7.72	19.06
0.06	0.00	0.07	0.00	7.72	5.90	9.00	24.96
0.07	0.00	0.08	0.00	9.00	7.49	10.48	32.45
0.08	0.00	0.09	0.00	10.48	8.89	12.21	41.35
0.09	0.00	0.11	0.01	12.21	9.77	14.22	51.12
0.11	0.00	0.13	0.01	14.22	10.00	16.57	61.11
0.13	0.01	0.15	0.02	16.57	9.84	19.31	70.95
0.15	0.02	0.17	0.04	19.31	8.38	22.49	79.33
0.17	0.04	0.20	0.08	22.49	6.68	26.20	86.01
0.20	0.09	0.23	0.17	26.20	4.97	30.53	90.99
0.23	0.17	0.27	0.34	30.53	3.41	35.56	94.40
0.27	0.25	0.31	0.59	35.56	2.12	41.43	96.52
0.31	0.25	0.36	0.84	41.43	1.13	48.27	97.65
0.36	0.21	0.42	1.05	48.27	0.46	56.23	98.11
0.42	0.19	0.49	1.24	56.23	0.08	65.51	98.19
0.49	0.19	0.58	1.43	65.51	0.00	76.32	98.19
0.58	0.17	0.67	1.59	76.32	0.00	88.91	98.19
0.67	0.17	0.78	1.77	88.91	0.06	103.58	98.25
0.78	0.21	0.91	1.97	103.58	0.19	120.67	98.45
0.91	0.25	1.06	2.22	120.67	0.29	140.58	98.73
1.06	0.30	1.24	2.52	140.58	0.32	163.77	99.06
1.24	0.36	1.44	2.89	163.77	0.31	190.80	99.37
1.44	0.43	1.68	3.32	190.80	0.26	222.28	99.62
1.68	0.50	1.95	3.82	222.28	0.19	258.95	99.82
1.95	0.55	2.28	4.36	258.95	0.13	301.68	99.94
2.28	0.59	2.65	4.96	301.68	0.06	351.46	100.00
2.65	0.67	3.09	5.63	351.46	0.00	409.45	100.00
3.09	0.83	3.60	6.46	409.45	0.00	477.01	100.00
3.60	1.12	4.19	7.58	477.01	0.00	555.71	100.00
4.19	1.59	4.88	9.16	555.71	0.00	647.41	100.00
4.88	2.27	5.69	11.43	647.41	0.00	754.23	100.00
5.69	3.21	6.63	14.64	754.23	0.00	878.67	100.00



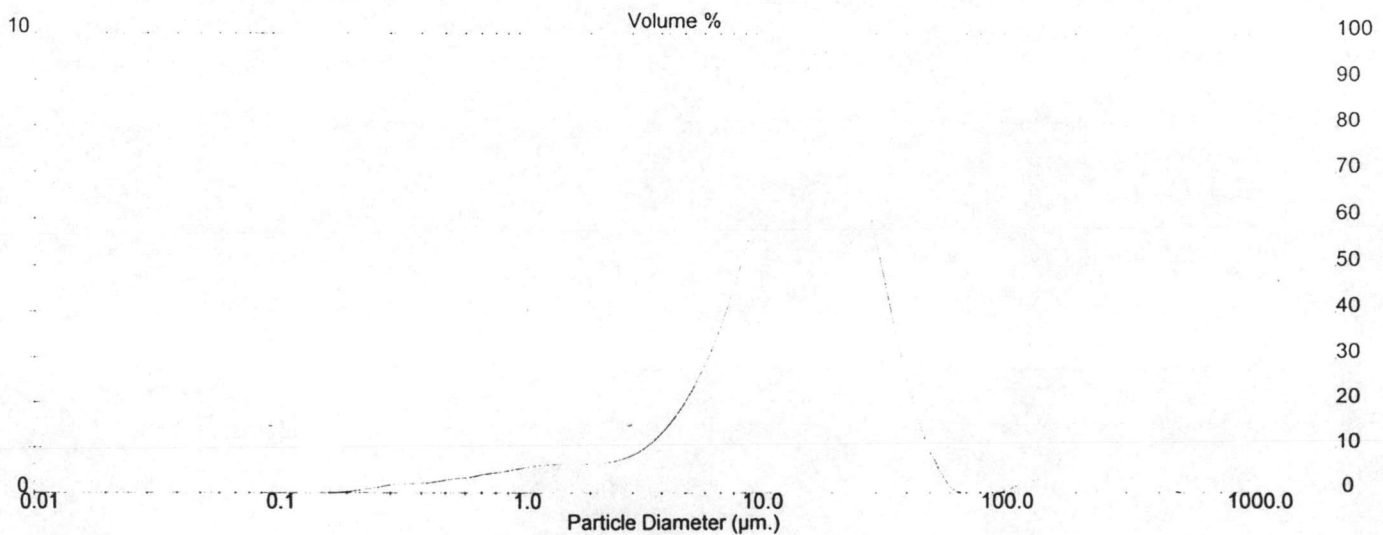
**Result: Analysis Report**

Sample Details		
Sample ID: 5 P45 750 / 15	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 24	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.230 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0277 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9477 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.23 um	D (v, 0.5) = 15.17 um	D (v, 0.9) = 32.37 um
D [4, 3] = 20.50 um	D [3, 2] = 6.33 um	Span = 1.854E+00	Uniformity = 7.944E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	3.79	7.72	20.53
0.06	0.00	0.07	0.00	7.72	4.79	9.00	25.32
0.07	0.00	0.08	0.00	9.00	5.89	10.48	31.21
0.08	0.00	0.09	0.00	10.48	7.02	12.21	38.24
0.09	0.00	0.11	0.00	12.21	8.08	14.22	46.31
0.11	0.00	0.13	0.01	14.22	8.96	16.57	55.27
0.13	0.00	0.15	0.01	16.57	9.66	19.31	64.93
0.15	0.01	0.17	0.02	19.31	9.09	22.49	74.01
0.17	0.02	0.20	0.04	22.49	7.85	26.20	81.86
0.20	0.05	0.23	0.09	26.20	6.22	30.53	88.08
0.23	0.10	0.27	0.20	30.53	4.49	35.56	92.57
0.27	0.17	0.31	0.36	35.56	2.90	41.43	95.47
0.31	0.20	0.36	0.56	41.43	1.61	48.27	97.08
0.36	0.21	0.42	0.78	48.27	0.68	56.23	97.76
0.42	0.25	0.49	1.03	56.23	0.13	65.51	97.89
0.49	0.31	0.58	1.34	65.51	0.00	76.32	97.89
0.58	0.35	0.67	1.69	76.32	0.00	88.91	97.89
0.67	0.41	0.78	2.10	88.91	0.01	103.58	97.90
0.78	0.46	0.91	2.56	103.58	0.16	120.67	98.06
0.91	0.53	1.06	3.09	120.67	0.27	140.58	98.33
1.06	0.58	1.24	3.68	140.58	0.32	163.77	98.65
1.24	0.62	1.44	4.30	163.77	0.32	190.80	98.97
1.44	0.63	1.68	4.93	190.80	0.28	222.28	99.25
1.68	0.63	1.95	5.57	222.28	0.24	258.95	99.49
1.95	0.65	2.28	6.22	258.95	0.19	301.68	99.69
2.28	0.69	2.65	6.91	301.68	0.15	351.46	99.84
2.65	0.79	3.09	7.70	351.46	0.10	409.45	99.94
3.09	0.96	3.60	8.66	409.45	0.06	477.01	100.00
3.60	1.25	4.19	9.91	477.01	0.00	555.71	100.00
4.19	1.66	4.88	11.57	555.71	0.00	647.41	100.00
4.88	2.23	5.69	13.80	647.41	0.00	754.23	100.00
5.69	2.94	6.63	16.74	754.23	0.00	878.67	100.00



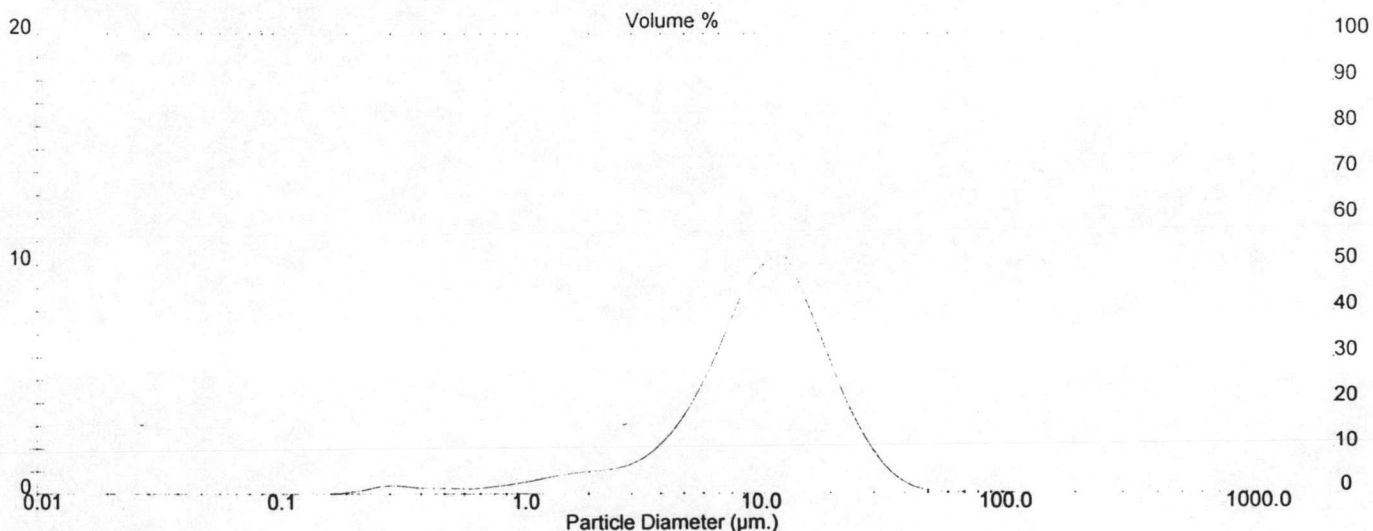
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 P 75 250/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 38	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 24.7 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.263 %
Analysis Model: Polydisperse	. Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0231 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2396 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.14 um	D (v, 0.5) = 10.59 um	D (v, 0.9) = 21.52 um
D [4, 3] = 11.94 um	D [3, 2] = 4.84 um	Span = 1.736E+00	Uniformity = 5.503E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.60	7.72	31.83
0.06	0.00	0.07	0.00	7.72	8.13	9.00	39.96
0.07	0.00	0.08	0.00	9.00	9.39	10.48	49.35
0.08	0.00	0.09	0.00	10.48	10.14	12.21	59.49
0.09	0.00	0.11	0.00	12.21	10.36	14.22	69.85
0.11	0.00	0.13	0.01	14.22	8.99	16.57	78.83
0.13	0.01	0.15	0.01	16.57	7.20	19.31	86.03
0.15	0.02	0.17	0.03	19.31	5.34	22.49	91.37
0.17	0.04	0.20	0.08	22.49	3.66	26.20	95.03
0.20	0.11	0.23	0.19	26.20	2.31	30.53	97.34
0.23	0.25	0.27	0.44	30.53	1.30	35.56	98.64
0.27	0.37	0.31	0.81	35.56	0.64	41.43	99.28
0.31	0.37	0.36	1.17	41.43	0.28	48.27	99.56
0.36	0.29	0.42	1.47	48.27	0.12	56.23	99.68
0.42	0.26	0.49	1.73	56.23	0.07	65.51	99.75
0.49	0.27	0.58	2.00	65.51	0.08	76.32	99.83
0.58	0.25	0.67	2.24	76.32	0.08	88.91	99.91
0.67	0.29	0.78	2.53	88.91	0.06	103.58	99.97
0.78	0.37	0.91	2.90	103.58	0.03	120.67	100.00
0.91	0.46	1.06	3.36	120.67	0.00	140.58	100.00
1.06	0.58	1.24	3.94	140.58	0.00	163.77	100.00
1.24	0.72	1.44	4.67	163.77	0.00	190.80	100.00
1.44	0.85	1.68	5.52	190.80	0.00	222.28	100.00
1.68	0.95	1.95	6.47	222.28	0.00	258.95	100.00
1.95	1.02	2.28	7.50	258.95	0.00	301.68	100.00
2.28	1.10	2.65	8.59	301.68	0.00	351.46	100.00
2.65	1.26	3.09	9.85	351.46	0.00	409.45	100.00
3.09	1.56	3.60	11.40	409.45	0.00	477.01	100.00
3.60	2.07	4.19	13.47	477.01	0.00	555.71	100.00
4.19	2.81	4.88	16.28	555.71	0.00	647.41	100.00
4.88	3.83	5.69	20.11	647.41	0.00	754.23	100.00
5.69	5.12	6.63	25.23	754.23	0.00	878.67	100.00





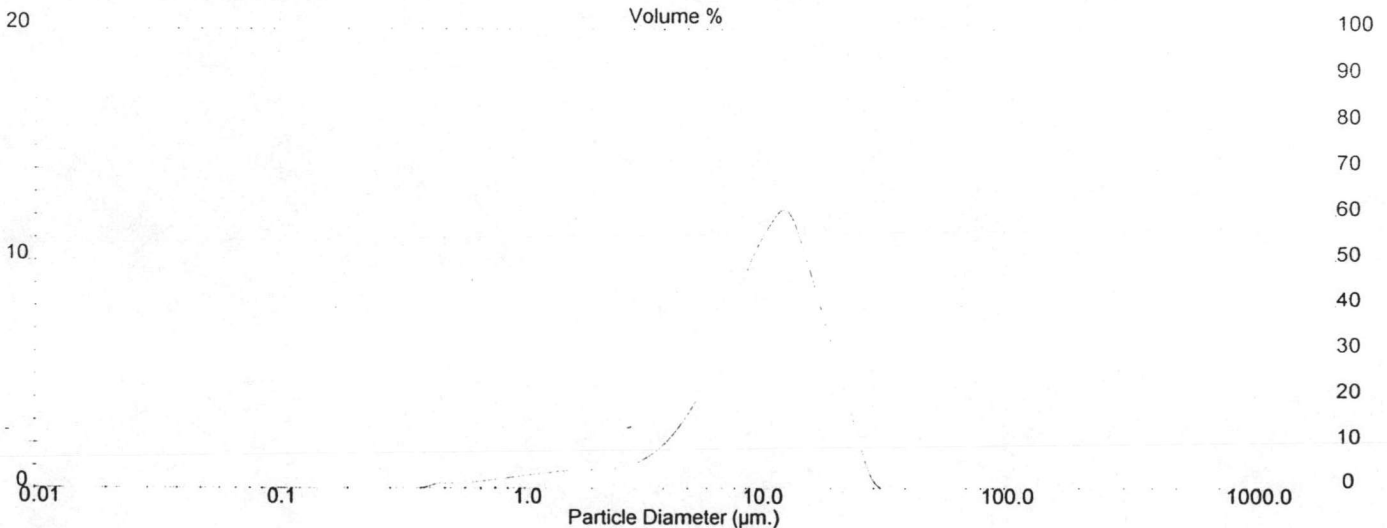
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 P75 500/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: (Result Not Saved)		Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 25.5 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.795 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0262 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9261 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.96 um	D (v, 0.5) = 10.86 um	D (v, 0.9) = 19.35 um
D [4, 3] = 11.33 um	D [3, 2] = 6.48 um	Span = 1.417E+00	Uniformity = 4.321E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.63	7.72	28.70
0.06	0.00	0.07	0.00	7.72	8.50	9.00	37.20
0.07	0.00	0.08	0.00	9.00	10.21	10.48	47.42
0.08	0.00	0.09	0.00	10.48	11.51	12.21	58.92
0.09	0.00	0.11	0.00	12.21	12.17	14.22	71.09
0.11	0.00	0.13	0.00	14.22	10.61	16.57	81.71
0.13	0.00	0.15	0.00	16.57	8.20	19.31	89.90
0.15	0.00	0.17	0.00	19.31	5.78	22.49	95.69
0.17	0.00	0.20	0.00	22.49	3.37	26.20	99.05
0.20	0.00	0.23	0.00	26.20	0.95	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.20	0.49	0.20	56.23	0.00	65.51	100.00
0.49	0.24	0.58	0.44	65.51	0.00	76.32	100.00
0.58	0.27	0.67	0.71	76.32	0.00	88.91	100.00
0.67	0.34	0.78	1.05	88.91	0.00	103.58	100.00
0.78	0.43	0.91	1.47	103.58	0.00	120.67	100.00
0.91	0.52	1.06	2.00	120.67	0.00	140.58	100.00
1.06	0.62	1.24	2.61	140.58	0.00	163.77	100.00
1.24	0.70	1.44	3.32	163.77	0.00	190.80	100.00
1.44	0.77	1.68	4.09	190.80	0.00	222.28	100.00
1.68	0.81	1.95	4.90	222.28	0.00	258.95	100.00
1.95	0.84	2.28	5.74	258.95	0.00	301.68	100.00
2.28	0.89	2.65	6.63	301.68	0.00	351.46	100.00
2.65	1.02	3.09	7.65	351.46	0.00	409.45	100.00
3.09	1.30	3.60	8.95	409.45	0.00	477.01	100.00
3.60	1.80	4.19	10.76	477.01	0.00	555.71	100.00
4.19	2.58	4.88	13.33	555.71	0.00	647.41	100.00
4.88	3.65	5.69	16.99	647.41	0.00	754.23	100.00
5.69	5.04	6.63	22.02	754.23	0.00	878.67	100.00



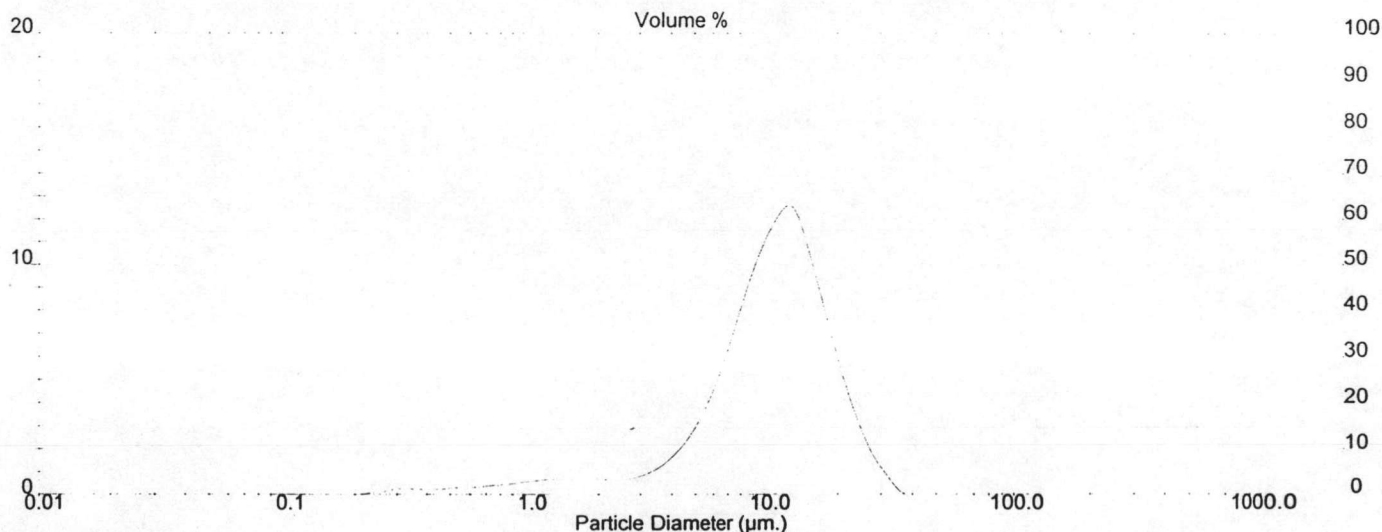
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 P15 750115	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 8	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 30ORF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 29.3 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.308 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0303 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0832 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.03 um	D (v, 0.5) = 10.98 um	D (v, 0.9) = 19.63 um
D [4, 3] = 11.53 um	D [3, 2] = 5.54 um	Span = 1.420E+00	Uniformity = 4.365E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	6.51	7.72	27.29
0.06	0.00	0.07	0.00	7.72	8.58	9.00	35.87
0.07	0.00	0.08	0.00	9.00	10.59	10.48	46.45
0.08	0.00	0.09	0.00	10.48	12.00	12.21	58.45
0.09	0.00	0.11	0.00	12.21	12.48	14.22	70.93
0.11	0.00	0.13	0.00	14.22	10.50	16.57	81.43
0.13	0.00	0.15	0.00	16.57	7.89	19.31	89.32
0.15	0.00	0.17	0.00	19.31	5.30	22.49	94.62
0.17	0.01	0.20	0.01	22.49	3.16	26.20	97.78
0.20	0.03	0.23	0.04	26.20	1.61	30.53	99.39
0.23	0.11	0.27	0.15	30.53	0.61	35.56	100.00
0.27	0.23	0.31	0.38	35.56	0.00	41.43	100.00
0.31	0.26	0.36	0.64	41.43	0.00	48.27	100.00
0.36	0.23	0.42	0.87	48.27	0.00	56.23	100.00
0.42	0.25	0.49	1.12	56.23	0.00	65.51	100.00
0.49	0.31	0.58	1.43	65.51	0.00	76.32	100.00
0.58	0.32	0.67	1.75	76.32	0.00	88.91	100.00
0.67	0.40	0.78	2.15	88.91	0.00	103.58	100.00
0.78	0.46	0.91	2.61	103.58	0.00	120.67	100.00
0.91	0.54	1.06	3.15	120.67	0.00	140.58	100.00
1.06	0.62	1.24	3.77	140.58	0.00	163.77	100.00
1.24	0.69	1.44	4.46	163.77	0.00	190.80	100.00
1.44	0.72	1.68	5.18	190.80	0.00	222.28	100.00
1.68	0.71	1.95	5.88	222.28	0.00	258.95	100.00
1.95	0.67	2.28	6.55	258.95	0.00	301.68	100.00
2.28	0.65	2.65	7.20	301.68	0.00	351.46	100.00
2.65	0.74	3.09	7.94	351.46	0.00	409.45	100.00
3.09	1.00	3.60	8.95	409.45	0.00	477.01	100.00
3.60	1.50	4.19	10.44	477.01	0.00	555.71	100.00
4.19	2.26	4.88	12.70	555.71	0.00	647.41	100.00
4.88	3.33	5.69	16.04	647.41	0.00	754.23	100.00
5.69	4.74	6.63	20.78	754.23	0.00	878.67	100.00



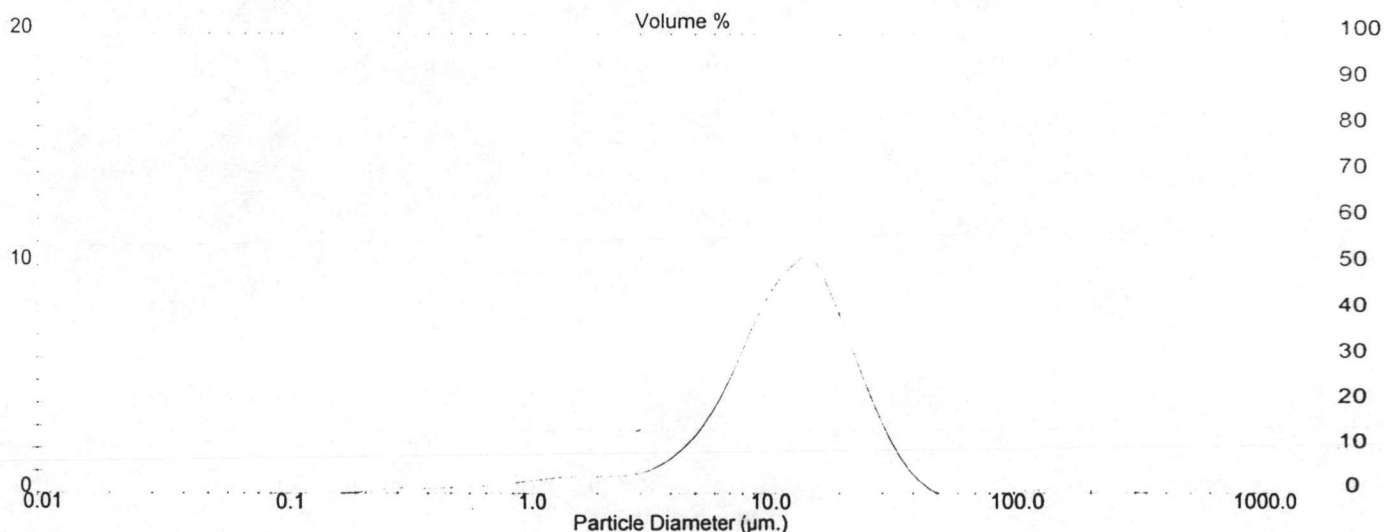
**Result: Analysis Report**

Sample Details		
Sample ID: 3 P 75 750/15	Run Number: 2	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 15	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.0 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.297 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0205 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0794 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.84 um	D (v, 0.5) = 12.39 um	D (v, 0.9) = 24.92 um
D [4, 3] = 14.98 um	D [3, 2] = 5.56 um	Span = 1.701E+00	Uniformity = 6.305E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.23	7.72	24.95
0.06	0.00	0.07	0.00	7.72	6.68	9.00	31.64
0.07	0.00	0.08	0.00	9.00	8.12	10.48	39.76
0.08	0.00	0.09	0.00	10.48	9.31	12.21	49.06
0.09	0.00	0.11	0.01	12.21	10.05	14.22	59.12
0.11	0.00	0.13	0.01	14.22	10.37	16.57	69.49
0.13	0.01	0.15	0.02	16.57	9.17	19.31	78.66
0.15	0.02	0.17	0.04	19.31	7.43	22.49	86.09
0.17	0.04	0.20	0.08	22.49	5.52	26.20	91.61
0.20	0.08	0.23	0.16	26.20	3.73	30.53	95.34
0.23	0.16	0.27	0.32	30.53	2.23	35.56	97.57
0.27	0.24	0.31	0.56	35.56	1.10	41.43	98.67
0.31	0.25	0.36	0.81	41.43	0.36	48.27	99.03
0.36	0.24	0.42	1.05	48.27	0.00	56.23	99.03
0.42	0.25	0.49	1.29	56.23	0.00	65.51	99.03
0.49	0.28	0.58	1.57	65.51	0.00	76.32	99.03
0.58	0.30	0.67	1.87	76.32	0.00	88.91	99.03
0.67	0.36	0.78	2.23	88.91	0.06	103.58	99.09
0.78	0.43	0.91	2.66	103.58	0.13	120.67	99.22
0.91	0.52	1.06	3.17	120.67	0.16	140.58	99.33
1.06	0.60	1.24	3.78	140.58	0.15	163.77	99.53
1.24	0.68	1.44	4.46	163.77	0.14	190.80	99.67
1.44	0.74	1.68	5.20	190.80	0.12	222.28	99.79
1.68	0.76	1.95	5.95	222.28	0.09	258.95	99.89
1.95	0.77	2.28	6.72	258.95	0.07	301.68	99.96
2.28	0.78	2.65	7.50	301.68	0.04	351.46	100.00
2.65	0.87	3.09	8.37	351.46	0.00	409.45	100.00
3.09	1.07	3.60	9.44	409.45	0.00	477.01	100.00
3.60	1.45	4.19	10.88	477.01	0.00	555.71	100.00
4.19	2.03	4.88	12.92	555.71	0.00	647.41	100.00
4.88	2.86	5.69	15.78	647.41	0.00	754.23	100.00
5.69	3.94	6.63	19.72	754.23	0.00	878.67	100.00





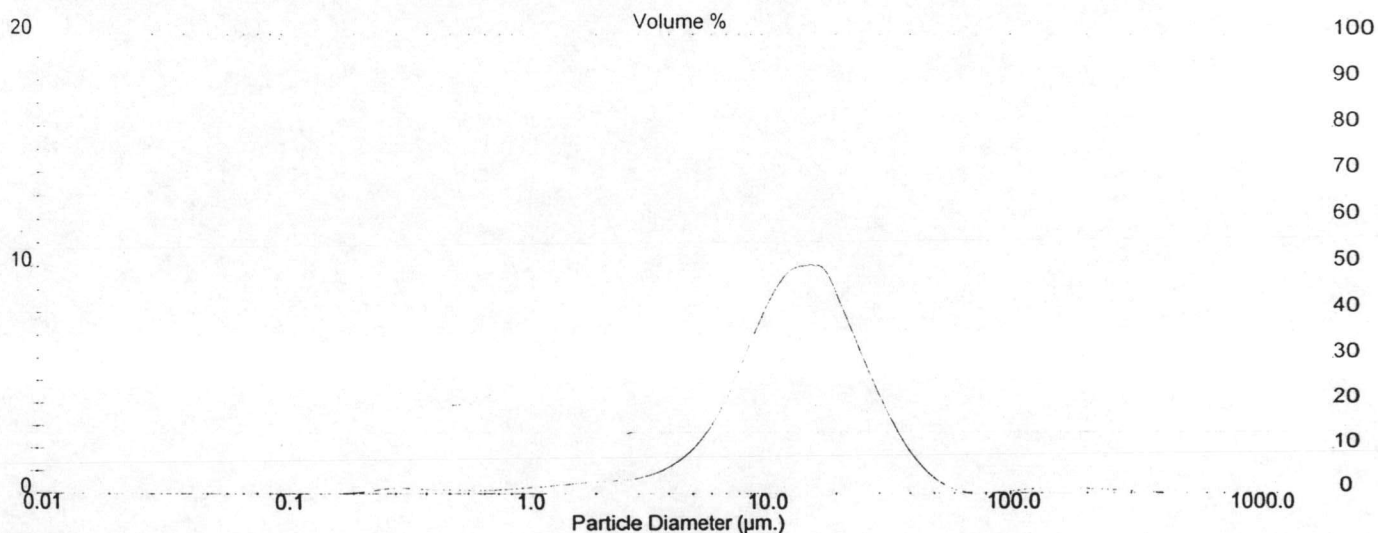
### Result: Analysis Report

Sample Details		
Sample ID: 5 P 15 750115	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 3	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.3 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.260 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0257 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8894 sq. m / g
Mean Diameters:	D (v, 0.1) = 5.26 um	D (v, 0.5) = 14.01 um	D (v, 0.9) = 29.61 um
D [4, 3] = 18.42 um	D [3, 2] = 6.75 um	Span = 1.738E+00	Uniformity = 7.103E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.39	7.72	18.82
0.06	0.00	0.07	0.00	7.72	5.88	9.00	24.70
0.07	0.00	0.08	0.00	9.00	7.51	10.48	32.22
0.08	0.00	0.09	0.00	10.48	8.95	12.21	41.16
0.09	0.00	0.11	0.00	12.21	9.83	14.22	51.00
0.11	0.00	0.13	0.01	14.22	10.04	16.57	61.04
0.13	0.01	0.15	0.01	16.57	9.85	19.31	70.89
0.15	0.01	0.17	0.03	19.31	8.36	22.49	79.25
0.17	0.03	0.20	0.06	22.49	6.65	26.20	85.90
0.20	0.08	0.23	0.14	26.20	4.96	30.53	90.86
0.23	0.17	0.27	0.30	30.53	3.43	35.56	94.29
0.27	0.25	0.31	0.55	35.56	2.16	41.43	96.45
0.31	0.25	0.36	0.81	41.43	1.20	48.27	97.64
0.36	0.21	0.42	1.01	48.27	0.55	56.23	98.19
0.42	0.19	0.49	1.20	56.23	0.18	65.51	98.37
0.49	0.19	0.58	1.39	65.51	0.02	76.32	98.39
0.58	0.16	0.67	1.56	76.32	0.01	88.91	98.40
0.67	0.17	0.78	1.73	88.91	0.08	103.58	98.48
0.78	0.20	0.91	1.93	103.58	0.16	120.67	98.64
0.91	0.25	1.06	2.18	120.67	0.22	140.58	98.86
1.06	0.30	1.24	2.47	140.58	0.24	163.77	99.10
1.24	0.36	1.44	2.83	163.77	0.23	190.80	99.33
1.44	0.43	1.68	3.26	190.80	0.21	222.28	99.54
1.68	0.49	1.95	3.75	222.28	0.17	258.95	99.71
1.95	0.54	2.28	4.29	258.95	0.13	301.68	99.84
2.28	0.59	2.65	4.88	301.68	0.10	351.46	99.94
2.65	0.66	3.09	5.54	351.46	0.06	409.45	100.00
3.09	0.82	3.60	6.36	409.45	0.00	477.01	100.00
3.60	1.10	4.19	7.46	477.01	0.00	555.71	100.00
4.19	1.56	4.88	9.02	555.71	0.00	647.41	100.00
4.88	2.24	5.69	11.26	647.41	0.00	754.23	100.00
5.69	3.17	6.63	14.44	754.23	0.00	878.67	100.00



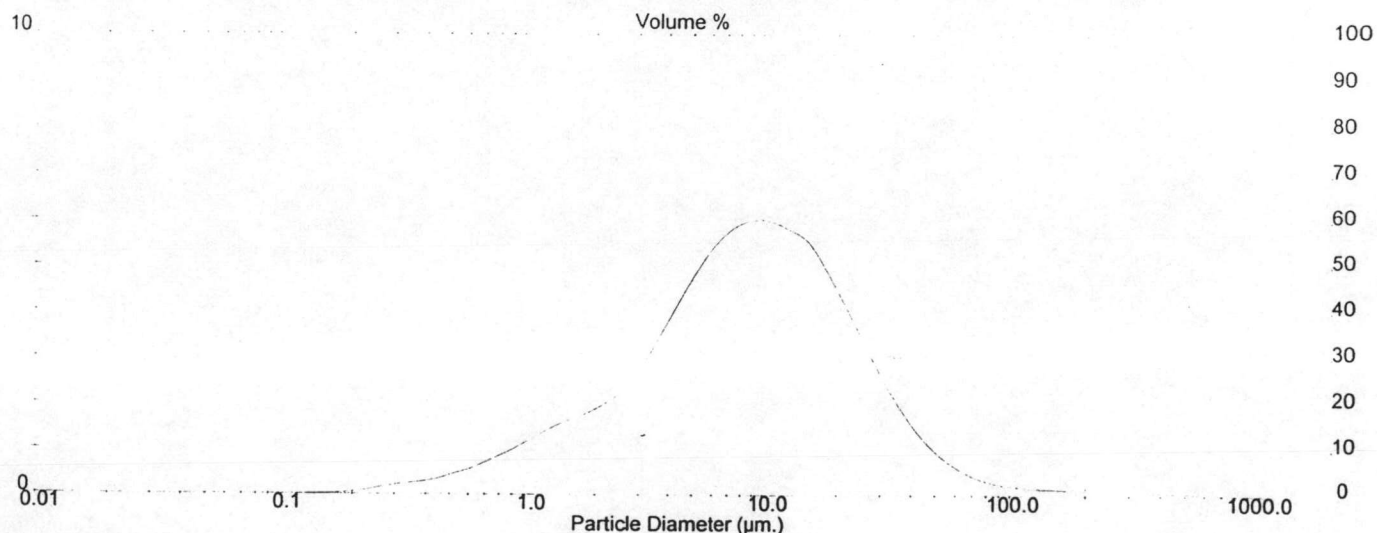
## Result: Analysis Report

Sample Details		
Sample ID: 1-5 P50 250/15	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 13	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.6 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.204 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0118 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.5549 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.72 um	D (v, 0.5) = 8.70 um	D (v, 0.9) = 30.10 um
D [4, 3] = 18.99 um	D [3, 2] = 3.86 um	Span = 3.261E+00	Uniformity = 1.693E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.75	7.72	45.35
0.06	0.00	0.07	0.00	7.72	5.94	9.00	51.29
0.07	0.00	0.08	0.00	9.00	6.00	10.48	57.28
0.08	0.00	0.09	0.01	10.48	5.93	12.21	63.22
0.09	0.01	0.11	0.02	12.21	5.76	14.22	68.98
0.11	0.01	0.13	0.02	14.22	5.52	16.57	74.50
0.13	0.02	0.15	0.04	16.57	4.97	19.31	79.47
0.15	0.03	0.17	0.07	19.31	4.30	22.49	83.77
0.17	0.05	0.20	0.11	22.49	3.58	26.20	87.35
0.20	0.08	0.23	0.20	26.20	2.88	30.53	90.24
0.23	0.14	0.27	0.34	30.53	2.24	35.56	92.48
0.27	0.21	0.31	0.55	35.56	1.69	41.43	94.18
0.31	0.26	0.36	0.80	41.43	1.24	48.27	95.41
0.36	0.30	0.42	1.10	48.27	0.88	56.23	96.30
0.42	0.37	0.49	1.47	56.23	0.61	65.51	96.91
0.49	0.48	0.58	1.95	65.51	0.42	76.32	97.33
0.58	0.59	0.67	2.54	76.32	0.30	88.91	97.63
0.67	0.75	0.78	3.29	88.91	0.23	103.58	97.86
0.78	0.92	0.91	4.21	103.58	0.19	120.67	98.04
0.91	1.11	1.06	5.31	120.67	0.17	140.58	98.21
1.06	1.30	1.24	6.61	140.58	0.16	163.77	98.37
1.24	1.49	1.44	8.10	163.77	0.16	190.80	98.54
1.44	1.63	1.68	9.73	190.80	0.17	222.28	98.71
1.68	1.77	1.95	11.50	222.28	0.18	258.95	98.88
1.95	1.95	2.28	13.44	258.95	0.18	301.68	99.06
2.28	2.20	2.65	15.64	301.68	0.17	351.46	99.23
2.65	2.57	3.09	18.21	351.46	0.17	409.45	99.40
3.09	3.07	3.60	21.28	409.45	0.16	477.01	99.55
3.60	3.67	4.19	24.95	477.01	0.15	555.71	99.70
4.19	4.31	4.88	29.26	555.71	0.14	647.41	99.84
4.88	4.92	5.69	34.18	647.41	0.11	754.23	99.94
5.69	5.42	6.63	39.60	754.23	0.06	878.67	100.00



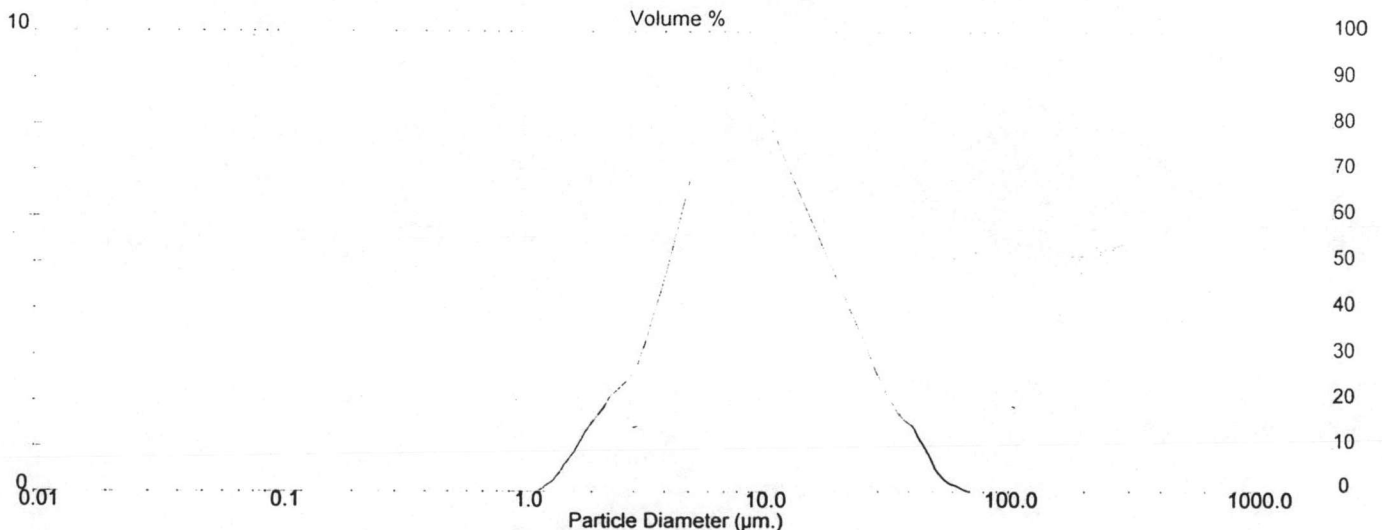
**Result: Analysis Report**

Sample Details		
Sample ID: 1.5 p50 500/15	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 7	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 8.8 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 5.737 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0088 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8057 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.90 um	D (v, 0.5) = 8.84 um	D (v, 0.9) = 22.43 um
D [4, 3] = 11.24 um	D [3, 2] = 7.45 um	Span = 2.096E+00	Uniformity = 6.325E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	8.75	7.72	42.12
0.06	0.00	0.07	0.00	7.72	8.87	9.00	50.99
0.07	0.00	0.08	0.00	9.00	8.40	10.48	59.38
0.08	0.00	0.09	0.00	10.48	7.76	12.21	67.15
0.09	0.00	0.11	0.00	12.21	6.95	14.22	74.10
0.11	0.00	0.13	0.00	14.22	6.14	16.57	80.24
0.13	0.00	0.15	0.00	16.57	5.33	19.31	85.56
0.15	0.00	0.17	0.00	19.31	4.51	22.49	90.08
0.17	0.00	0.20	0.00	22.49	3.70	26.20	93.78
0.20	0.00	0.23	0.00	26.20	2.89	30.53	96.66
0.23	0.00	0.27	0.00	30.53	2.07	35.56	98.74
0.27	0.00	0.31	0.00	35.56	1.26	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.00	0.49	0.00	56.23	0.00	65.51	100.00
0.49	0.00	0.58	0.00	65.51	0.00	76.32	100.00
0.58	0.00	0.67	0.00	76.32	0.00	88.91	100.00
0.67	0.00	0.78	0.00	88.91	0.00	103.58	100.00
0.78	0.00	0.91	0.00	103.58	0.00	120.67	100.00
0.91	0.00	1.06	0.00	120.67	0.00	140.58	100.00
1.06	0.00	1.24	0.00	140.58	0.00	163.77	100.00
1.24	0.00	1.44	0.00	163.77	0.00	190.80	100.00
1.44	0.00	1.68	0.00	190.80	0.00	222.28	100.00
1.68	0.00	1.95	0.00	222.28	0.00	258.95	100.00
1.95	0.00	2.28	0.01	258.95	0.00	301.68	100.00
2.28	2.11	2.65	2.11	301.68	0.00	351.46	100.00
2.65	2.45	3.09	4.56	351.46	0.00	409.45	100.00
3.09	3.27	3.60	7.83	409.45	0.00	477.01	100.00
3.60	4.40	4.19	12.23	477.01	0.00	555.71	100.00
4.19	5.75	4.88	17.99	555.71	0.00	647.41	100.00
4.88	7.17	5.69	25.16	647.41	0.00	754.23	100.00
5.69	8.22	6.63	33.37	754.23	0.00	878.67	100.00





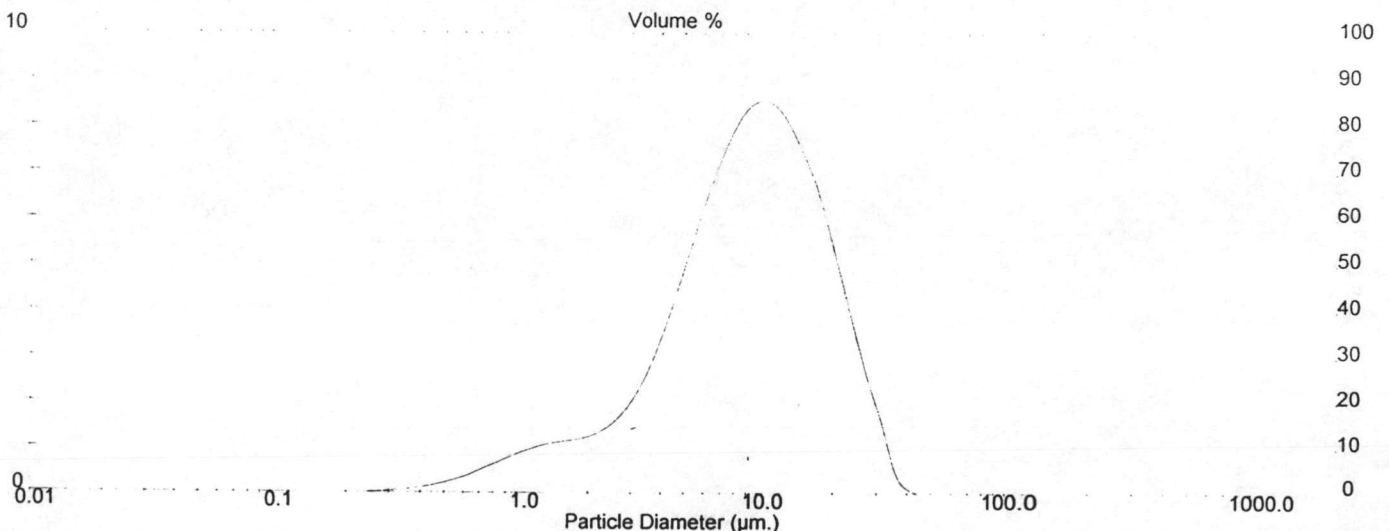
### Result: Analysis Report

Sample Details		
Sample ID: 1.5 P50 750/15	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 50	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.5 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 3.179 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0191 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1734 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.59 um	D (v, 0.5) = 9.17 um	D (v, 0.9) = 20.60 um
D [4, 3] = 10.62 um	D [3, 2] = 5.11 um	Span = 1.963E+00	Uniformity = 5.985E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	7.34	7.72	40.84
0.06	0.00	0.07	0.00	7.72	8.08	9.00	48.92
0.07	0.00	0.08	0.00	9.00	8.48	10.48	57.40
0.08	0.00	0.09	0.00	10.48	8.49	12.21	65.90
0.09	0.00	0.11	0.00	12.21	8.09	14.22	73.99
0.11	0.00	0.13	0.00	14.22	7.34	16.57	81.33
0.13	0.00	0.15	0.00	16.57	6.39	19.31	87.72
0.15	0.00	0.17	0.00	19.31	4.97	22.49	92.69
0.17	0.00	0.20	0.00	22.49	3.61	26.20	96.30
0.20	0.00	0.23	0.00	26.20	2.34	30.53	98.63
0.23	0.01	0.27	0.02	30.53	1.17	35.56	99.81
0.27	0.04	0.31	0.05	35.56	0.19	41.43	100.00
0.31	0.07	0.36	0.12	41.43	0.00	48.27	100.00
0.36	0.11	0.42	0.23	48.27	0.00	56.23	100.00
0.42	0.18	0.49	0.41	56.23	0.00	65.51	100.00
0.49	0.27	0.58	0.68	65.51	0.00	76.32	100.00
0.58	0.38	0.67	1.06	76.32	0.00	88.91	100.00
0.67	0.53	0.78	1.59	88.91	0.00	103.58	100.00
0.78	0.68	0.91	2.27	103.58	0.00	120.67	100.00
0.91	0.84	1.06	3.11	120.67	0.00	140.58	100.00
1.06	0.97	1.24	4.08	140.58	0.00	163.77	100.00
1.24	1.07	1.44	5.16	163.77	0.00	190.80	100.00
1.44	1.13	1.68	6.29	190.80	0.00	222.28	100.00
1.68	1.19	1.95	7.48	222.28	0.00	258.95	100.00
1.95	1.28	2.28	8.76	258.95	0.00	301.68	100.00
2.28	1.48	2.65	10.24	301.68	0.00	351.46	100.00
2.65	1.84	3.09	12.08	351.46	0.00	409.45	100.00
3.09	2.40	3.60	14.48	409.45	0.00	477.01	100.00
3.60	3.19	4.19	17.67	477.01	0.00	555.71	100.00
4.19	4.17	4.88	21.84	555.71	0.00	647.41	100.00
4.88	5.28	5.69	27.12	647.41	0.00	754.23	100.00
5.69	6.38	6.63	33.50	754.23	0.00	878.67	100.00



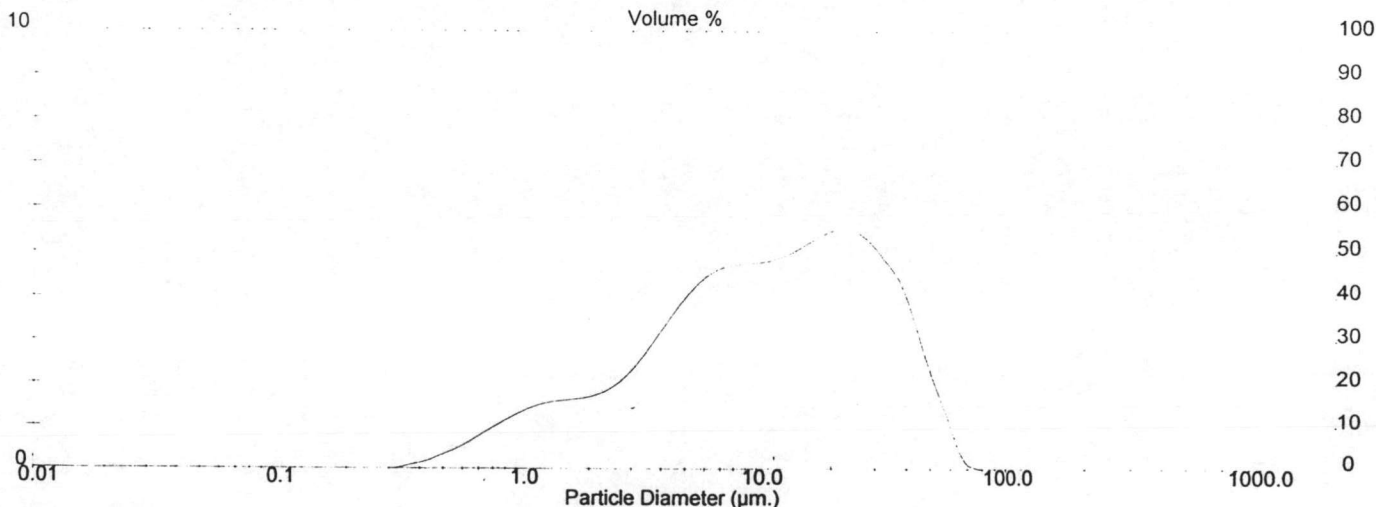
**Result: Analysis Report**

Sample Details		
Sample ID: 3 P 50 750/15	Run Number: 5	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 13	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 21.4 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 0.618 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		
	Killed Result Channels: < 0.05 um; > 120.67 um.		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0195 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.2657 sq. m / g
Mean Diameters:	D (v, 0.1) = 1.83 um	D (v, 0.5) = 10.99 um	D (v, 0.9) = 35.95 um
D [4, 3] = 15.45 um	D [3, 2] = 4.74 um	Span = 3.105E+00	Uniformity = 9.538E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.65	7.72	39.05
0.06	0.00	0.07	0.00	7.72	4.72	9.00	43.77
0.07	0.00	0.08	0.00	9.00	4.74	10.48	48.52
0.08	0.00	0.09	0.00	10.48	4.80	12.21	53.32
0.09	0.00	0.11	0.00	12.21	4.93	14.22	58.24
0.11	0.00	0.13	0.00	14.22	5.12	16.57	63.37
0.13	0.00	0.15	0.00	16.57	5.34	19.31	68.70
0.15	0.00	0.17	0.00	19.31	5.48	22.49	74.19
0.17	0.00	0.20	0.00	22.49	5.47	26.20	79.65
0.20	0.00	0.23	0.00	26.20	5.24	30.53	84.89
0.23	0.00	0.27	0.00	30.53	4.79	35.56	89.68
0.27	0.00	0.31	0.00	35.56	4.22	41.43	93.90
0.31	0.05	0.36	0.05	41.43	3.12	48.27	97.02
0.36	0.13	0.42	0.18	48.27	1.96	56.23	98.98
0.42	0.25	0.49	0.43	56.23	0.91	65.51	99.90
0.49	0.40	0.58	0.83	65.51	0.10	76.32	100.00
0.58	0.59	0.67	1.42	76.32	0.00	88.91	100.00
0.67	0.82	0.78	2.24	88.91	0.00	103.58	100.00
0.78	1.04	0.91	3.28	103.58	0.00	120.67	100.00
0.91	1.25	1.06	4.52	120.67	0.00	140.58	100.00
1.06	1.42	1.24	5.94	140.58	0.00	163.77	100.00
1.24	1.54	1.44	7.48	163.77	0.00	190.80	100.00
1.44	1.60	1.68	9.08	190.80	0.00	222.28	100.00
1.68	1.64	1.95	10.72	222.28	0.00	258.95	100.00
1.95	1.72	2.28	12.43	258.95	0.00	301.68	100.00
2.28	1.88	2.65	14.31	301.68	0.00	351.46	100.00
2.65	2.18	3.09	16.49	351.46	0.00	409.45	100.00
3.09	2.60	3.60	19.09	409.45	0.00	477.01	100.00
3.60	3.11	4.19	22.19	477.01	0.00	555.71	100.00
4.19	3.64	4.88	25.83	555.71	0.00	647.41	100.00
4.88	4.11	5.69	29.95	647.41	0.00	754.23	100.00
5.69	4.46	6.63	34.41	754.23	0.00	878.67	100.00



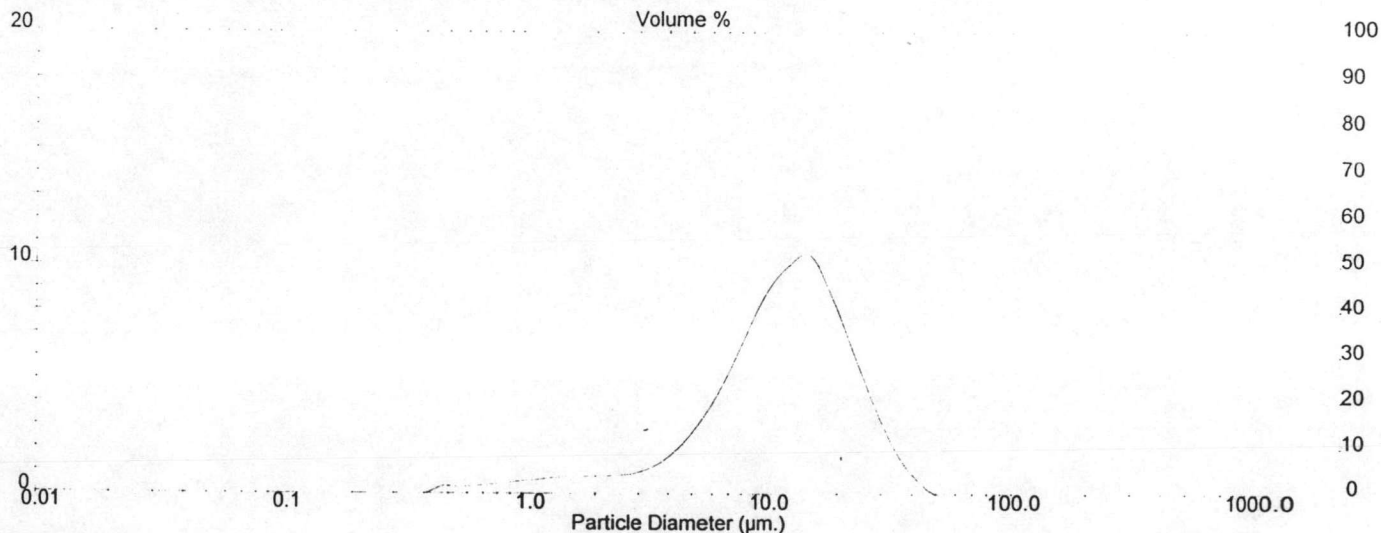
### Result: Analysis Report

Sample Details		
Sample ID: 5 P50 750115	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 16	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 20.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.497 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0213 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8887 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.11 um	D (v, 0.5) = 12.32 um	D (v, 0.9) = 24.35 um
D [4, 3] = 13.50 um	D [3, 2] = 6.75 um	Span = 1.642E+00	Uniformity = 5.078E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.42	7.72	24.88
0.06	0.00	0.07	0.00	7.72	6.87	9.00	31.75
0.07	0.00	0.08	0.00	9.00	8.26	10.48	40.01
0.08	0.00	0.09	0.00	10.48	9.39	12.21	49.41
0.09	0.00	0.11	0.00	12.21	10.11	14.22	59.52
0.11	0.00	0.13	0.00	14.22	10.46	16.57	69.98
0.13	0.00	0.15	0.00	16.57	9.29	19.31	79.27
0.15	0.00	0.17	0.00	19.31	7.56	22.49	86.84
0.17	0.00	0.20	0.00	22.49	5.63	26.20	92.47
0.20	0.00	0.23	0.00	26.20	3.80	30.53	96.27
0.23	0.00	0.27	0.00	30.53	2.25	35.56	98.52
0.27	0.00	0.31	0.00	35.56	1.11	41.43	99.63
0.31	0.00	0.36	0.00	41.43	0.37	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.28	0.49	0.28	56.23	0.00	65.51	100.00
0.49	0.31	0.58	0.58	65.51	0.00	76.32	100.00
0.58	0.33	0.67	0.91	76.32	0.00	88.91	100.00
0.67	0.38	0.78	1.29	88.91	0.00	103.58	100.00
0.78	0.46	0.91	1.75	103.58	0.00	120.67	100.00
0.91	0.54	1.06	2.30	120.67	0.00	140.58	100.00
1.06	0.62	1.24	2.92	140.58	0.00	163.77	100.00
1.24	0.70	1.44	3.62	163.77	0.00	190.80	100.00
1.44	0.75	1.68	4.37	190.80	0.00	222.28	100.00
1.68	0.76	1.95	5.13	222.28	0.00	258.95	100.00
1.95	0.78	2.28	5.91	258.95	0.00	301.68	100.00
2.28	0.80	2.65	6.71	301.68	0.00	351.46	100.00
2.65	0.90	3.09	7.61	351.46	0.00	409.45	100.00
3.09	1.12	3.60	8.72	409.45	0.00	477.01	100.00
3.60	1.51	4.19	10.23	477.01	0.00	555.71	100.00
4.19	2.13	4.88	12.36	555.71	0.00	647.41	100.00
4.88	2.99	5.69	15.35	647.41	0.00	754.23	100.00
5.69	4.11	6.63	19.46	754.23	0.00	878.67	100.00





**APPENDIX VIII**

**PARTICLE SIZE AND SIZE DISTRIBUTION CURVE OF  
CHITOSAN MICROPARTICLES KEPT AT 40°C FOR 1 MONTH**

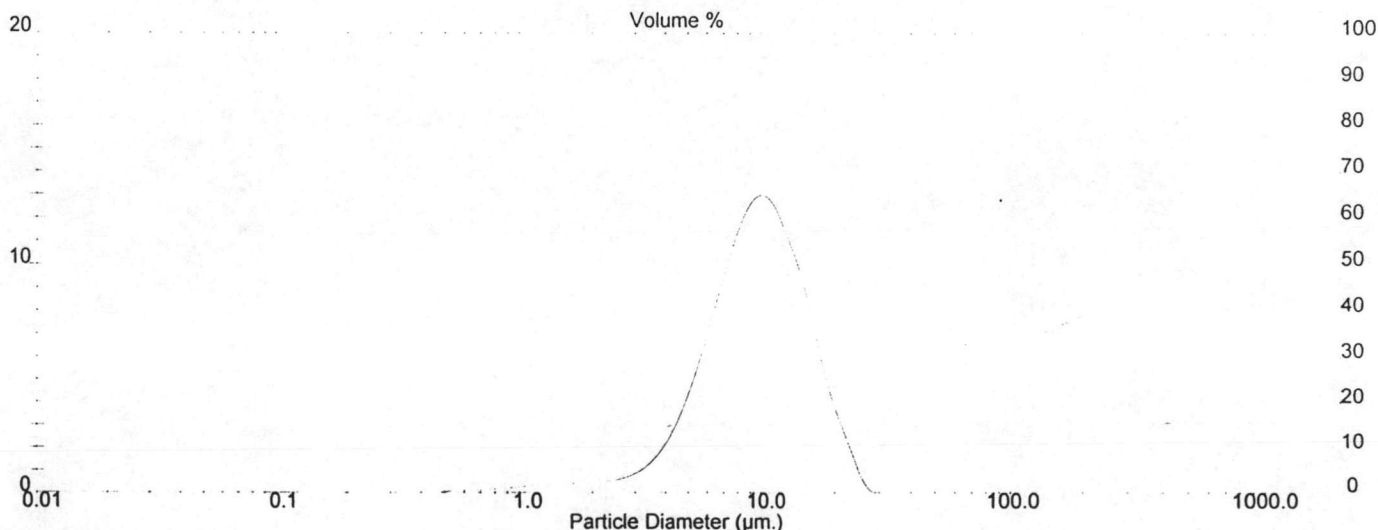
**Result: Analysis Report**

Sample Details		
Sample ID: LMWCS 750 / 1 A	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PAR1	Record Number: 2	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 8.7 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 4.947 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0088 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8198 sq. m / g
Mean Diameters:	D (v, 0.1) = 4.81 um	D (v, 0.5) = 9.63 um	D (v, 0.9) = 16.70 um
D [4, 3] = 10.25 um	D [3, 2] = 7.32 um	Span = 1.235E+00	Uniformity = 3.840E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	9.77	7.72	32.48
0.06	0.00	0.07	0.00	7.72	11.84	9.00	44.32
0.07	0.00	0.08	0.00	9.00	12.90	10.48	57.22
0.08	0.00	0.09	0.00	10.48	12.57	12.21	69.78
0.09	0.00	0.11	0.00	12.21	11.01	14.22	80.80
0.11	0.00	0.13	0.00	14.22	8.84	16.57	89.64
0.13	0.00	0.15	0.00	16.57	5.71	19.31	95.35
0.15	0.00	0.17	0.00	19.31	3.28	22.49	98.63
0.17	0.00	0.20	0.00	22.49	1.31	26.20	99.94
0.20	0.00	0.23	0.00	26.20	0.06	30.53	100.00
0.23	0.00	0.27	0.00	30.53	0.00	35.56	100.00
0.27	0.00	0.31	0.00	35.56	0.00	41.43	100.00
0.31	0.00	0.36	0.00	41.43	0.00	48.27	100.00
0.36	0.00	0.42	0.00	48.27	0.00	56.23	100.00
0.42	0.00	0.49	0.00	56.23	0.00	65.51	100.00
0.49	0.10	0.58	0.10	65.51	0.00	76.32	100.00
0.58	0.11	0.67	0.21	76.32	0.00	88.91	100.00
0.67	0.14	0.78	0.35	88.91	0.00	103.58	100.00
0.78	0.19	0.91	0.54	103.58	0.00	120.67	100.00
0.91	0.25	1.06	0.79	120.67	0.00	140.58	100.00
1.06	0.31	1.24	1.10	140.58	0.00	163.77	100.00
1.24	0.37	1.44	1.47	163.77	0.00	190.80	100.00
1.44	0.41	1.68	1.88	190.80	0.00	222.28	100.00
1.68	0.43	1.95	2.31	222.28	0.00	258.95	100.00
1.95	0.47	2.28	2.78	258.95	0.00	301.68	100.00
2.28	0.55	2.65	3.33	301.68	0.00	351.46	100.00
2.65	0.75	3.09	4.08	351.46	0.00	409.45	100.00
3.09	1.17	3.60	5.25	409.45	0.00	477.01	100.00
3.60	1.94	4.19	7.19	477.01	0.00	555.71	100.00
4.19	3.20	4.88	10.39	555.71	0.00	647.41	100.00
4.88	5.01	5.69	15.40	647.41	0.00	754.23	100.00
5.69	7.31	6.63	22.71	754.23	0.00	878.67	100.00



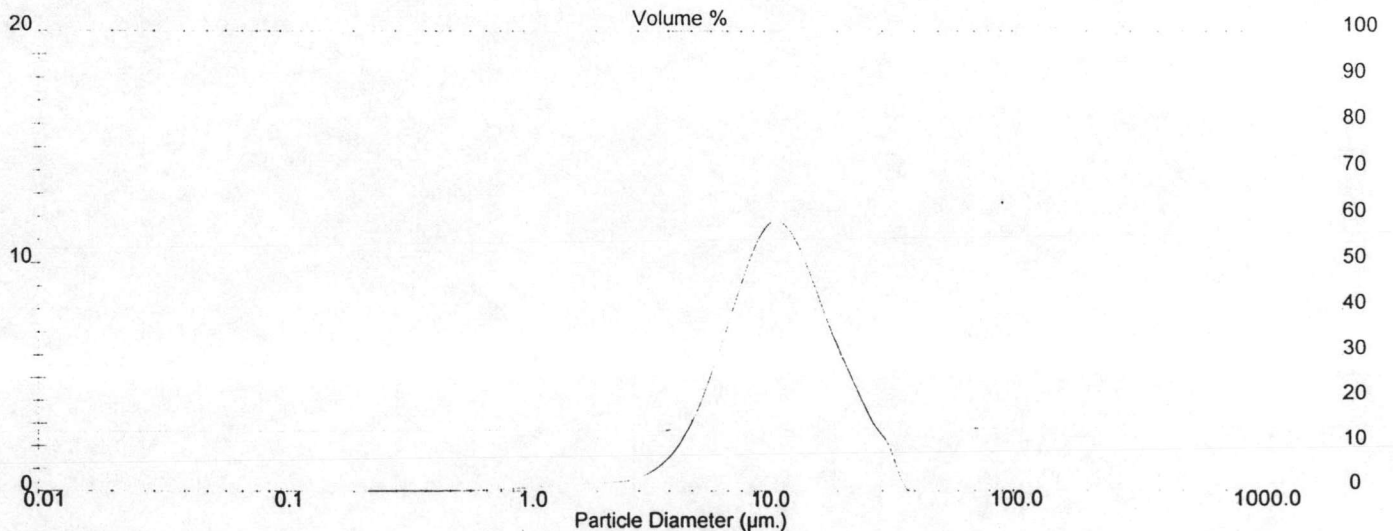
**Result: Analysis Report**

Sample Details		
Sample ID: LMWCS 750 / 1B	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 40	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 21.1 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000); Dispersant R.I. = 1.3300]		Residual: 4.208 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0268 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.7524 sq. m / g
Mean Diameters:	D (v, 0.1) = 5.47 um	D (v, 0.5) = 11.19 um	D (v, 0.9) = 21.66 um
D [4, 3] = 12.47 um	D [3, 2] = 7.97 um	Span = 1.446E+00	Uniformity = 4.425E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	7.55	7.72	24.03
0.06	0.00	0.07	0.00	7.72	9.66	9.00	33.69
0.07	0.00	0.08	0.00	9.00	11.24	10.48	44.93
0.08	0.00	0.09	0.01	10.48	11.81	12.21	56.74
0.09	0.00	0.11	0.01	12.21	11.21	14.22	67.95
0.11	0.01	0.13	0.02	14.22	9.68	16.57	77.63
0.13	0.01	0.15	0.03	16.57	7.74	19.31	85.37
0.15	0.01	0.17	0.04	19.31	5.94	22.49	91.31
0.17	0.02	0.20	0.06	22.49	4.30	26.20	95.61
0.20	0.02	0.23	0.08	26.20	2.83	30.53	98.44
0.23	0.03	0.27	0.12	30.53	1.56	35.56	100.00
0.27	0.04	0.31	0.15	35.56	0.00	41.43	100.00
0.31	0.04	0.36	0.19	41.43	0.00	48.27	100.00
0.36	0.04	0.42	0.23	48.27	0.00	56.23	100.00
0.42	0.04	0.49	0.27	56.23	0.00	65.51	100.00
0.49	0.05	0.58	0.32	65.51	0.00	76.32	100.00
0.58	0.06	0.67	0.38	76.32	0.00	88.91	100.00
0.67	0.08	0.78	0.46	88.91	0.00	103.58	100.00
0.78	0.12	0.91	0.58	103.58	0.00	120.67	100.00
0.91	0.16	1.06	0.74	120.67	0.00	140.58	100.00
1.06	0.20	1.24	0.94	140.58	0.00	163.77	100.00
1.24	0.25	1.44	1.19	163.77	0.00	190.80	100.00
1.44	0.28	1.68	1.47	190.80	0.00	222.28	100.00
1.68	0.31	1.95	1.77	222.28	0.00	258.95	100.00
1.95	0.34	2.28	2.11	258.95	0.00	301.68	100.00
2.28	0.40	2.65	2.51	301.68	0.00	351.46	100.00
2.65	0.54	3.09	3.04	351.46	0.00	409.45	100.00
3.09	0.82	3.60	3.86	409.45	0.00	477.01	100.00
3.60	1.35	4.19	5.22	477.01	0.00	555.71	100.00
4.19	2.25	4.88	7.46	555.71	0.00	647.41	100.00
4.88	3.60	5.69	11.06	647.41	0.00	754.23	100.00
5.69	5.41	6.63	16.48	754.23	0.00	878.67	100.00





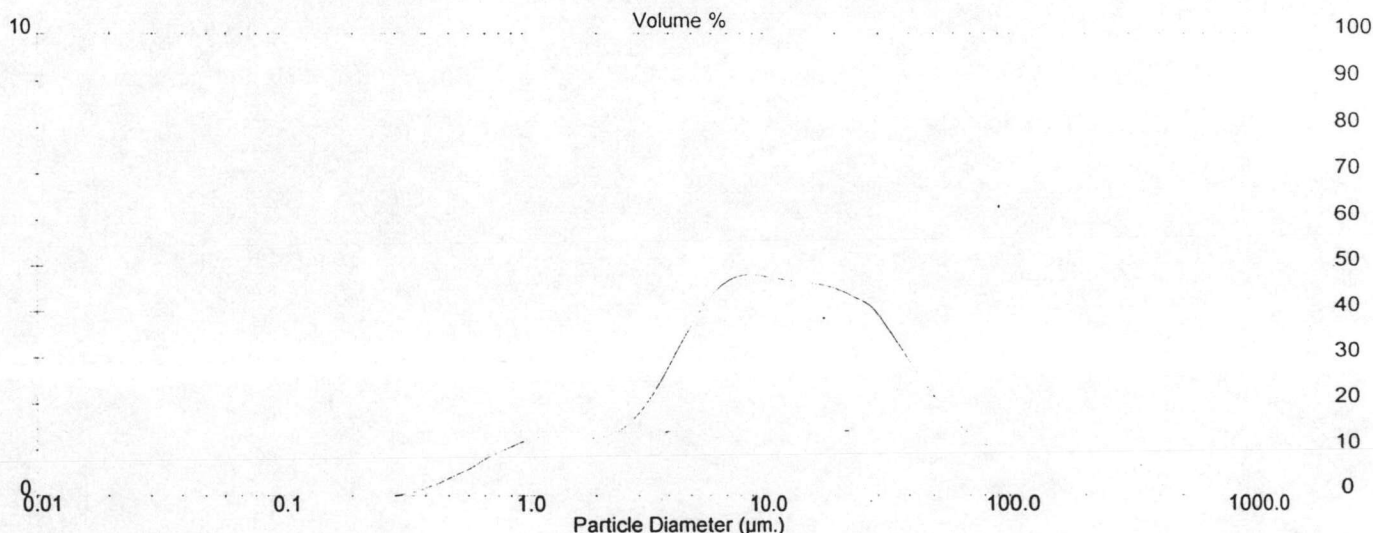
Result: Analysis Report

Sample Details		
Sample ID: LMWCS 750/2A	Run Number: 4	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 24	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 26.9 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.399 %
Analysis Model: Polydisperse			
Modifications: Active -	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0233 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1709 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.02 um	D (v, 0.5) = 12.42 um	D (v, 0.9) = 72.07 um
D [4, 3] = 32.46 um	D [3, 2] = 5.12 um	Span = 5.639E+00	Uniformity = 2.159E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.68	7.72	35.14
0.06	0.00	0.07	0.00	7.72	4.80	9.00	39.94
0.07	0.00	0.08	0.00	9.00	4.79	10.48	44.73
0.08	0.00	0.09	0.00	10.48	4.74	12.21	49.47
0.09	0.00	0.11	0.00	12.21	4.68	14.22	54.15
0.11	0.00	0.13	0.00	14.22	4.64	16.57	58.79
0.13	0.00	0.15	0.00	16.57	4.58	19.31	63.37
0.15	0.00	0.17	0.00	19.31	4.48	22.49	67.84
0.17	0.00	0.20	0.00	22.49	4.31	26.20	72.15
0.20	0.00	0.23	0.00	26.20	4.10	30.53	76.25
0.23	0.00	0.27	0.00	30.53	3.62	35.56	79.87
0.27	0.00	0.31	0.00	35.56	3.08	41.43	82.95
0.31	0.06	0.36	0.06	41.43	2.54	48.27	85.49
0.36	0.16	0.42	0.23	48.27	2.04	56.23	87.53
0.42	0.29	0.49	0.52	56.23	1.62	65.51	89.16
0.49	0.45	0.58	0.97	65.51	1.30	76.32	90.45
0.58	0.63	0.67	1.61	76.32	1.06	88.91	91.52
0.67	0.84	0.78	2.45	88.91	0.92	103.58	92.43
0.78	1.00	0.91	3.45	103.58	0.84	120.67	93.28
0.91	1.16	1.06	4.61	120.67	0.83	140.58	94.11
1.06	1.27	1.24	5.88	140.58	0.87	163.77	94.98
1.24	1.31	1.44	7.19	163.77	0.94	190.80	95.91
1.44	1.29	1.68	8.48	190.80	0.99	222.28	96.91
1.68	1.25	1.95	9.73	222.28	1.00	258.95	97.90
1.95	1.28	2.28	11.01	258.95	0.90	301.68	98.80
2.28	1.40	2.65	12.41	301.68	0.69	351.46	99.49
2.65	1.68	3.09	14.09	351.46	0.40	409.45	99.89
3.09	2.11	3.60	16.20	409.45	0.11	477.01	100.00
3.60	2.67	4.19	18.87	477.01	0.00	555.71	100.00
4.19	3.30	4.88	22.16	555.71	0.00	647.41	100.00
4.88	3.90	5.69	26.07	647.41	0.00	754.23	100.00
5.69	4.39	6.63	30.46	754.23	0.00	878.67	100.00



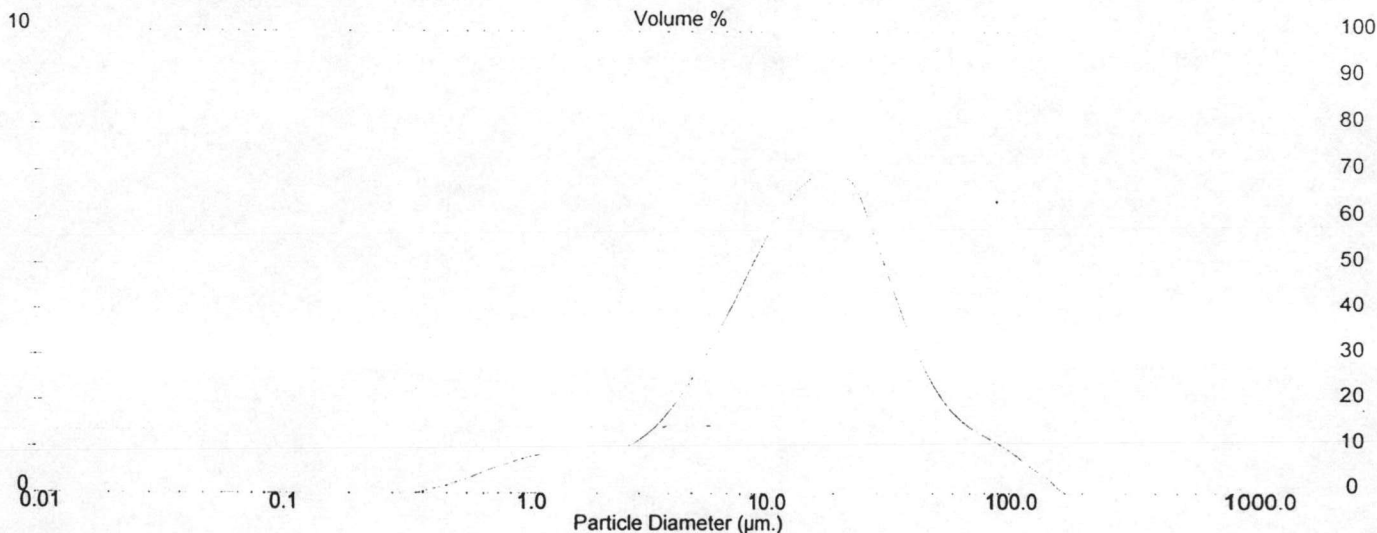
**Result: Analysis Report**

Sample Details		
Sample ID: LMWCS 750 / 3 A	Run Number: 6	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 18	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkom University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 19.4 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.866 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --			

Result Statistics			
Distribution Type: Volume	Concentration = 0.0211 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.8552 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.48 um	D (v, 0.5) = 15.52 um	D (v, 0.9) = 45.67 um
D [4, 3] = 21.74 um	D [3, 2] = 7.02 um	Span = 2.718E+00	Uniformity = 8.907E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	3.95	7.72	24.07
0.06	0.00	0.07	0.00	7.72	4.62	9.00	28.68
0.07	0.00	0.08	0.00	9.00	5.26	10.48	33.94
0.08	0.00	0.09	0.00	10.48	5.86	12.21	39.80
0.09	0.00	0.11	0.00	12.21	6.38	14.22	46.17
0.11	0.00	0.13	0.00	14.22	6.76	16.57	52.93
0.13	0.00	0.15	0.00	16.57	6.94	19.31	59.87
0.15	0.00	0.17	0.00	19.31	6.91	22.49	66.78
0.17	0.00	0.20	0.00	22.49	6.73	26.20	73.50
0.20	0.00	0.23	0.00	26.20	5.87	30.53	79.38
0.23	0.00	0.27	0.00	30.53	4.85	35.56	84.23
0.27	0.00	0.31	0.00	35.56	3.82	41.43	88.05
0.31	0.00	0.36	0.00	41.43	2.92	48.27	90.97
0.36	0.04	0.42	0.04	48.27	2.22	56.23	93.18
0.42	0.13	0.49	0.17	56.23	1.73	65.51	94.91
0.49	0.23	0.58	0.40	65.51	1.42	76.32	96.33
0.58	0.35	0.67	0.75	76.32	1.20	88.91	97.53
0.67	0.49	0.78	1.25	88.91	1.00	103.58	98.53
0.78	0.62	0.91	1.86	103.58	0.74	120.67	99.27
0.91	0.74	1.06	2.60	120.67	0.49	140.58	99.76
1.06	0.83	1.24	3.43	140.58	0.24	163.77	100.00
1.24	0.87	1.44	4.30	163.77	0.00	190.80	100.00
1.44	0.88	1.68	5.18	190.80	0.00	222.28	100.00
1.68	0.88	1.95	6.06	222.28	0.00	258.95	100.00
1.95	0.89	2.28	6.95	258.95	0.00	301.68	100.00
2.28	0.95	2.65	7.91	301.68	0.00	351.46	100.00
2.65	1.09	3.09	9.00	351.46	0.00	409.45	100.00
3.09	1.33	3.60	10.33	409.45	0.00	477.01	100.00
3.60	1.68	4.19	12.00	477.01	0.00	555.71	100.00
4.19	2.13	4.88	14.14	555.71	0.00	647.41	100.00
4.88	2.68	5.69	16.82	647.41	0.00	754.23	100.00
5.69	3.30	6.63	20.11	754.23	0.00	878.67	100.00



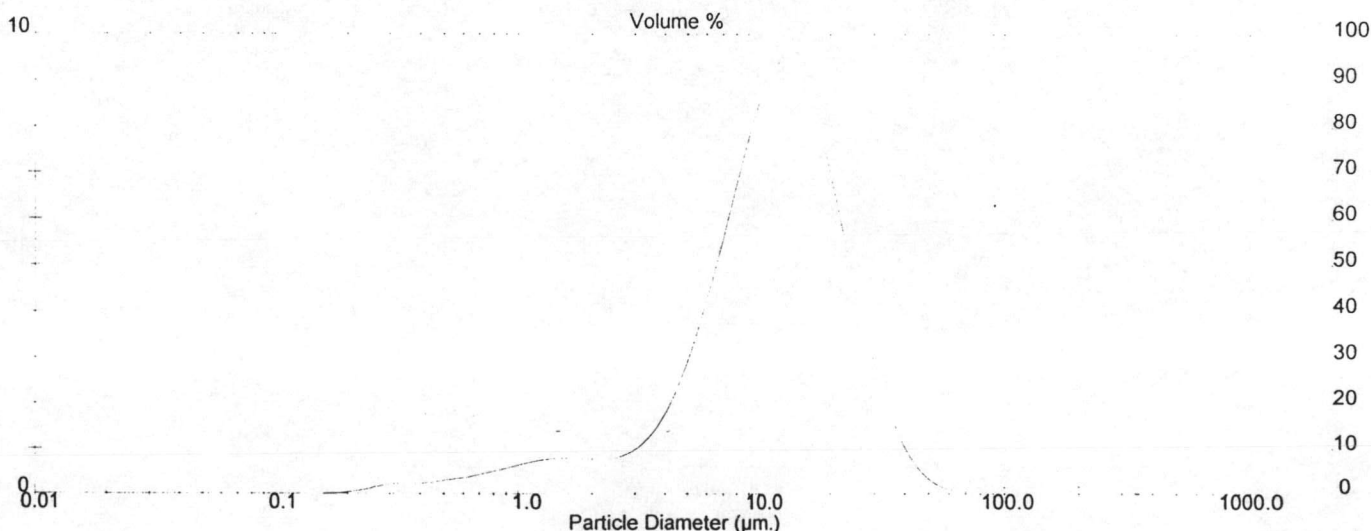
Result: Analysis Report

Sample Details		
Sample ID: MMWCS 750 / 1A	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 25	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 26.9 %
Presentation: 3OHD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.247 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0273 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.1119 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.51 um	D (v, 0.5) = 11.79 um	D (v, 0.9) = 25.49 um
D [4, 3] = 15.29 um	D [3, 2] = 5.40 um	Span = 1.864E+00	Uniformity = 7.262E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	5.73	7.72	27.68
0.06	0.00	0.07	0.00	7.72	7.07	9.00	34.75
0.07	0.00	0.08	0.00	9.00	8.27	10.48	43.02
0.08	0.00	0.09	0.00	10.48	9.13	12.21	52.15
0.09	0.00	0.11	0.00	12.21	9.50	14.22	61.64
0.11	0.00	0.13	0.01	14.22	9.48	16.57	71.12
0.13	0.01	0.15	0.01	16.57	8.19	19.31	79.31
0.15	0.01	0.17	0.03	19.31	6.56	22.49	85.87
0.17	0.03	0.20	0.06	22.49	4.90	26.20	90.77
0.20	0.07	0.23	0.12	26.20	3.40	30.53	94.17
0.23	0.13	0.27	0.25	30.53	2.16	35.56	96.33
0.27	0.20	0.31	0.46	35.56	1.24	41.43	97.57
0.31	0.23	0.36	0.69	41.43	0.62	48.27	98.19
0.36	0.23	0.42	0.92	48.27	0.26	56.23	98.45
0.42	0.26	0.49	1.19	56.23	0.10	65.51	98.55
0.49	0.33	0.58	1.52	65.51	0.06	76.32	98.61
0.58	0.37	0.67	1.88	76.32	0.09	88.91	98.70
0.67	0.45	0.78	2.33	88.91	0.14	103.58	98.84
0.78	0.53	0.91	2.86	103.58	0.18	120.67	99.02
0.91	0.63	1.06	3.49	120.67	0.19	140.58	99.21
1.06	0.71	1.24	4.20	140.58	0.19	163.77	99.41
1.24	0.78	1.44	4.98	163.77	0.18	190.80	99.58
1.44	0.79	1.68	5.77	190.80	0.16	222.28	99.74
1.68	0.78	1.95	6.55	222.28	0.13	258.95	99.87
1.95	0.77	2.28	7.32	258.95	0.09	301.68	99.96
2.28	0.79	2.65	8.12	301.68	0.04	351.46	100.00
2.65	0.92	3.09	9.04	351.46	0.00	409.45	100.00
3.09	1.18	3.60	10.22	409.45	0.00	477.01	100.00
3.60	1.65	4.19	11.87	477.01	0.00	555.71	100.00
4.19	2.35	4.88	14.22	555.71	0.00	647.41	100.00
4.88	3.29	5.69	17.51	647.41	0.00	754.23	100.00
5.69	4.44	6.63	21.95	754.23	0.00	878.67	100.00





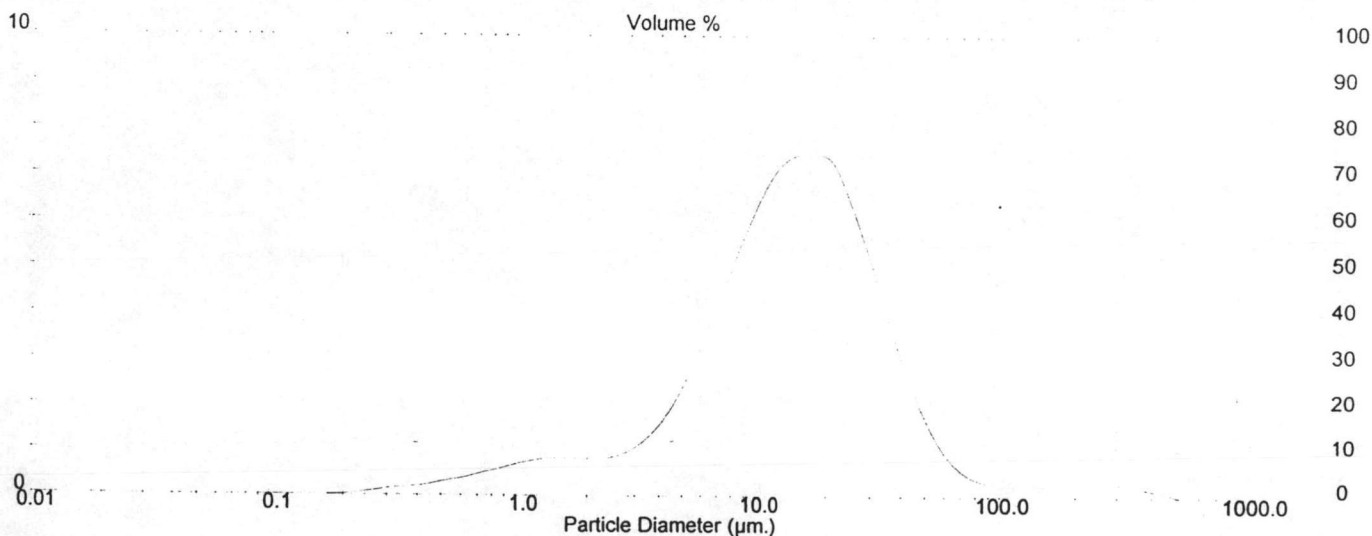
### Result: Analysis Report

Sample Details		
Sample ID: MMWCS 750/2A	Run Number: 1	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 6	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Tecnological Research Equipment Center Chulalongkorn University Liquid medium : water		

System Details			
Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 23.3 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.164 %
Analysis Model: Polydisperse			
Modifications: Active --	Killed Data Channels: Low 0; High 2		

Result Statistics			
Distribution Type: Volume	Concentration = 0.0248 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 1.0140 sq. m / g
Mean Diameters:	D (v, 0.1) = 3.39 um	D (v, 0.5) = 14.34 um	D (v, 0.9) = 38.41 um
D [4, 3] = 22.74 um	D [3, 2] = 5.92 um	Span = 2.441E+00	Uniformity = 1.058E+00

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.63	4.31	7.72	24.31
0.06	0.00	0.07	0.00	7.72	5.22	9.00	29.54
0.07	0.00	0.08	0.00	9.00	6.07	10.48	35.61
0.08	0.00	0.09	0.00	10.48	6.76	12.21	42.37
0.09	0.00	0.11	0.00	12.21	7.22	14.22	49.59
0.11	0.00	0.13	0.00	14.22	7.43	16.57	57.02
0.13	0.00	0.15	0.01	16.57	7.43	19.31	64.45
0.15	0.01	0.17	0.02	19.31	7.29	22.49	71.74
0.17	0.02	0.20	0.04	22.49	6.52	26.20	78.26
0.20	0.04	0.23	0.08	26.20	5.53	30.53	83.79
0.23	0.09	0.27	0.17	30.53	4.41	35.56	88.20
0.27	0.14	0.31	0.31	35.56	3.31	41.43	91.51
0.31	0.18	0.36	0.49	41.43	2.32	48.27	93.82
0.36	0.21	0.42	0.70	48.27	1.51	56.23	95.33
0.42	0.26	0.49	0.96	56.23	0.93	65.51	96.26
0.49	0.34	0.58	1.30	65.51	0.55	76.32	96.81
0.58	0.40	0.67	1.70	76.32	0.36	88.91	97.17
0.67	0.50	0.78	2.20	88.91	0.28	103.58	97.44
0.78	0.58	0.91	2.78	103.58	0.26	120.67	97.70
0.91	0.68	1.06	3.46	120.67	0.26	140.58	97.96
1.06	0.76	1.24	4.23	140.58	0.27	163.77	98.23
1.24	0.82	1.44	5.05	163.77	0.28	190.80	98.52
1.44	0.84	1.68	5.89	190.80	0.30	222.28	98.82
1.68	0.83	1.95	6.71	222.28	0.31	258.95	99.13
1.95	0.82	2.28	7.54	258.95	0.31	301.68	99.44
2.28	0.84	2.65	8.38	301.68	0.27	351.46	99.71
2.65	0.95	3.09	9.32	351.46	0.19	409.45	99.89
3.09	1.15	3.60	10.47	409.45	0.11	477.01	100.00
3.60	1.49	4.19	11.96	477.01	0.00	555.71	100.00
4.19	1.98	4.88	13.94	555.71	0.00	647.41	100.00
4.88	2.64	5.69	16.57	647.41	0.00	754.23	100.00
5.69	3.43	6.63	20.00	754.23	0.00	878.67	100.00



Result: Analysis Report

Sample Details

Sample ID: HMWCS 750 / 1A	Run Number: 3	Measurement Date: Wed, Aug 01, 2000
Sample File: PARI	Record Number: 22	Analysis Date: Wed, Aug 01, 2000
Sample Path: A:\		Result Source: Analysed
Sample Notes: Test by Pranee : Scientific and Technological Research Equipment Center Chulalongkorn University Liquid medium : water		

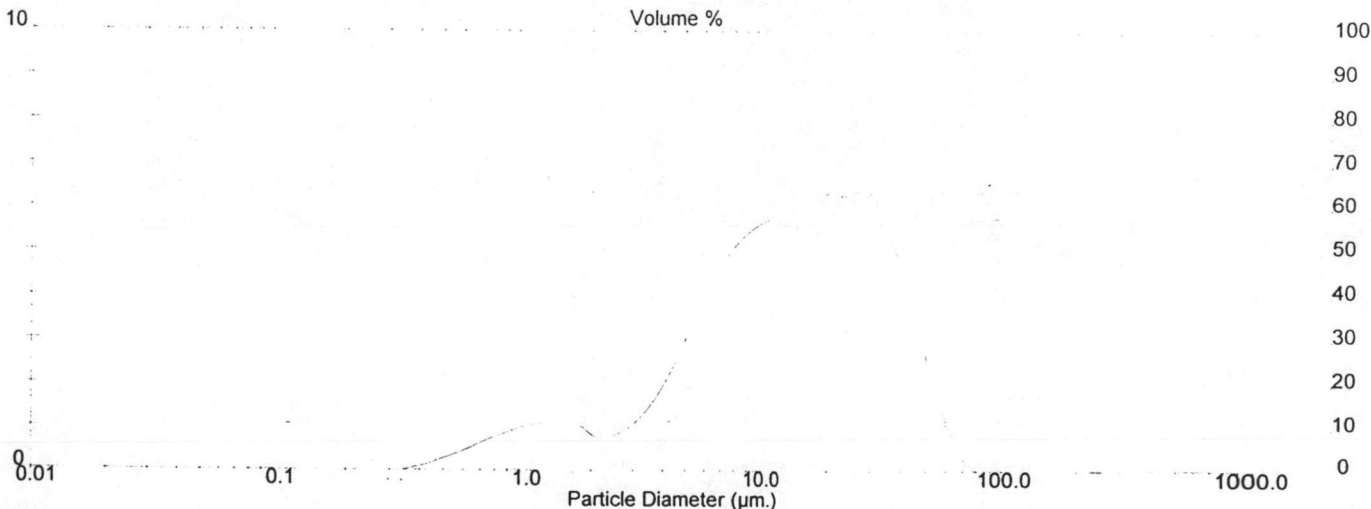
System Details

Range Lens: 300RF mm	Beam Length: 2.40 mm	Sampler: MS17	Obscuration: 17.0 %
Presentation: 30HD	[Particle R.I. = ( 1.5295, 0.1000);	Dispersant R.I. = 1.3300]	Residual: 0.939 %
Analysis Model: Polydisperse	Killed Data Channels: Low 0; High 2		
Modifications: Active --	Killed Result Channels: < 0.05 um; > 258.95 um.		

Result Statistics

Distribution Type: Volume	Concentration = 0.0170 %Vol	Density = 1.000 g / cub. cm	Specific S.A. = 0.9938 sq. m / g
Mean Diameters:	D (v, 0.1) = 2.91 um	D (v, 0.5) = 14.08 um	D (v, 0.9) = 37.94 um
D [4, 3] = 17.83 um	D [3, 2] = 6.04 um	Span = 2.488E+00	Uniformity = 7.731E-01

Size_Low (um)	In %	Size_High (um)	Under%	Size_Low (um)	In %	Size_High (um)	Under%
0.05	0.00	0.06	0.00	6.53	4.71	7.72	28.09
0.06	0.00	0.07	0.00	7.72	5.21	9.00	33.30
0.07	0.00	0.08	0.00	9.00	5.52	10.48	38.81
0.08	0.00	0.09	0.00	10.48	5.72	12.21	44.53
0.09	0.00	0.11	0.00	12.21	5.87	14.22	50.40
0.11	0.00	0.13	0.00	14.22	6.03	16.57	56.43
0.13	0.00	0.15	0.00	16.57	6.20	19.31	62.63
0.15	0.00	0.17	0.00	19.31	6.35	22.49	68.97
0.17	0.00	0.20	0.00	22.49	6.44	26.20	75.41
0.20	0.00	0.23	0.00	26.20	6.44	30.53	81.85
0.23	0.00	0.27	0.00	30.53	5.92	35.56	87.77
0.27	0.00	0.31	0.00	35.56	4.95	41.43	92.72
0.31	0.01	0.36	0.01	41.43	3.65	48.27	96.36
0.36	0.09	0.42	0.10	48.27	2.28	56.23	98.64
0.42	0.20	0.49	0.30	56.23	1.08	65.51	99.72
0.49	0.34	0.58	0.65	65.51	0.26	76.32	99.98
0.58	0.49	0.67	1.14	76.32	0.00	88.91	99.98
0.67	0.68	0.78	1.81	88.91	0.00	103.58	99.98
0.78	0.82	0.91	2.63	103.58	0.00	120.67	99.98
0.91	0.96	1.06	3.60	120.67	0.00	140.58	99.98
1.06	1.07	1.24	4.66	140.58	0.00	163.77	99.98
1.24	1.10	1.44	5.76	163.77	0.00	190.80	99.98
1.44	1.07	1.68	6.84	190.80	0.00	222.28	99.98
1.68	1.03	1.95	7.87	222.28	0.02	258.95	100.00
1.95	0.76	2.28	8.62	258.95	0.00	301.68	100.00
2.28	0.80	2.65	9.43	301.68	0.00	351.46	100.00
2.65	0.99	3.09	10.41	351.46	0.00	409.45	100.00
3.09	1.32	3.60	11.74	409.45	0.00	477.01	100.00
3.60	1.83	4.19	13.57	477.01	0.00	555.71	100.00
4.19	2.50	4.88	16.06	555.71	0.00	647.41	100.00
4.88	3.27	5.69	19.33	647.41	0.00	754.23	100.00
5.69	4.05	6.63	23.38	754.23	0.00	878.67	100.00



**APPENDIX IX**  
**GPC CHROMATOGRAM OF UNLOADED**  
**POLY( LACTIDE - CO - GLYCOLIDE ) MICROPARTICLES**  
**AT DIFFERENT TIME INTERVALS**

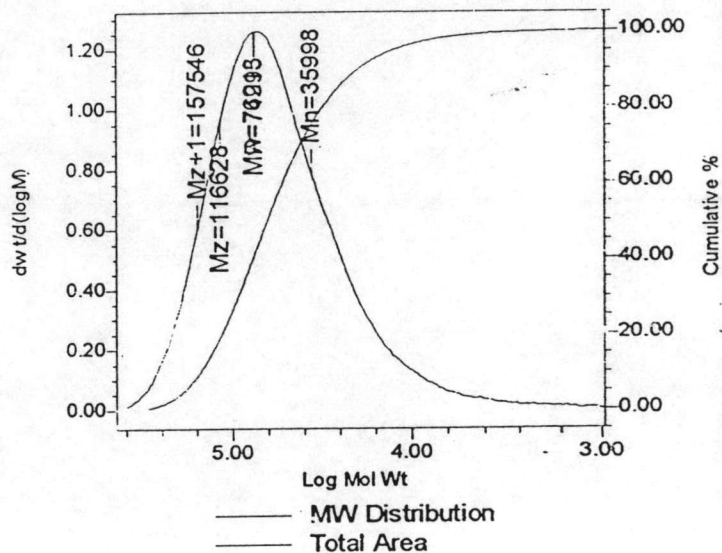
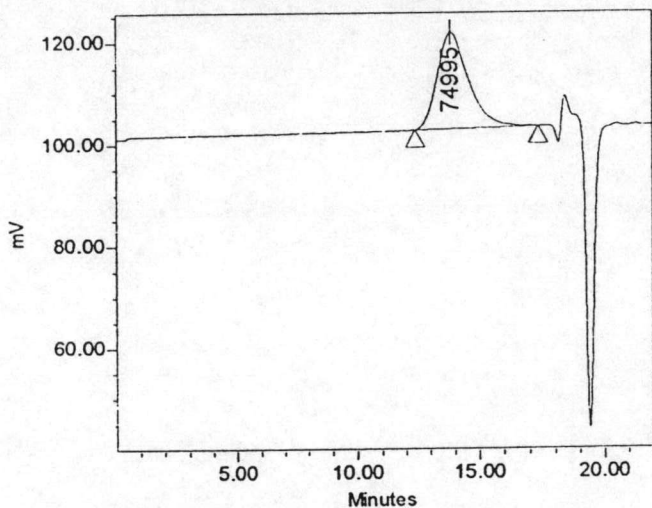


### Sample Information

SampleName PDL - W(0)  
 Vial 1  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 5/19/2000  
 Acq Method Set meth G  
 Processing Method proc G

**Auto-Scaled Chromatogram**



**GPC Results**

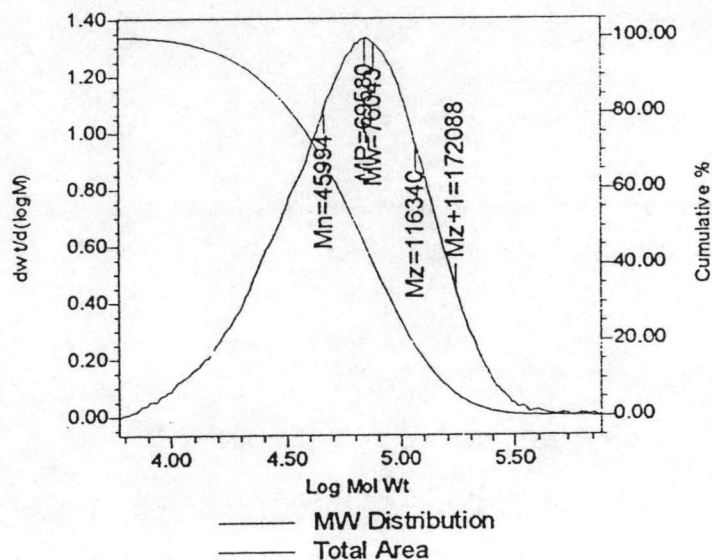
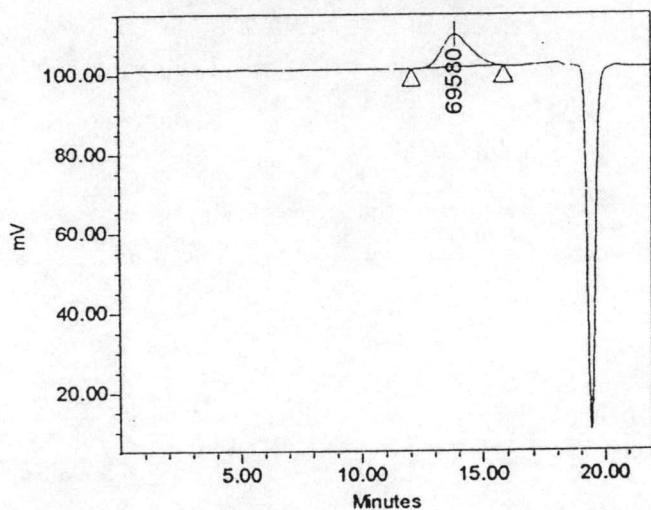
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	35998	76213	74995	116628	157546	2.117134

## Sample Information

SampleName PDL - W(2)  
 Vial 1  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

### Auto-Scaled Chromatogram



### GPC Results

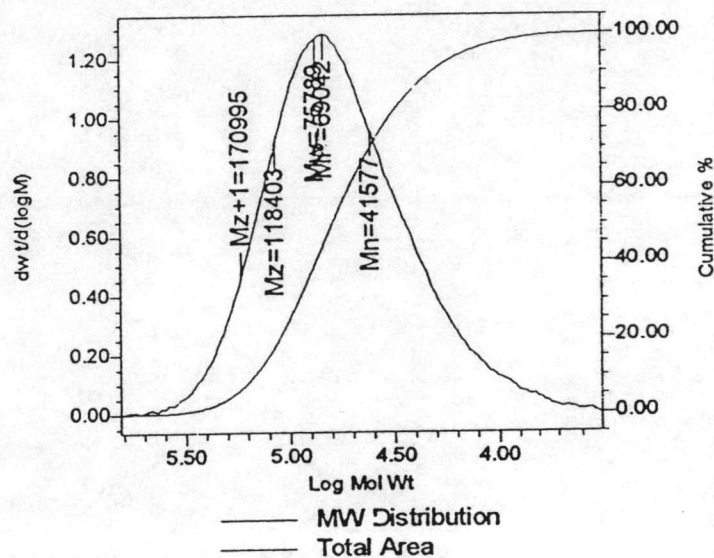
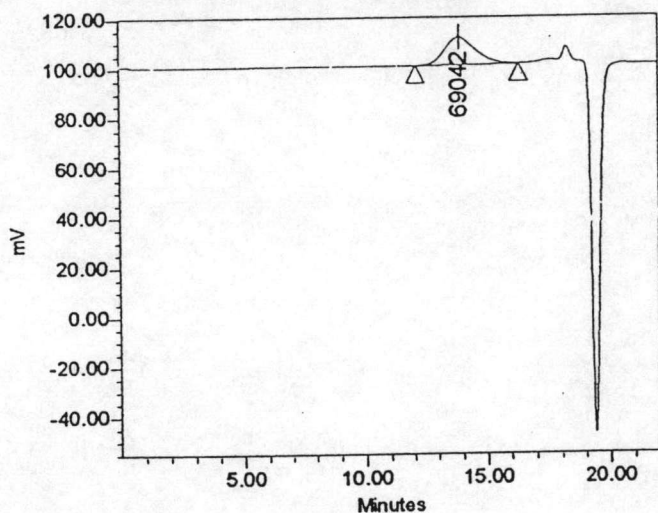
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	45994	76043	69580	116340	172088	1.653324

## Sample Information

SampleName PDL - W(4)  
 Vial 2  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	41577	75789	69042	118403	170995	1.822842

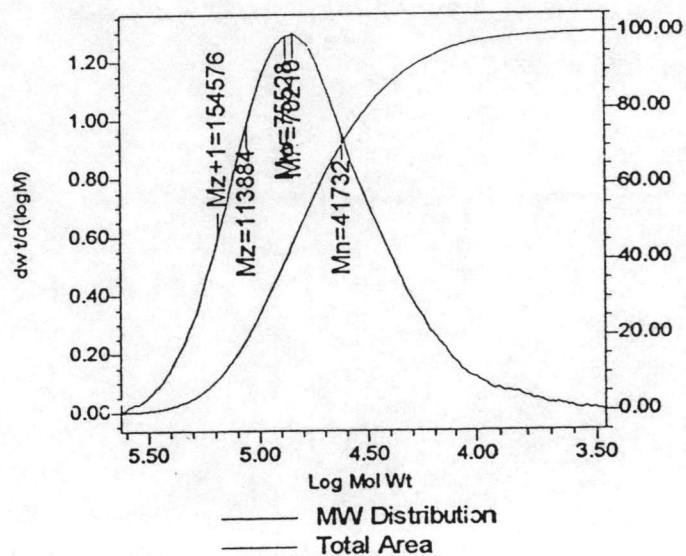
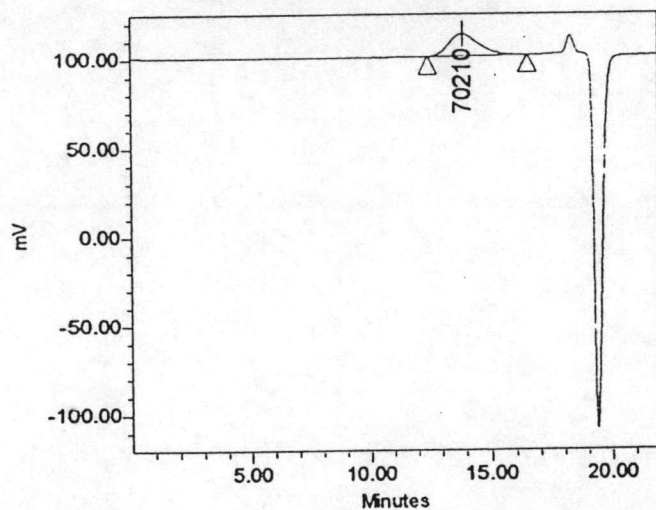


## Sample Information

SampleName PDL - W(6)  
 Vial 3  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

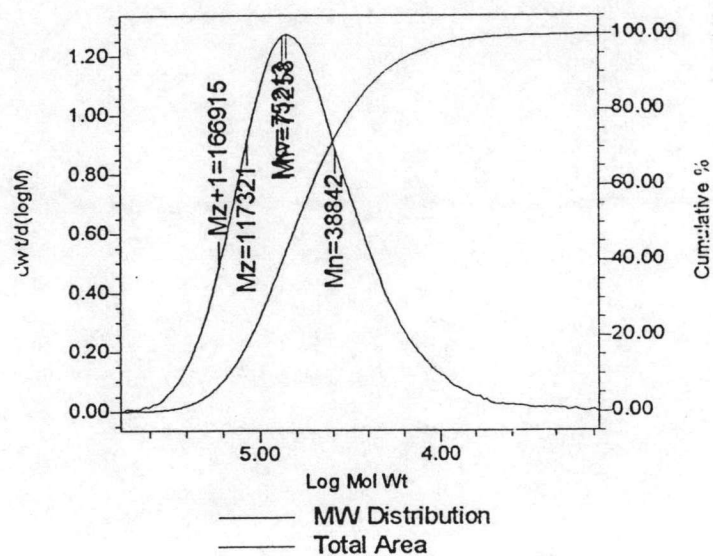
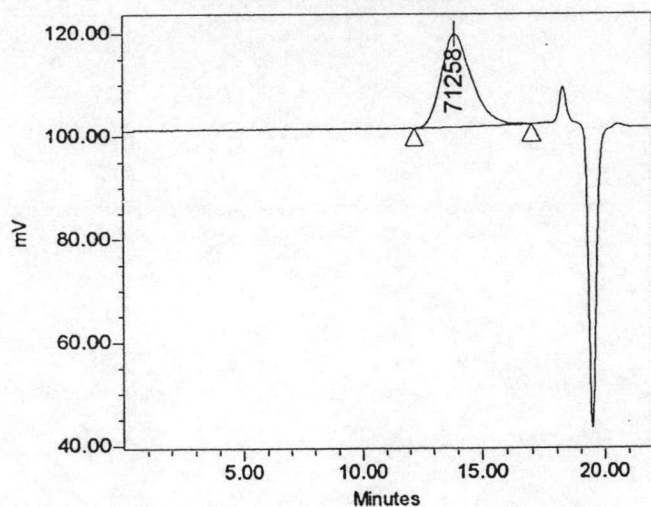
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	41732	75528	70210	113884	154576	1.809821

## Sample Information

SampleName PDL - W(8)  
 Vial 4  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



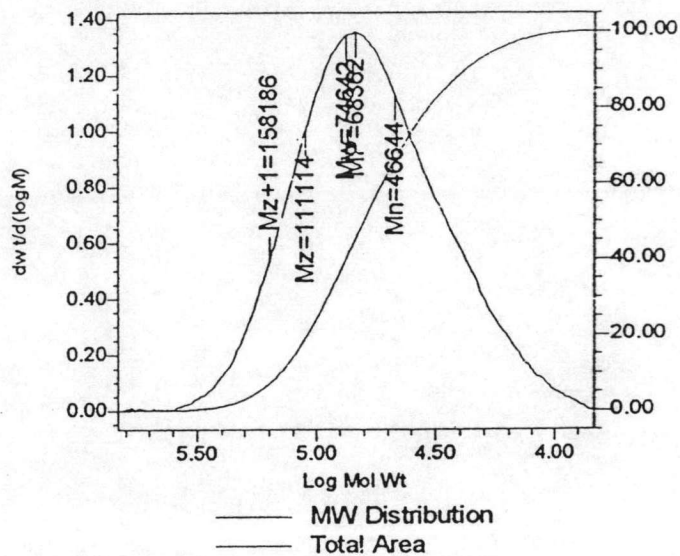
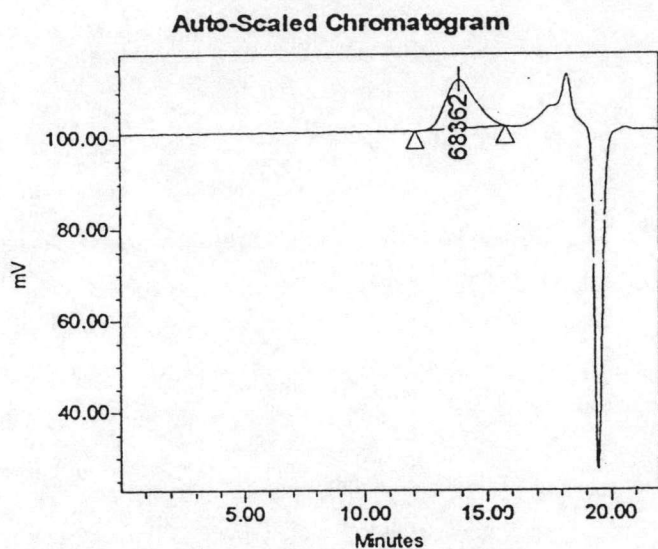
### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	38842	75213	71258	117321	166915	1.936402

## Sample Information

SampleName PDL - W(10)  
 Vial 1  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set methG  
 Processing Method procG



### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	46644	74642	68362	111114	158186	1.600258

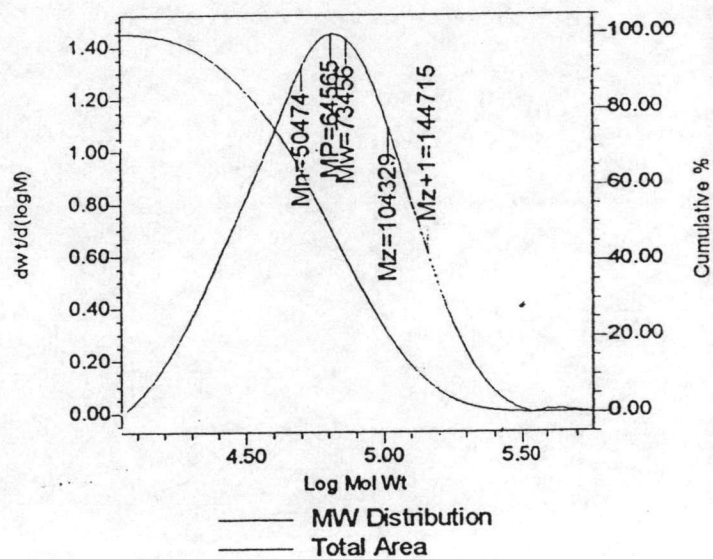
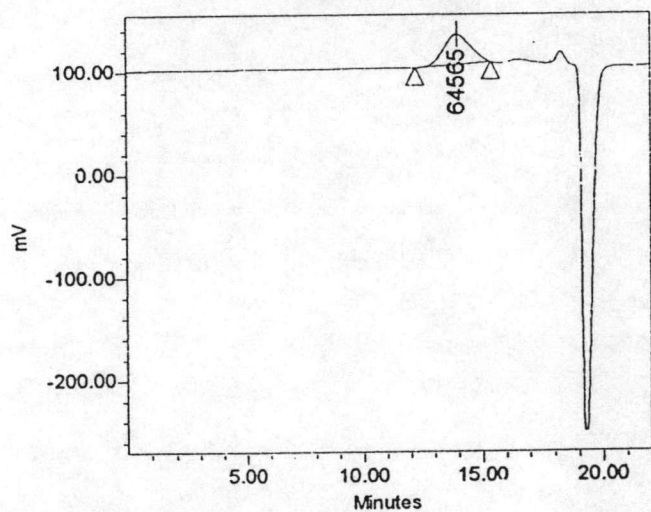


## Sample Information

SampleName PDL - W(12)  
 Vial 2  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

Auto-Scaled Chromatogram



GPC Results

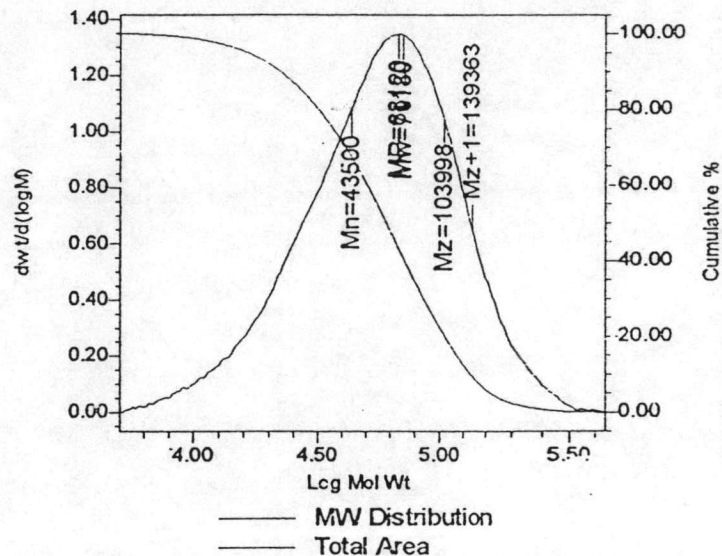
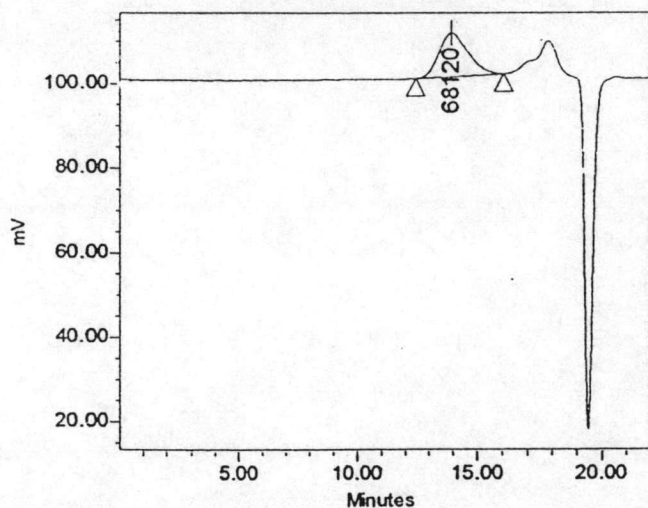
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	50474	73456	64565	104329	144715	1.455340

## Sample Information

SampleName PDL - W(16)  
 Vial 3  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

### Auto-Scaled Chromatogram



### GPC Results

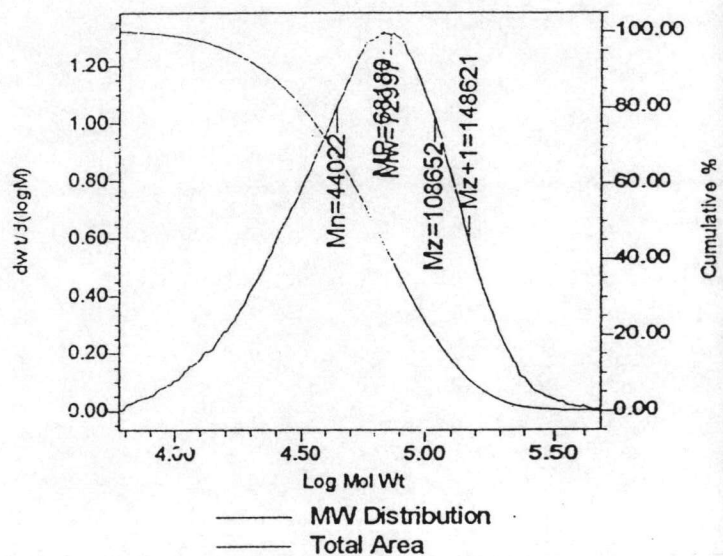
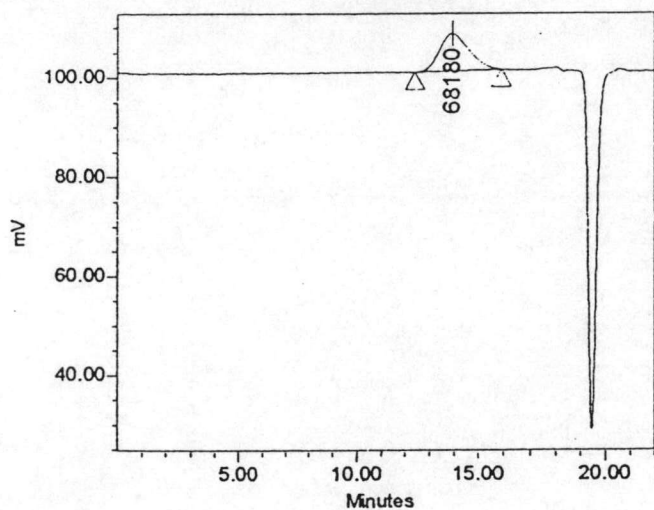
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	43500	70180	68120	103998	139363	1.636339

## Sample Information

SampleName P85 - W(0)  
 Vial 3  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 5/19/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

Auto-Scaled Chromatogram



GPC Results

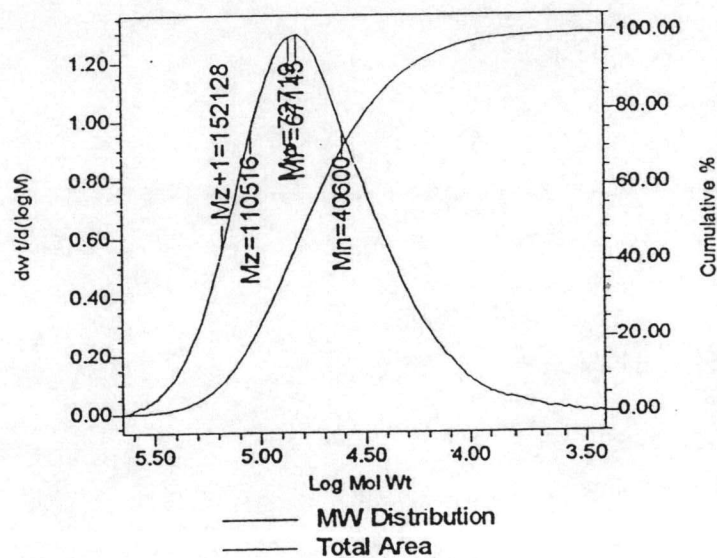
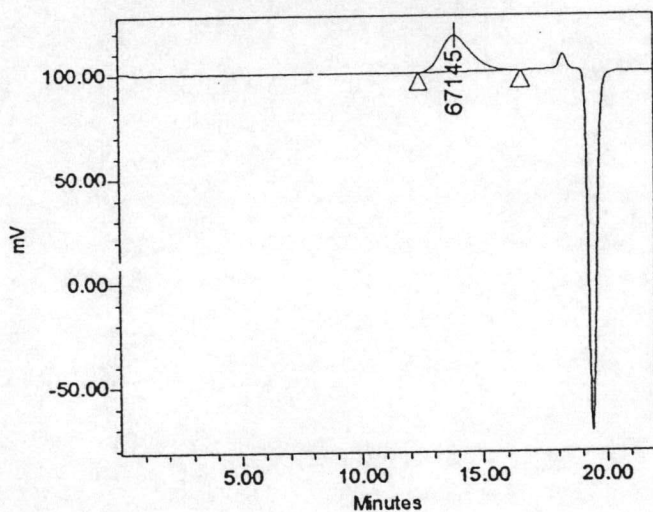
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	44022	72997	68180	108652	148621	1.658187

## Sample Information

SampleName P85 - W(2)  
 Vial 5  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	40600	72719	67145	110516	152128	1.791100

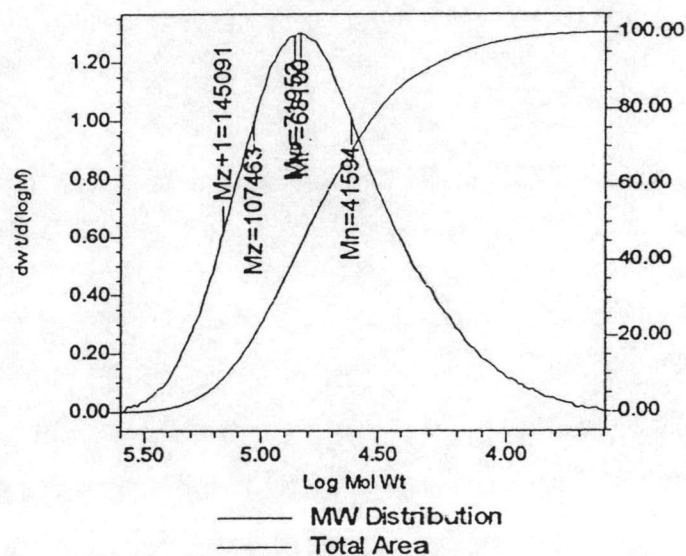
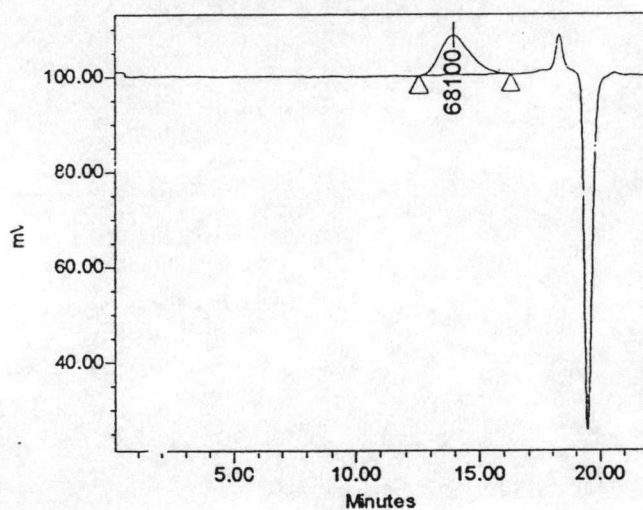


## Sample Information

SampleName P85 - W(4)  
 Vial 6  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

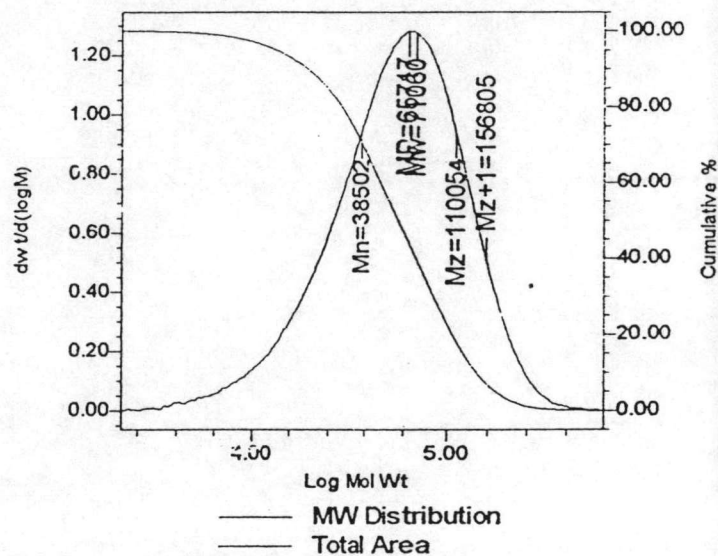
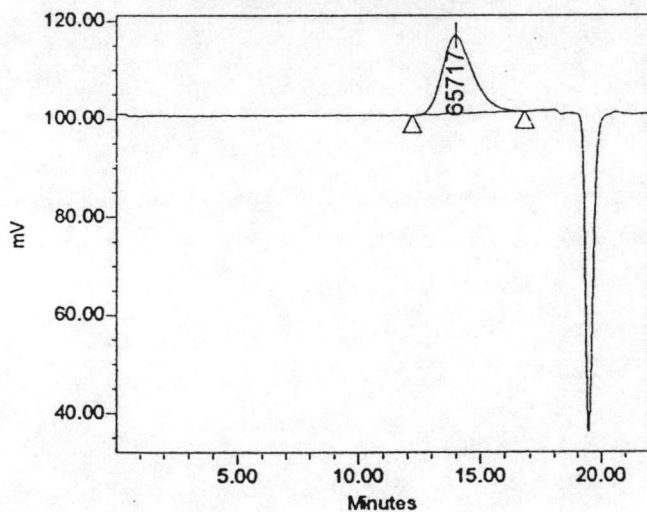
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	41594	71952	68100	107463	145091	1.729852

## Sample Information

SampleName P85 - W(6)  
 Vial 7  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

### Auto-Scaled Chromatogram



### GPC Results

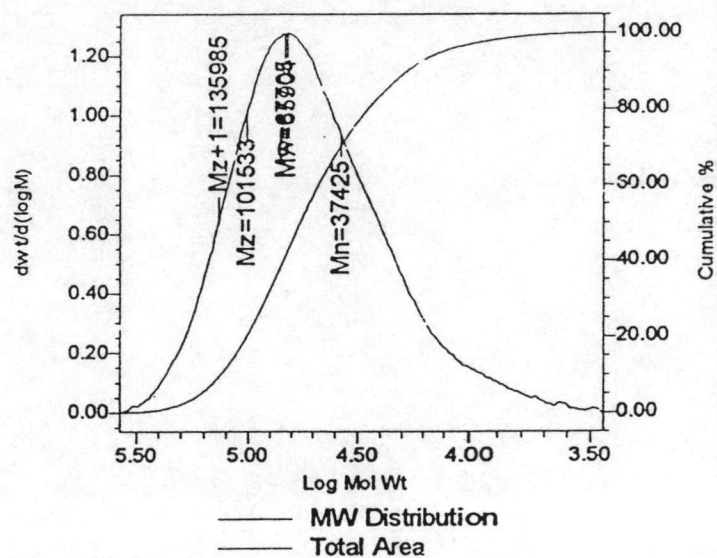
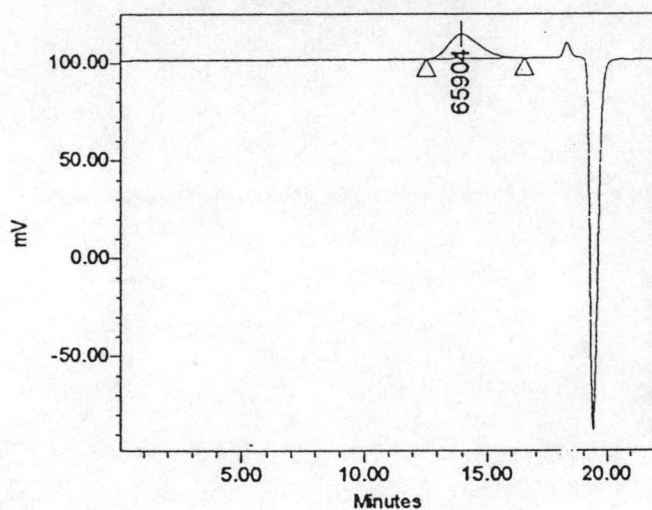
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	38502	71060	65717	110054	156805	1.845621

## Sample Information

SampleName P85 - W(8)  
 Vial 8  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/25/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

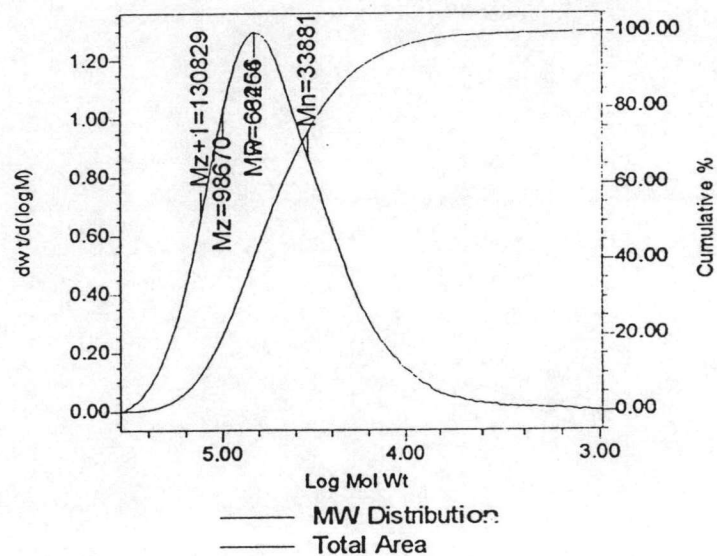
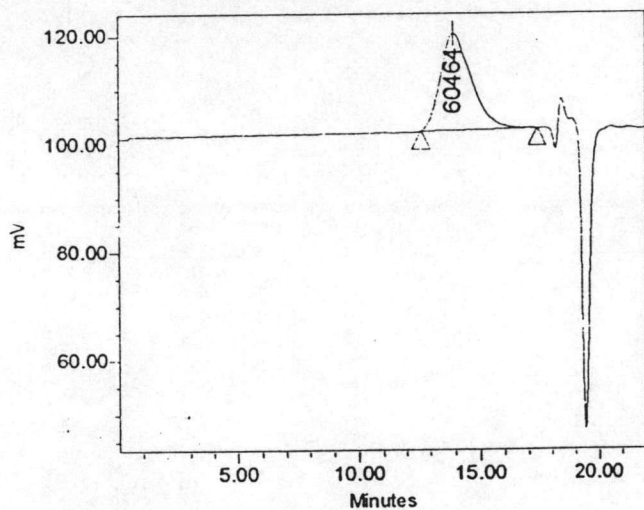
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	37425	67705	65904	101533	135985	1.809084

## Sample Information

SampleName P85 - W(10)  
 Vial 7  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set meth G  
 Processing Method proc G

### Auto-Scaled Chromatogram



### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	33881	63256	60464	98670	130829	1.955569

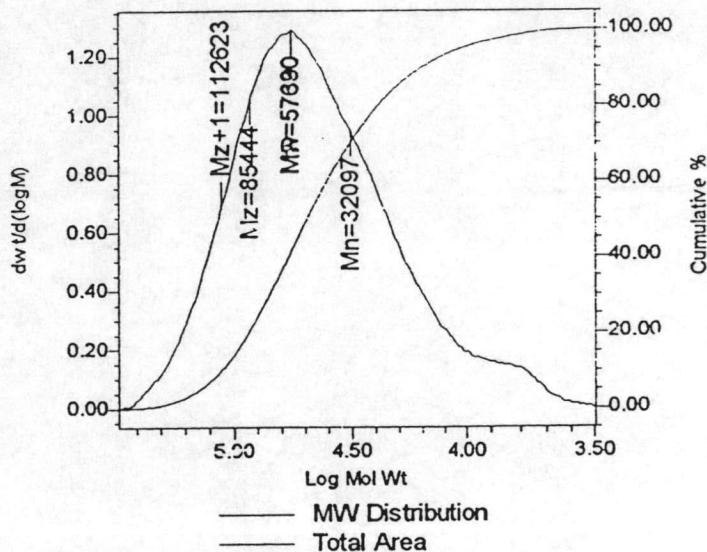
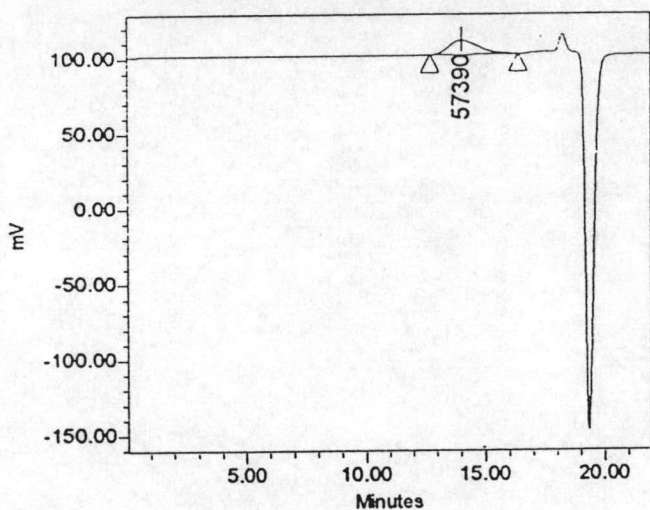


## Sample Information

SampleName P85 - W(12)  
 Vial 8  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set methG  
 Processing Method procG

Auto-Scaled Chromatogram



GPC Results

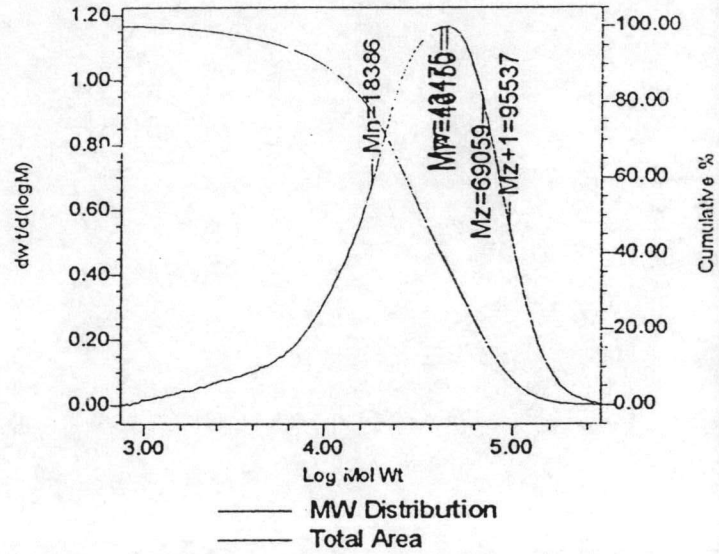
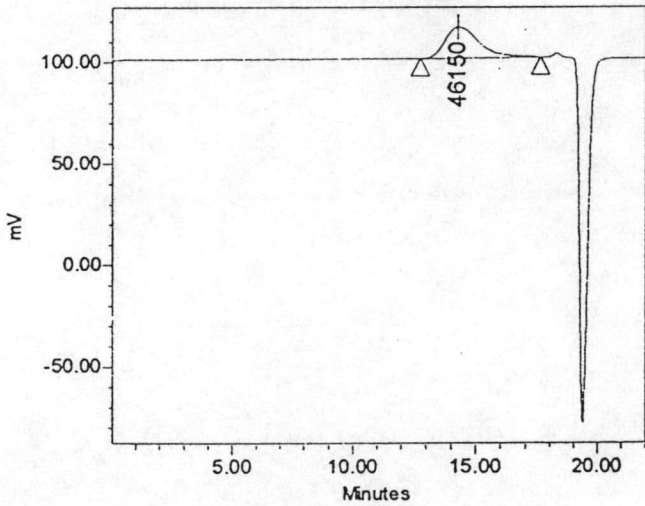
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	32097	57630	57390	85444	112623	1.795471

### Sample Information

SampleName P85 - W(16)  
 Vial 9  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

Auto-Scaled Chromatogram



GPC Results

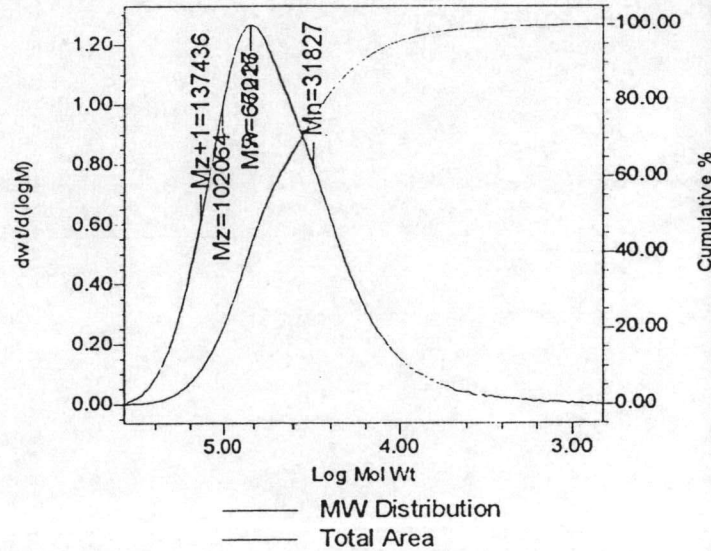
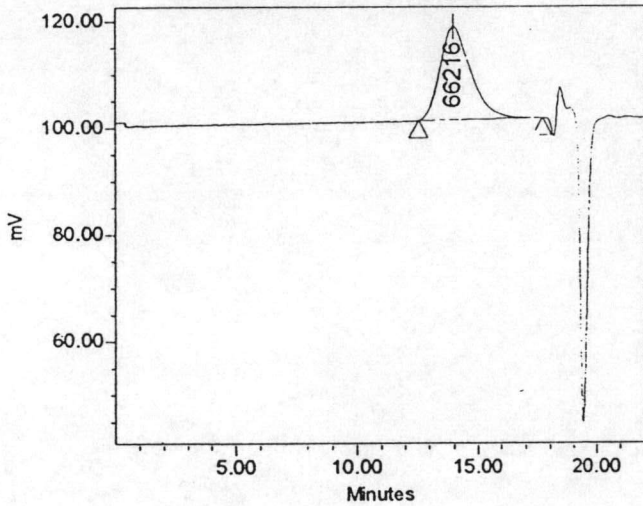
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	18386	43475	46150	69059	95537	2.364588

### Sample Information

SampleName P75 - W(0)  
 Vial 2  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 5/19/2000  
 Acq Method Set meth G  
 Processing Method proc G

Auto-Scaled Chromatogram



GPC Results

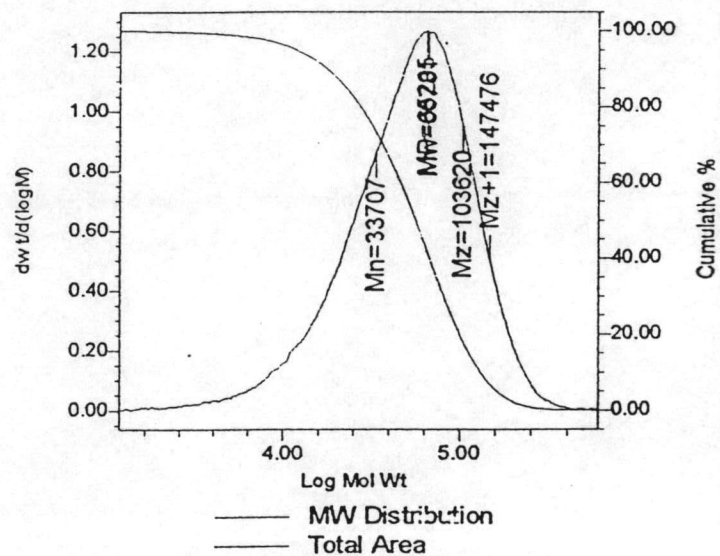
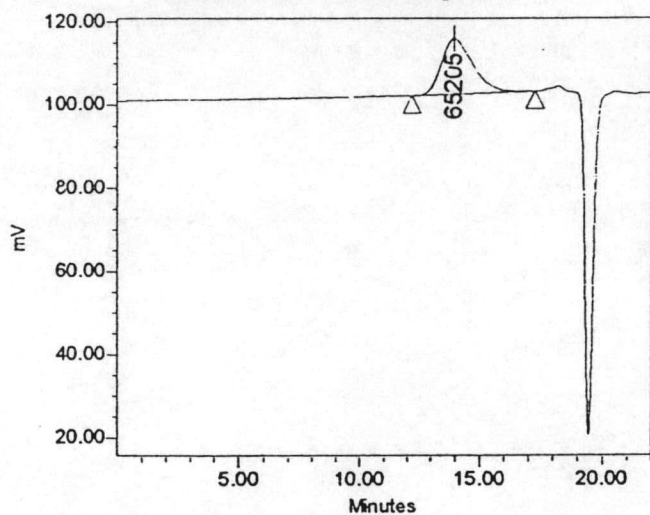
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	31827	67027	66216	102064	137436	2.106010

## Sample Information

SampleName P75 - W(2)  
 Vial 5  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

### Auto-Scaled Chromatogram



### GPC Results

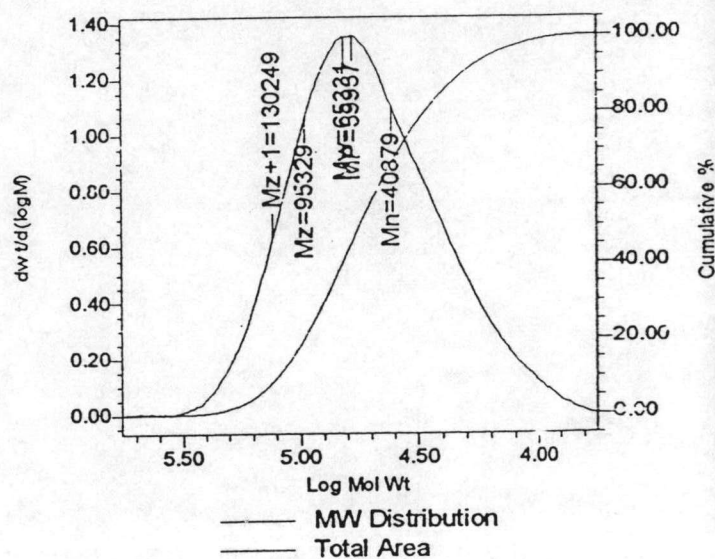
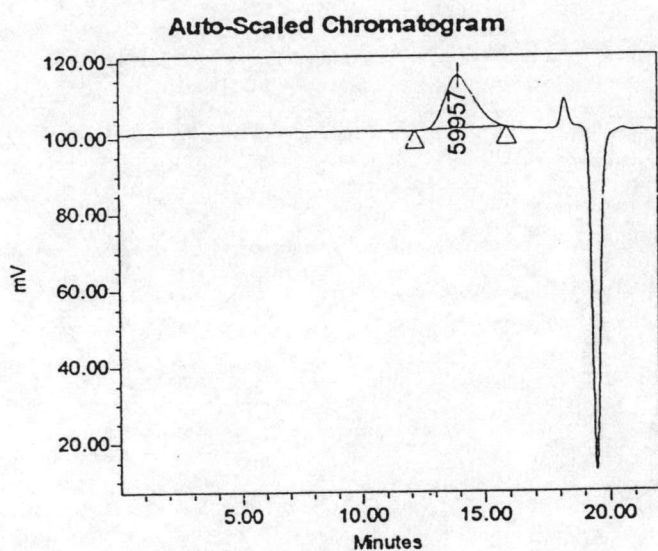
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	33707	66781	65205	103620	147476	1.981207



## Sample Information

SampleName P75 - W(4)  
 Vial 6  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set methG  
 Processing Method procG



### GPC Results

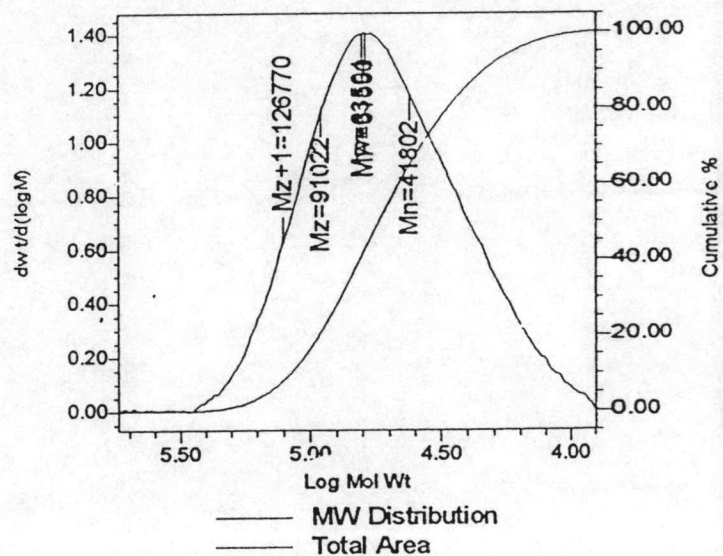
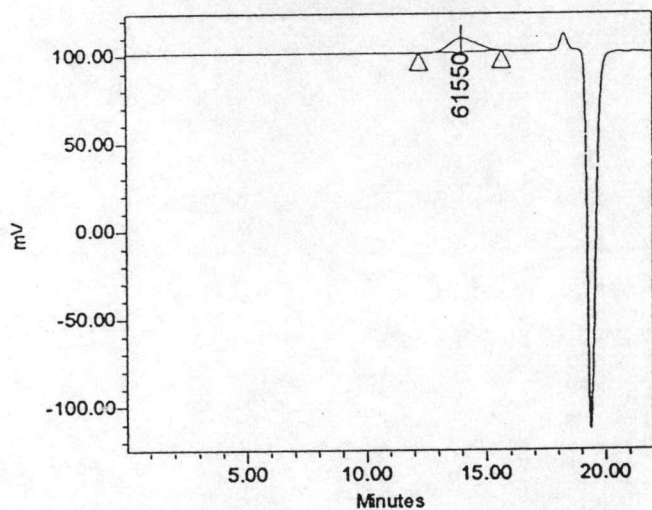
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	40879	65331	59957	95329	130249	1.598128

## Sample Information

SampleName P75 - W(6)  
 Vial 7  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

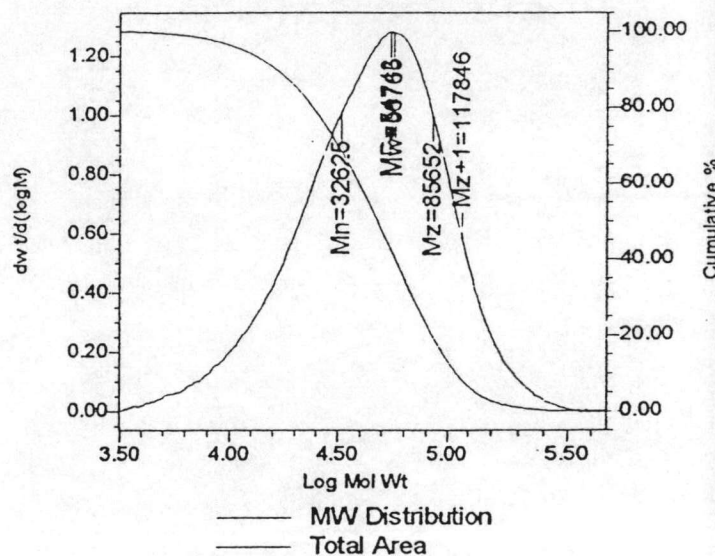
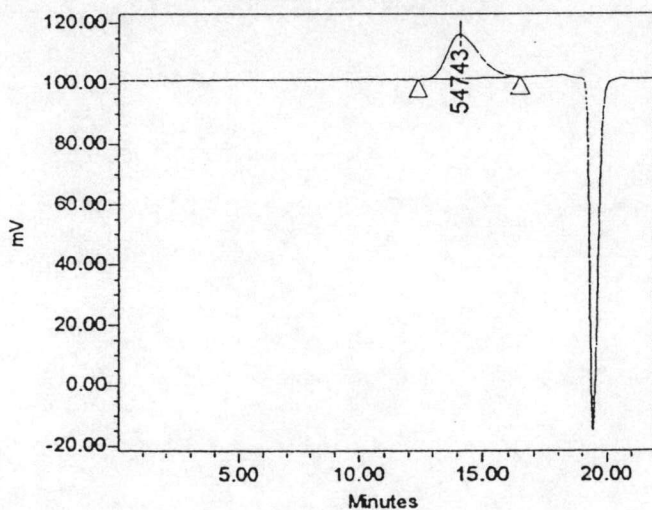
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	41802	63504	61550	91022	126770	1.519140

## Sample Information

SampleName P75 - W(8)  
 Vial 8  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

Auto-Scaled Chromatogram



GPC Results

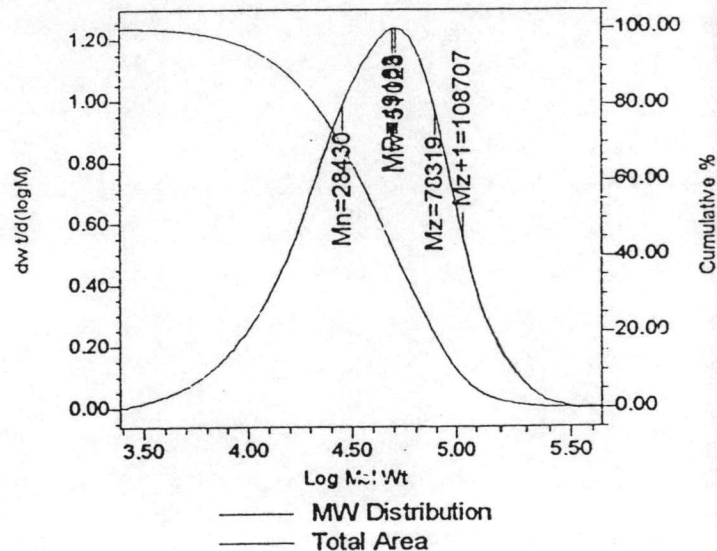
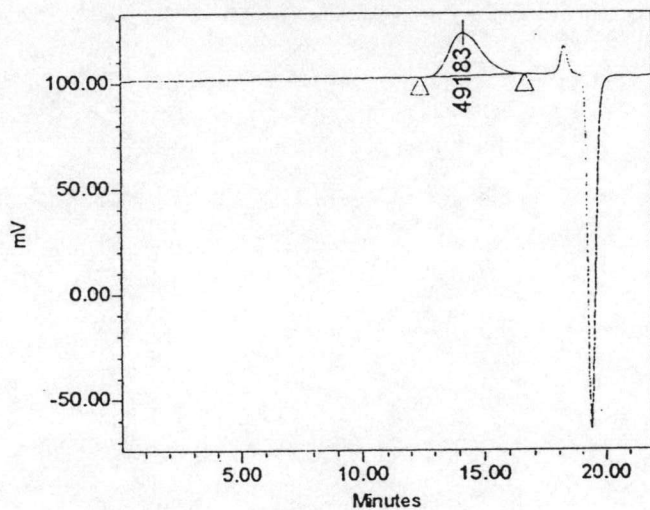
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	32625	58765	54743	85652	117846	1.739920

## Sample Information

SampleName P75 - W(10)  
 Vial 4  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set Meth G  
 Processing Method Proc G

Auto-Scaled Chromatogram



GPC Results

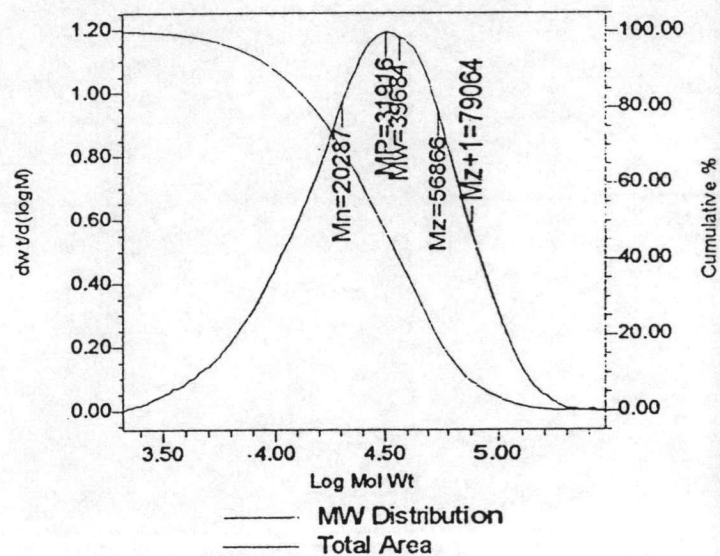
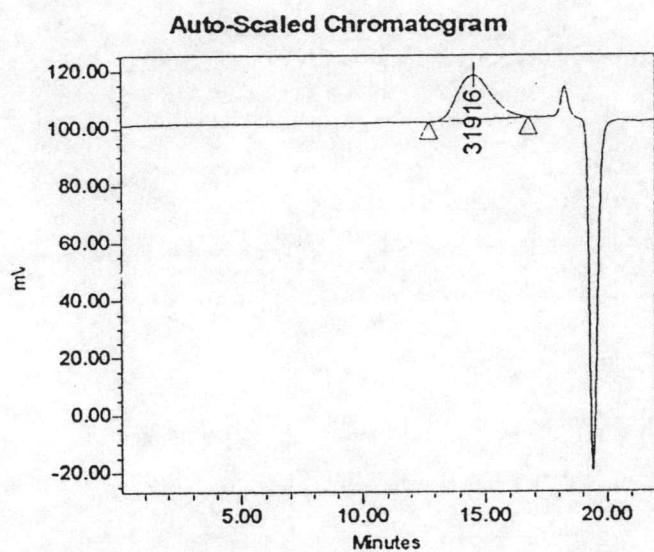
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	28430	51028	49183	78319	108707	1.794887



## Sample Information

SampleName P75 - W(12)  
 Vial 5  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set Meth G  
 Processing Method Proc G



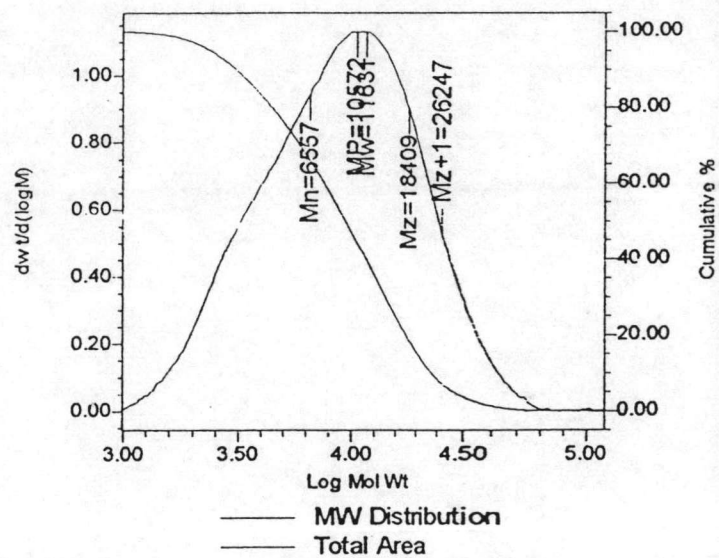
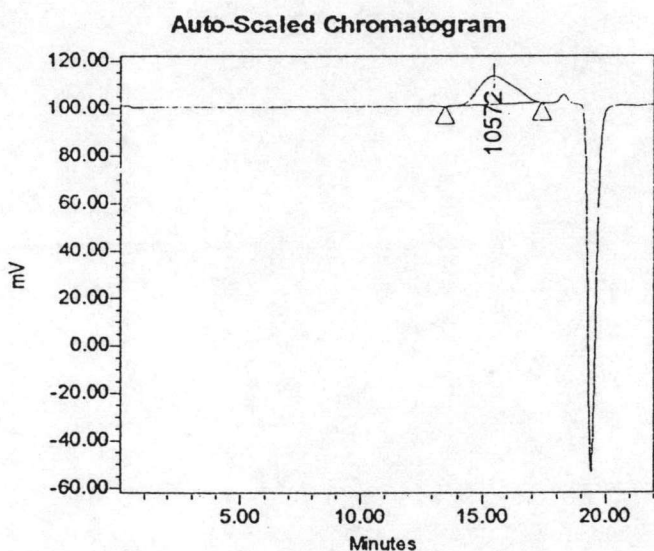
### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Poly dispersity
1	20287	39684	31916	56866	79064	1.808280

## Sample Information

SampleName P75 - W(16)  
 Vial 6  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set Meth G  
 Processing Method Proc G



### GPC Results

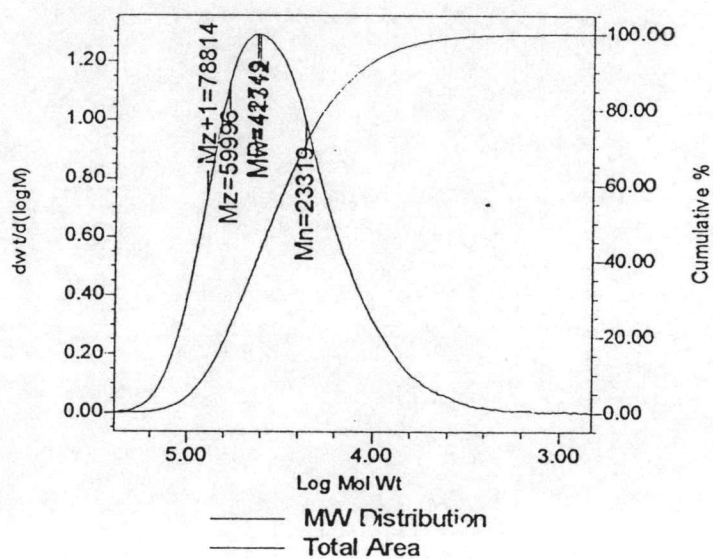
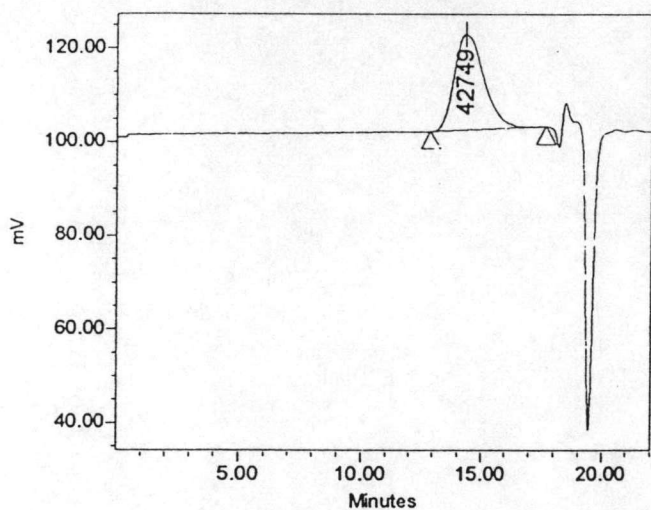
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	6557	11631	10572	18409	26247	1.773706

## Sample Information

SampleName P50 - W(0)  
 Vial 4  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 5/19/2000  
 Acq Method Set meth G  
 Processing Method proc G

### Auto-Scaled Chromatogram



### GPC Results

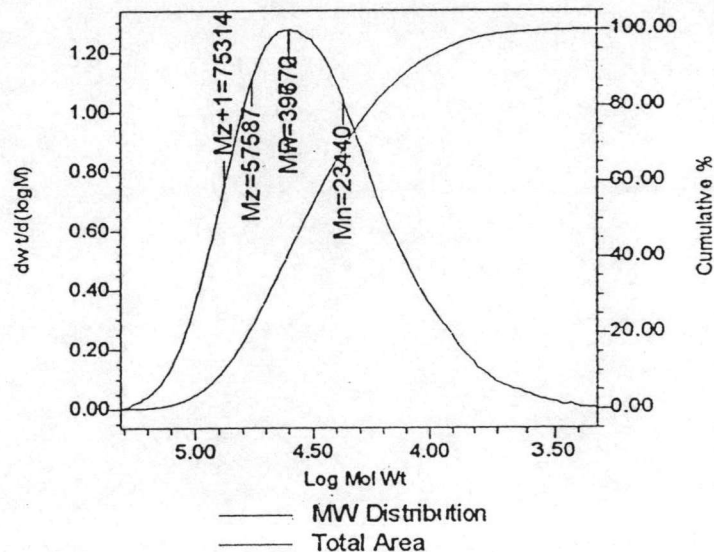
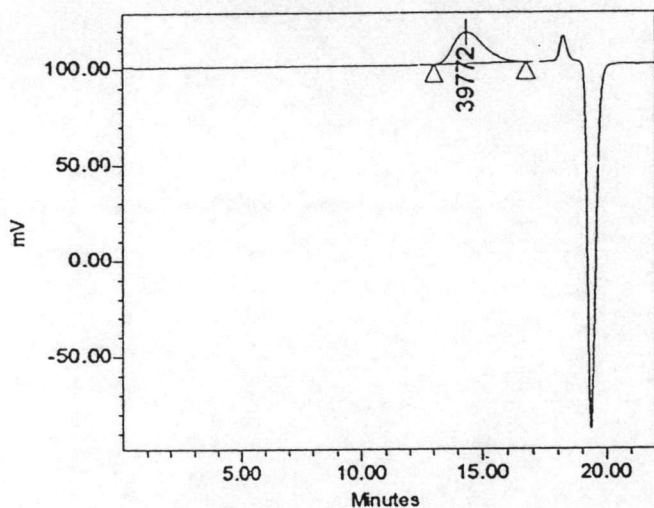
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	23319	41312	42749	59996	78814	1.771585

## Sample Information

SampleName P50 - W(2)  
 Vial 1  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	23440	39670	39772	57587	75314	1.692449

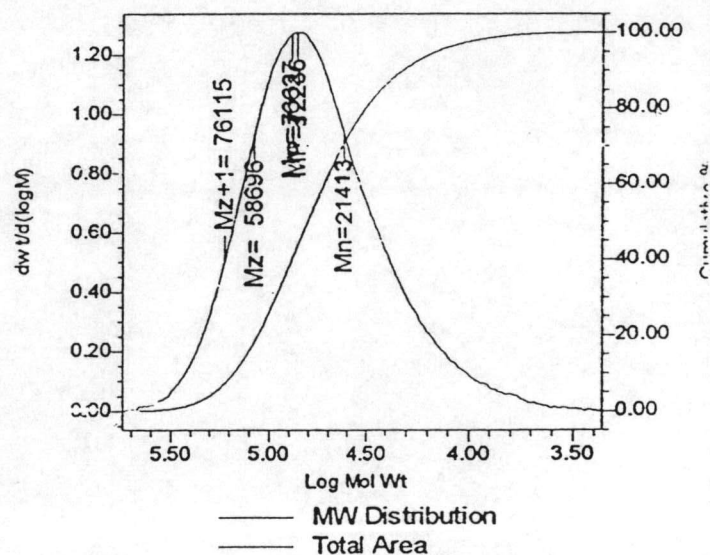
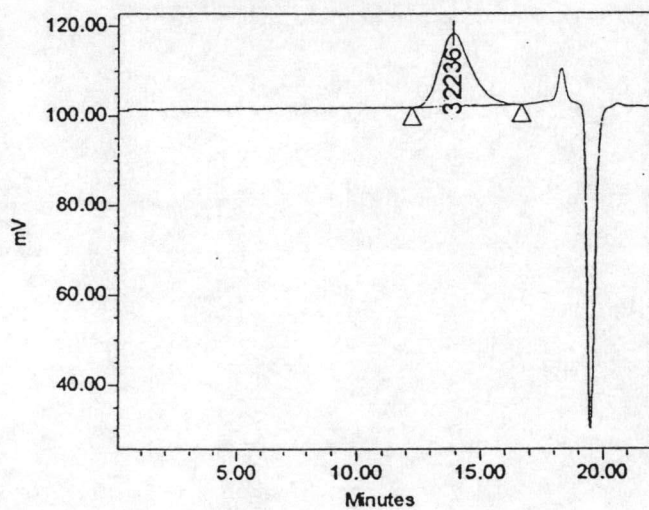


## Sample Information

SampleName P50 - W(4)  
 Vial 2  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

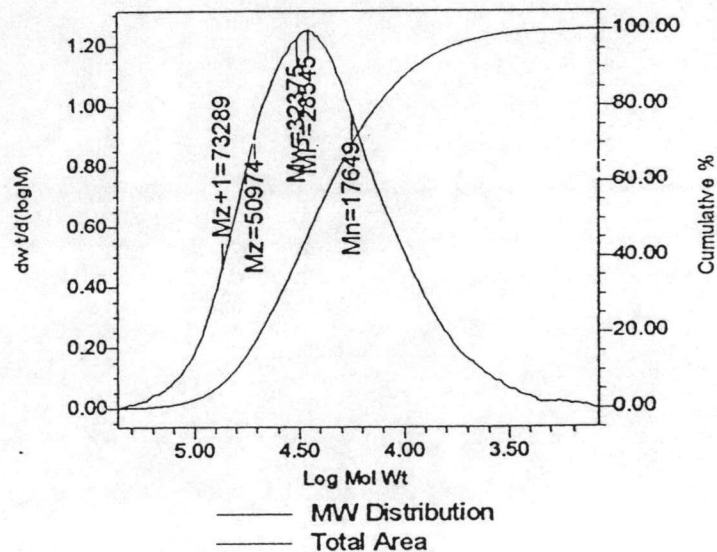
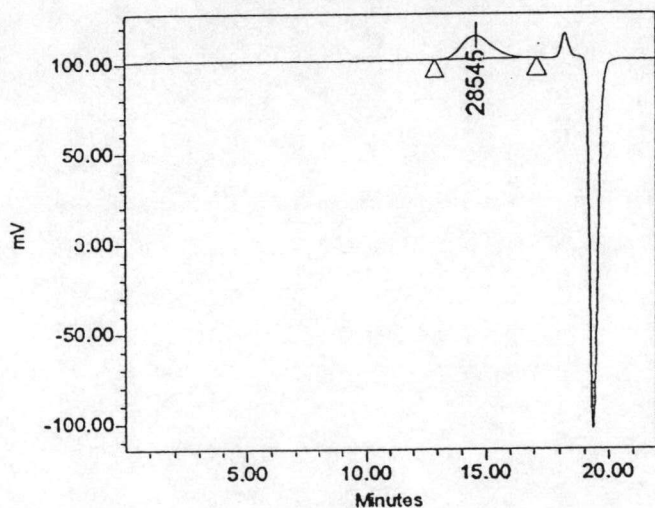
Dist Name	Mn	Mw	MP	Mz	Mz+1	Poly dispersity
1	21413	36627	32236	58696	76115	1.850329

## Sample Information

SampleName P50 - W(6)  
 Vial 3  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set methG  
 Processing Method procG

**Auto-Scaled Chromatogram**



**GPC Results**

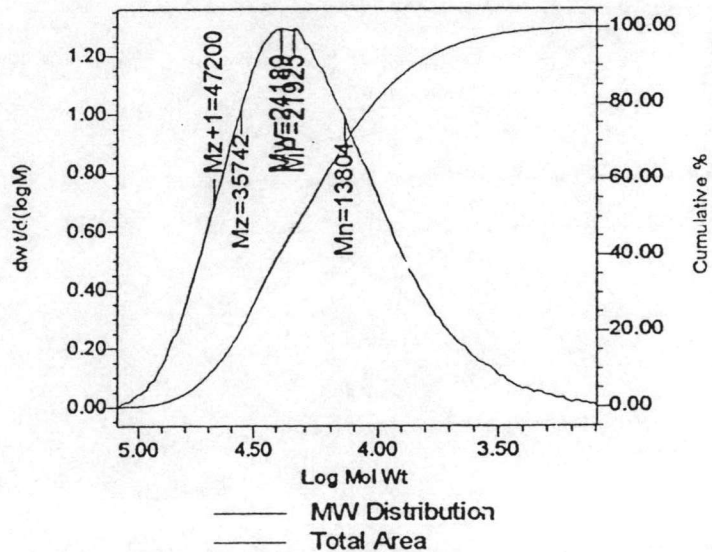
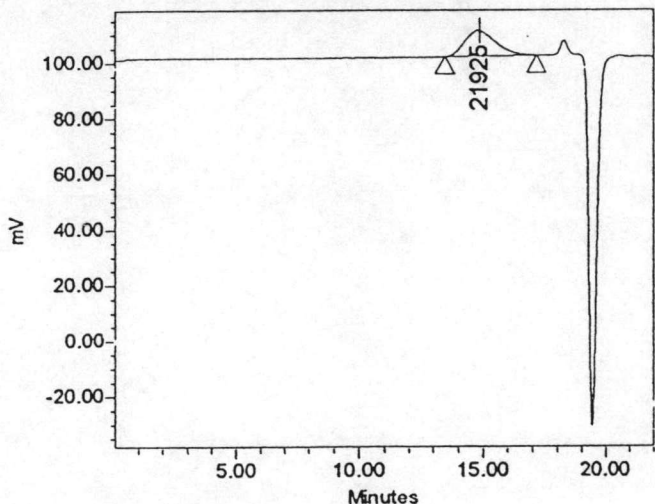
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	17649	32375	28545	50974	73289	1.834358

### Sample Information

SampleName P50 - W(8)  
 Vial 4  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 7/26/2000  
 Acq Method Set methG  
 Processing Method procG

**Auto-Scaled Chromatogram**



**GPC Results**

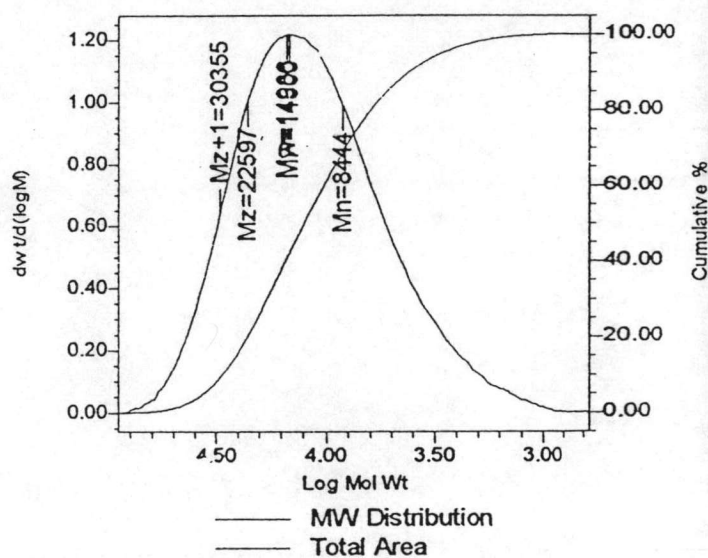
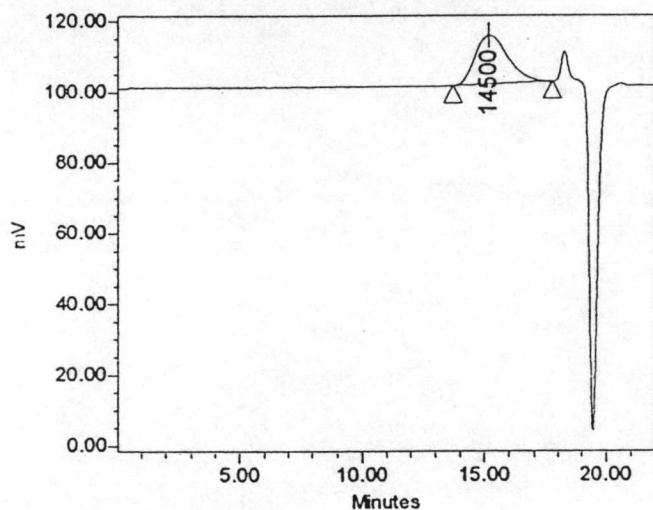
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	13804	24189	21925	35742	47200	1.752271

## Sample Information

SampleName P50 - W(10)  
 Vial 10  
 Injection 1  
 Injection Volume 100.00  $\mu$ l  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	8444	14986	14500	22597	30355	1.774682

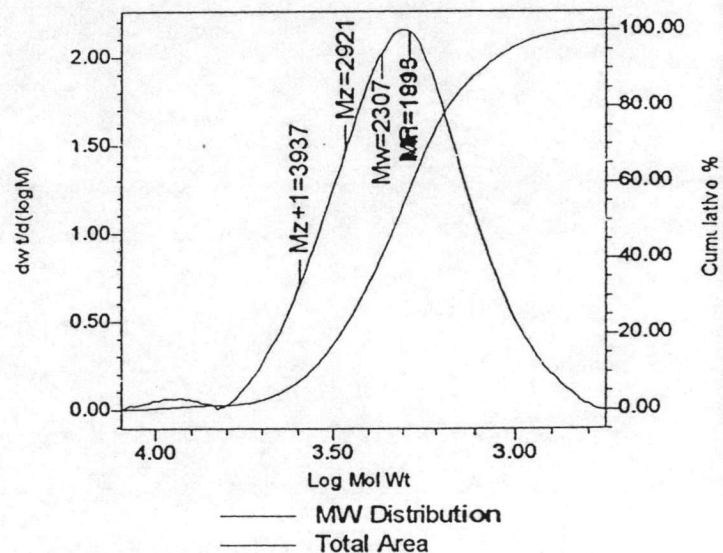
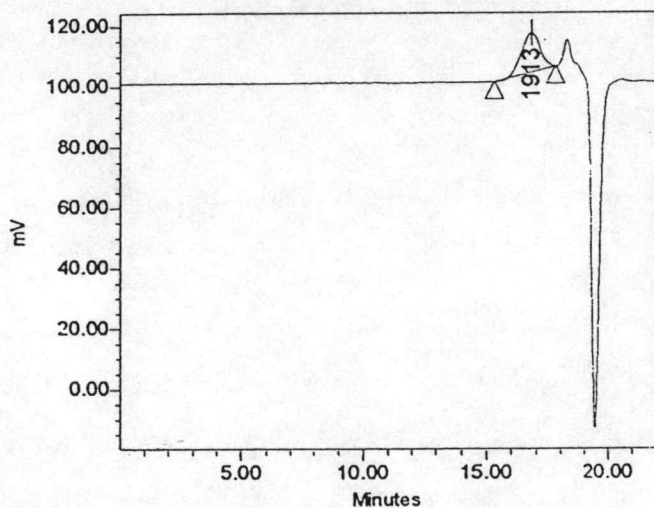


## Sample Information

SampleName P50 - W(12)  
 Vial 11  
 Injection 1  
 Injection Volume 100.00 ul  
 Channel SATIN  
 Run Time 22.0 Minutes

Sample Type Broad Unknown  
 Date Acquired 10/11/2000  
 Acq Method Set methG  
 Processing Method procG

### Auto-Scaled Chromatogram



### GPC Results

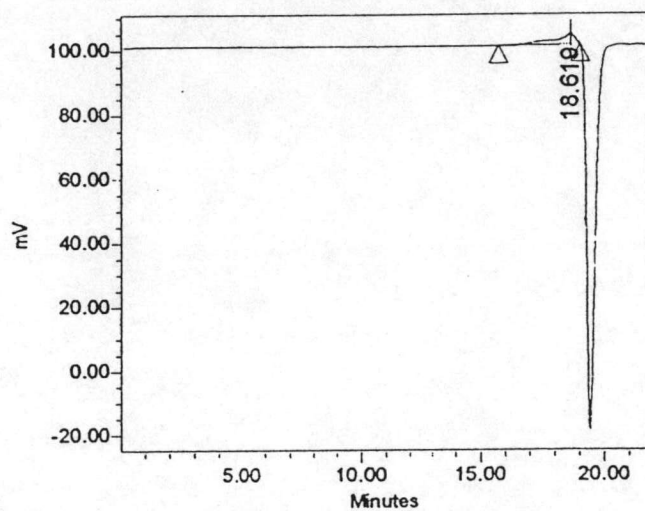
Dist Name	Mn	Mw	MP	Mz	Mz+1	Polydispersity
1	1895	2307	1913	2921	3937	1.217281

### Sample Information

SampleName P50 - W(16)  
Vial 12  
Injection 1  
Injection Volume 100.00  $\mu$ l  
Channel SATIN  
Run Time 22.0 Minutes

Sample Type Broad Unknown  
Date Acquired 10/11/2000  
Acq Method Set Meth G  
Processing Method Proc G

Auto-Scaled Chromatogram



**APPENDIX X**  
**GPC CHROMATOGRAM OF UNLOADED**  
**CHITOSAN MICROPARTICLES**  
**AT DIFFERENT TIME INTERVALS**

**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown LMW - W 0

Acquired : Thu May 31 2001  
Operator

Concentration :  
Injection Volume :  
Solvent : acetate buffer  
Column Set : Ultralinear hydrogel

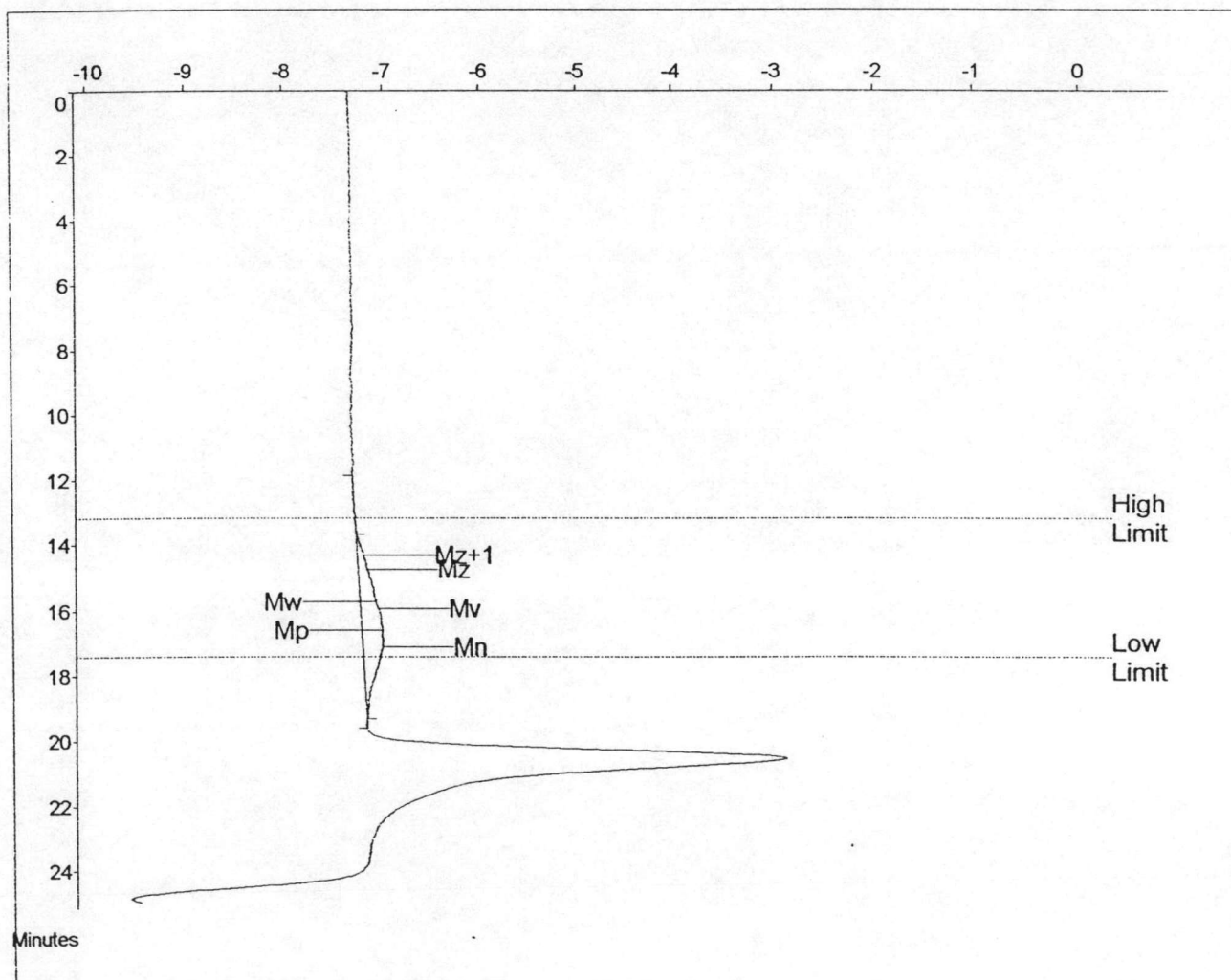
Detector : RI  
Temperature : 30 C  
Flow Rate : 0.600  
Standards : Pullulans

Method 23

Comments : Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using : Narrow Standards      Curve Used : 1st Order Polynomial  
Calibration Limits : 13.18 to 17.43 Mins      Last Calibrated : Fri Jun 01 08:12:46 2001  
Flow Rate Marker : found at : Not Found      in Standards at : 0.00 Mins

Broad Peak Start : 13.68      End : 19.33      Mins



**Molecular Weight Averages**

$M_p$ =	15445	$M_z$ =	125286
$M_n$ =	8584	$M_z+1$ =	203304
$M_w$ =	41025	$M_v$ =	32903
Polydispersity =	4.779	Peak Area =	8165



**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown            LMW - w 4

Acquired :        Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent :        acetate buffer  
Column Set :    Ultralinear hydrogel

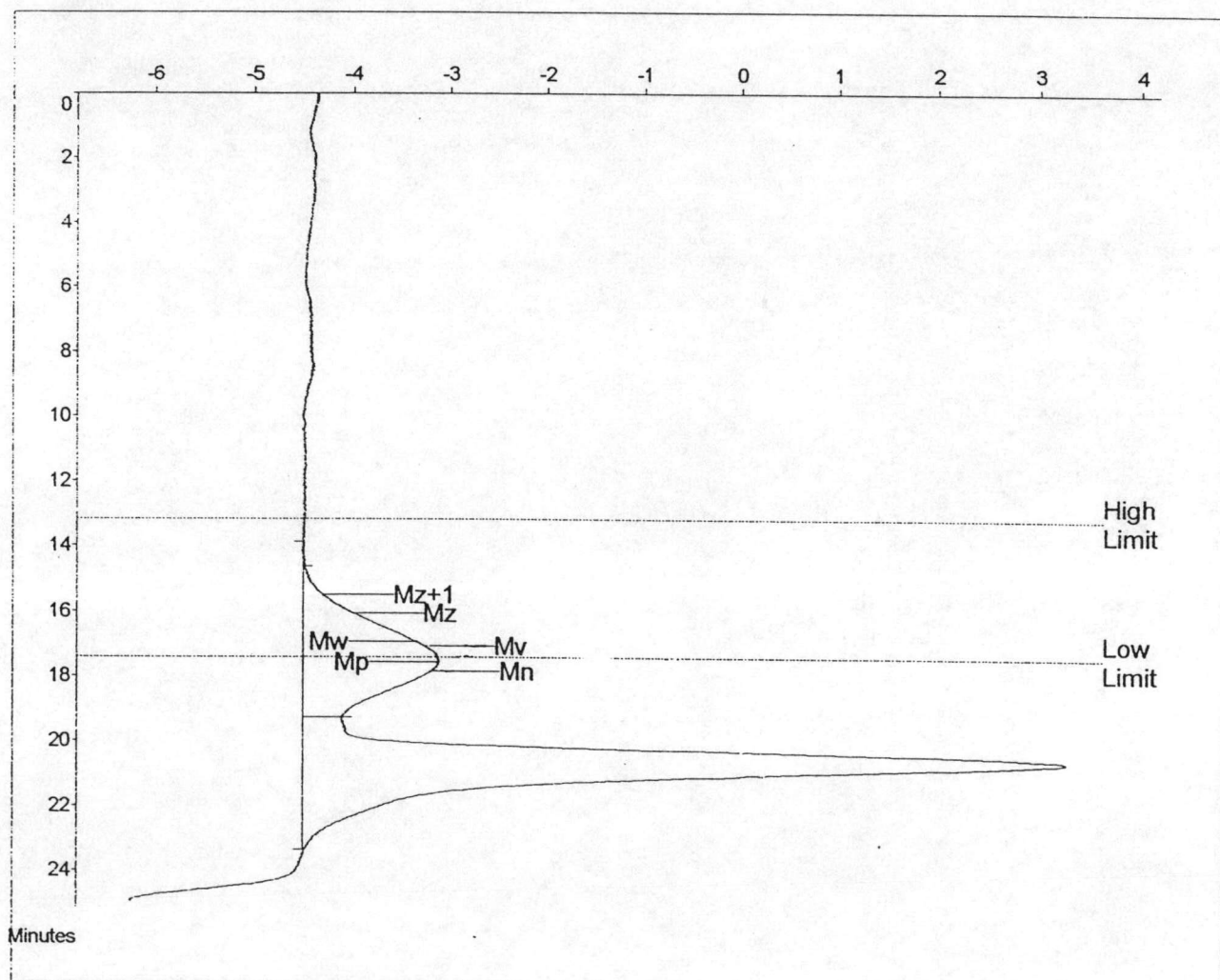
Detector :        RI  
Temperature :    30 C  
Flow Rate :      0.600  
Standards :      Pullulans

Method    23

Comments :        Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :    Narrow Standards                    Curve Used :    1st Order Polynomial  
Calibration Limits :    13.18                    to 17.43                    Mins            Last Calibrated :    Fri Jun 01 08:12:46 2001  
Flow Rate Marker :     found at :    Not Found            in Standards at :    0.00                    Mins

Broad Peak Start :    14.65                    End : 19.28                    Mins



**Molecular Weight Averages**

$M_p$ =	5197	$M_z$ =	28294
$M_n$ =	3764	$M_{z+1}$ =	53633
$M_w$ =	10483	$M_v$ =	8889
Polydispersity =	2.785	Peak Area =	41502

**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown                    LMW - W 8

Acquired :                Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent :                acetate buffer  
Column Set :            Ultralinear hydrogel

Detector :                RI  
Temperature :            30 C  
Flow Rate :               0.600  
Standards :               Pullulans

Method    23

Comments :                Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :        Narrow Standards

Curve Used :              1st Order Polynomial

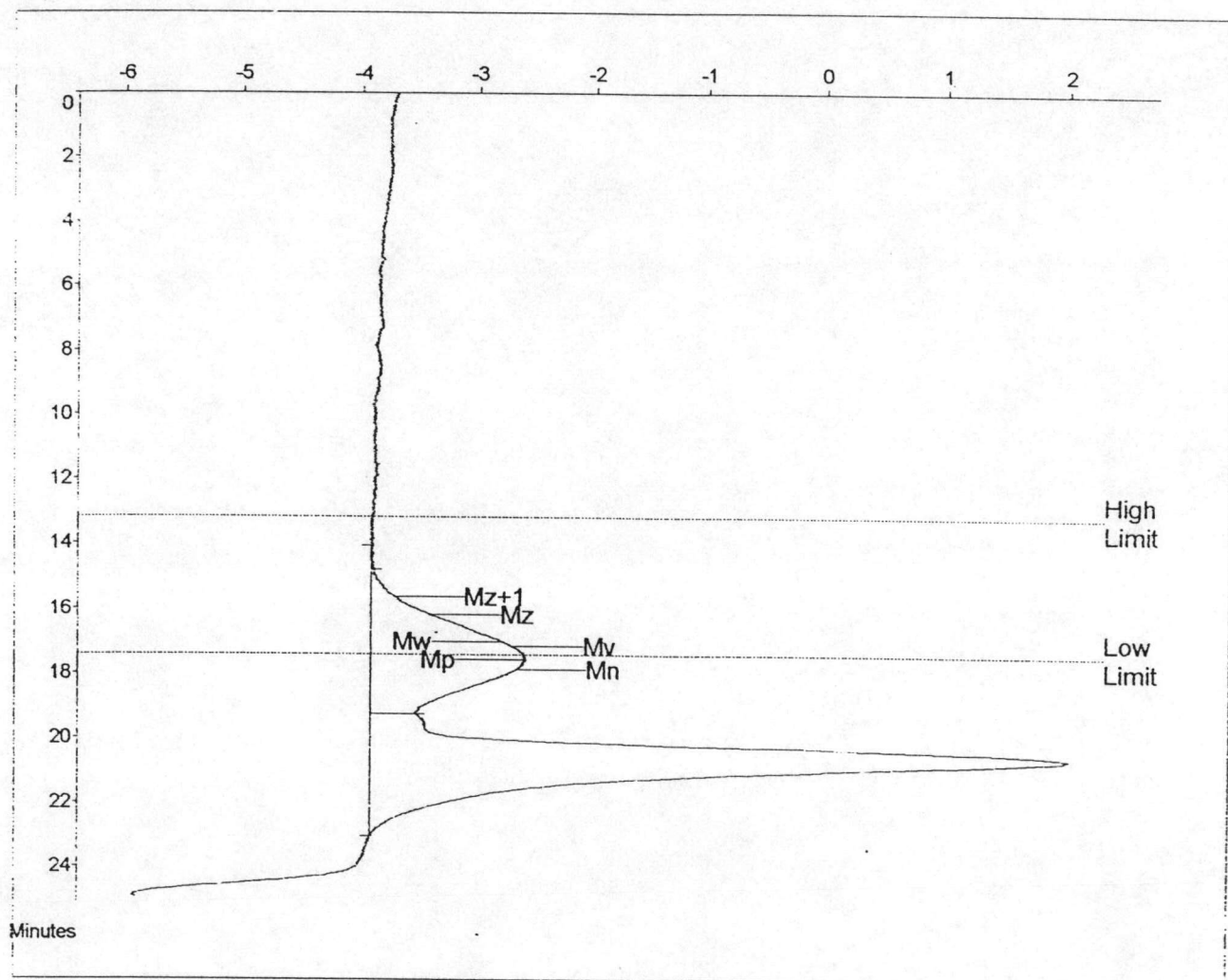
Calibration Limits :      13.18                    to 17.43                    Mins

Last Calibrated :        Fri Jun 01 08:12:46 2001

Flow Rate Marker :        found at :                Not Found

in Standards at :        0.00                    Mins

Broad Peak Start :        14.82                    End : 19.27                    Mins



**Molecular Weight Averages**

$M_p$ =	5197	$M_z$ =	24766
$M_n$ =	3710	$M_{z+1}$ =	46124
$M_w$ =	9711	$M_v$ =	8323
Polydispersity =	2.617	Peak Area =	37859

Polymer Laboratories  
PL LogiCal GPC Software

Unknown            LMW - W12

Acquired :        Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent :        acetate buffer  
Column Set :    Ultralinear hydrogel

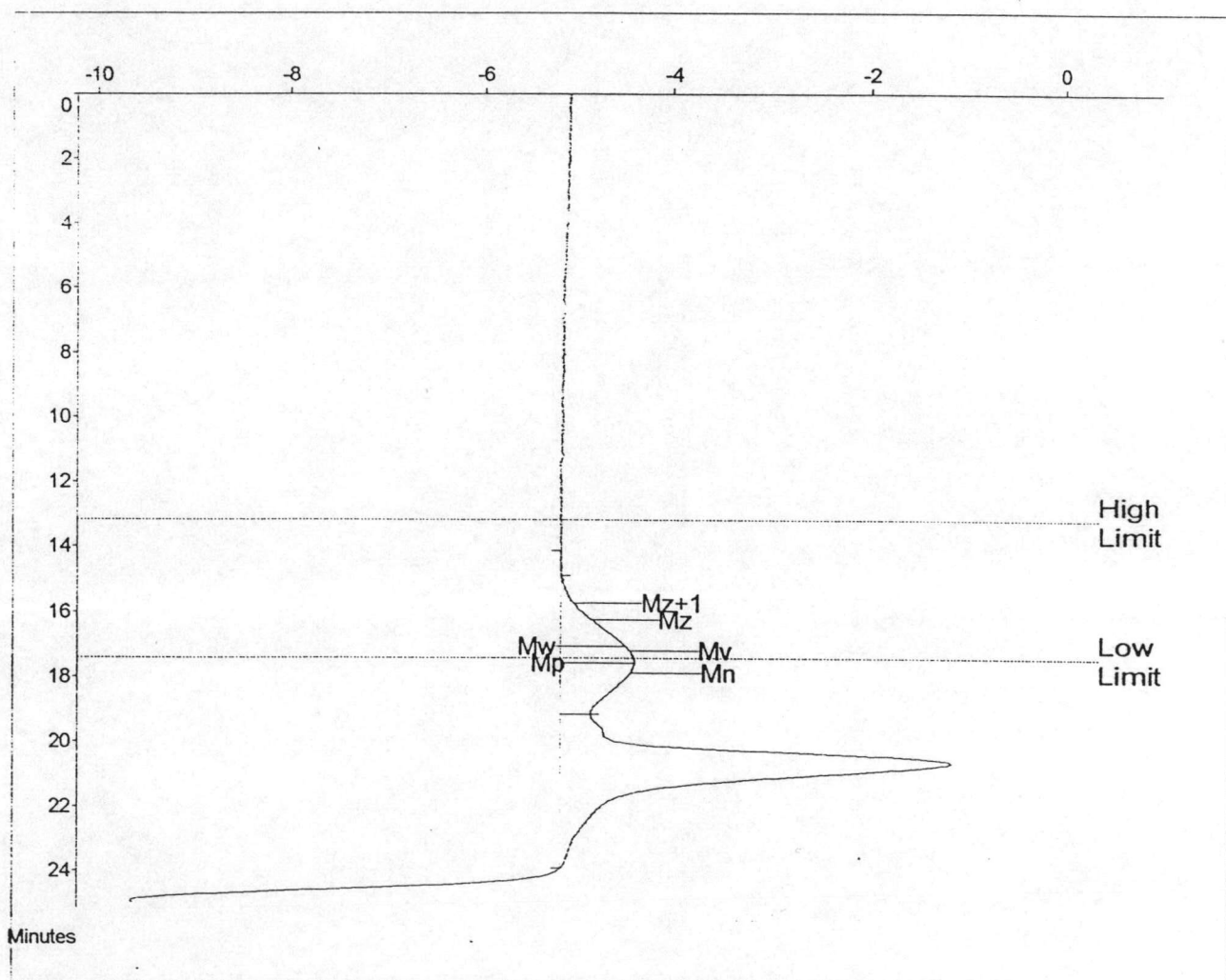
Detector :        RI  
Temperature :    30 C  
Flow Rate :      0.600  
Standards :      Pullulans

Method    23

Comments :        Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :    Narrow Standards                    Curve Used :    1st Order Polynomial  
Calibration Limits :    13.18            to 17.43            Mins    Last Calibrated :    Fri Jun 01 08:12:46 2001  
Flow Rate Marker :    found at :    Not Found    in Standards at :    0.00            Mins

Broad Peak Start :    14.90            End : 19.15            Mins



**Molecular Weight Averages**

$M_p$ =	5197	$M_z$ =	22719
$M_n$ =	3735	$M_{z+1}$ =	41250
$M_w$ =	9307	$M_v$ =	8034
Polydispersity =	2.492	Peak Area =	22336

**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown            LMW - W16

Acquired :        Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent :        acetate buffer  
Column Set :    Ultralinear hydrogel

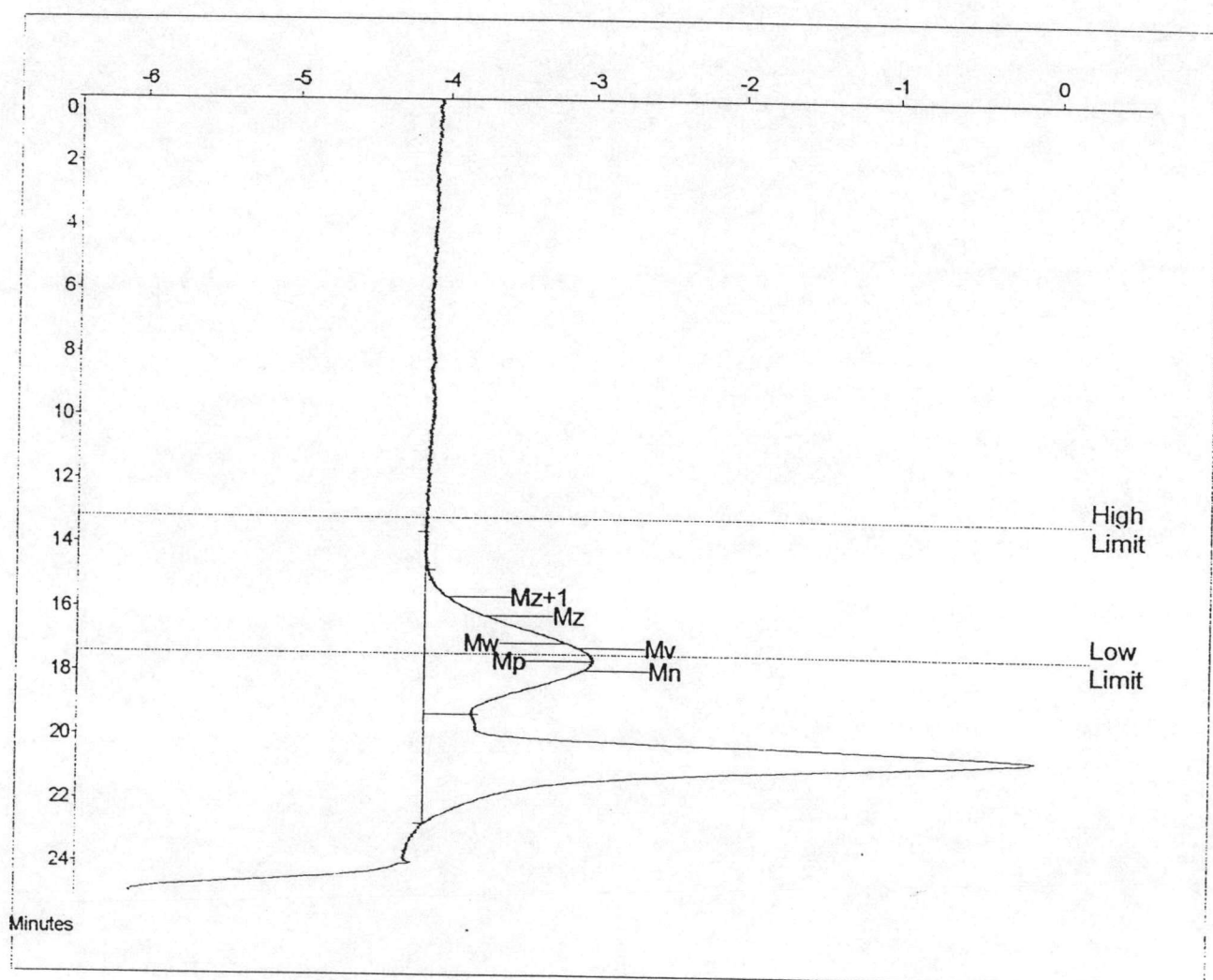
Detector :       RI  
Temperature :    30 C  
Flow Rate :      0.600  
Standards :      Pullulans

Method 23

Comments :       Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :    Narrow Standards                    Curve Used :    1st Order Polynomial  
Calibration Limits :    13.18                    to 17.43                    Mins            Last Calibrated :    Fri Jun 01 08:12:46 2001  
Flow Rate Marker :     found at :    Not Found            in Standards at :    0.00                    Mins

Broad Peak Start :    14.82                    End : 19.33                    Mins



**Molecular Weight Averages**

$M_p$ =	4821	$M_z$ =	23798
$M_n$ =	3500	$M_{z+1}$ =	45607
$M_w$ =	9138	$M_v$ =	7824
Polydispersity =	2.611	Peak Area =	33018



**Polymer Laboratories  
PL LogiCal GPC Software**

Unknown                  MMW - W 0

Acquired :              Thu May 31 2001  
Operator

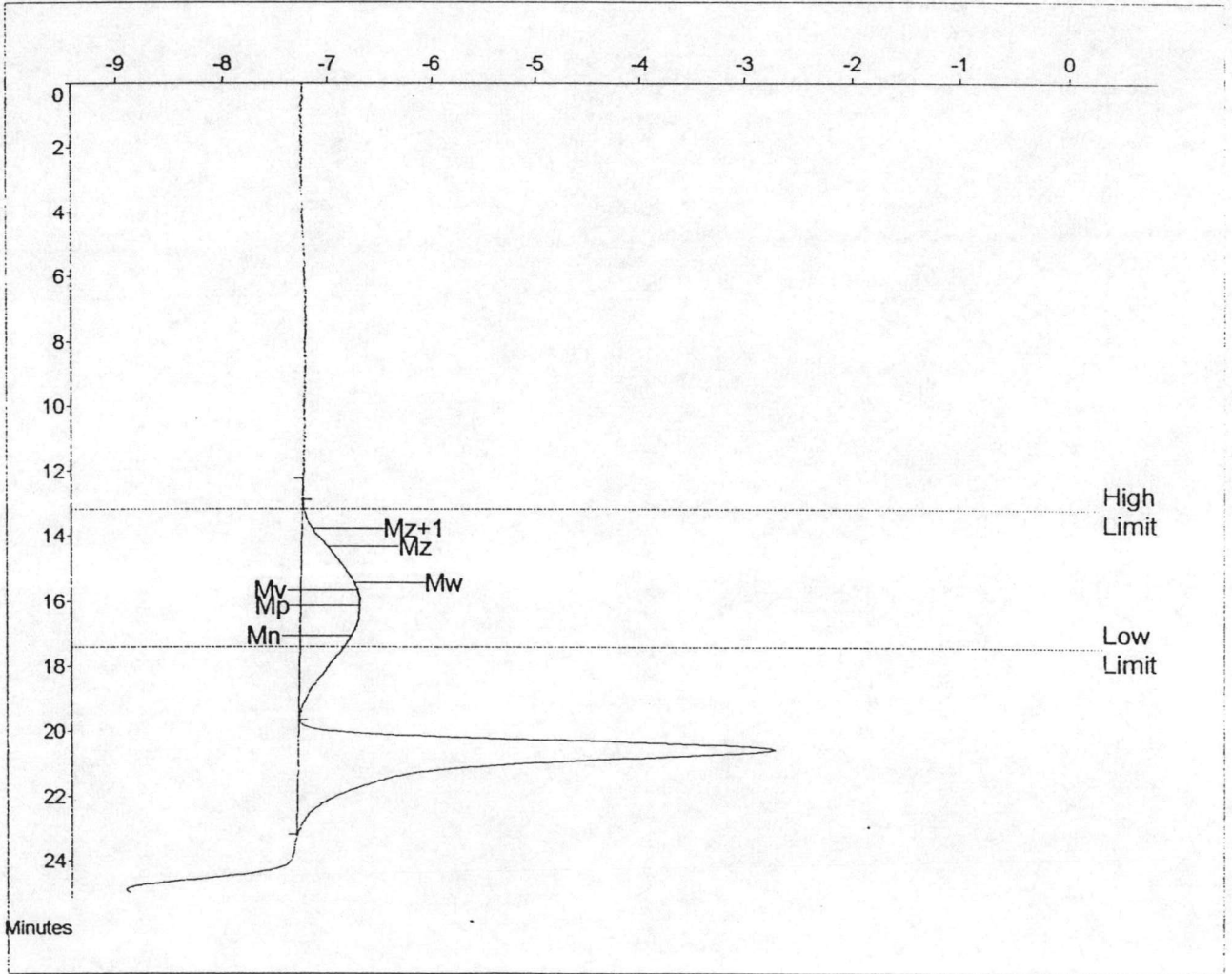
Concentration :  
Injection Volume :  
Solvent :                acetate buffer  
Column Set :            Ultralinear hydrogel

Detector :              RI  
Temperature :          30 C  
Flow Rate :             0.600  
Standards :             Pullulans

Method 23  
Comments :              Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :    Narrow Standards                              Curve Used :    1st Order Polynomial  
Calibration Limits :  13.18                      to 17.43                      Mins              Last Calibrated :    Fri Jun 01 08:12:46 2001  
Flow Rate Marker :                              found at :    Not Found              in Standards at :    0.00                      Mins

Broad Peak Start :    12.90                      End : 19.67                      Mins



**Molecular Weight Averages**

Mp =	25643	Mz =	197900
Mn =	9003	Mz+1 =	368888
Mw =	56718	Mv =	44418
Polydispersity =	6.300	Peak Area =	24773



**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown : MMW - w8

Acquired : Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent : acetate buffer  
Column Set : Ultralinear hydrogel

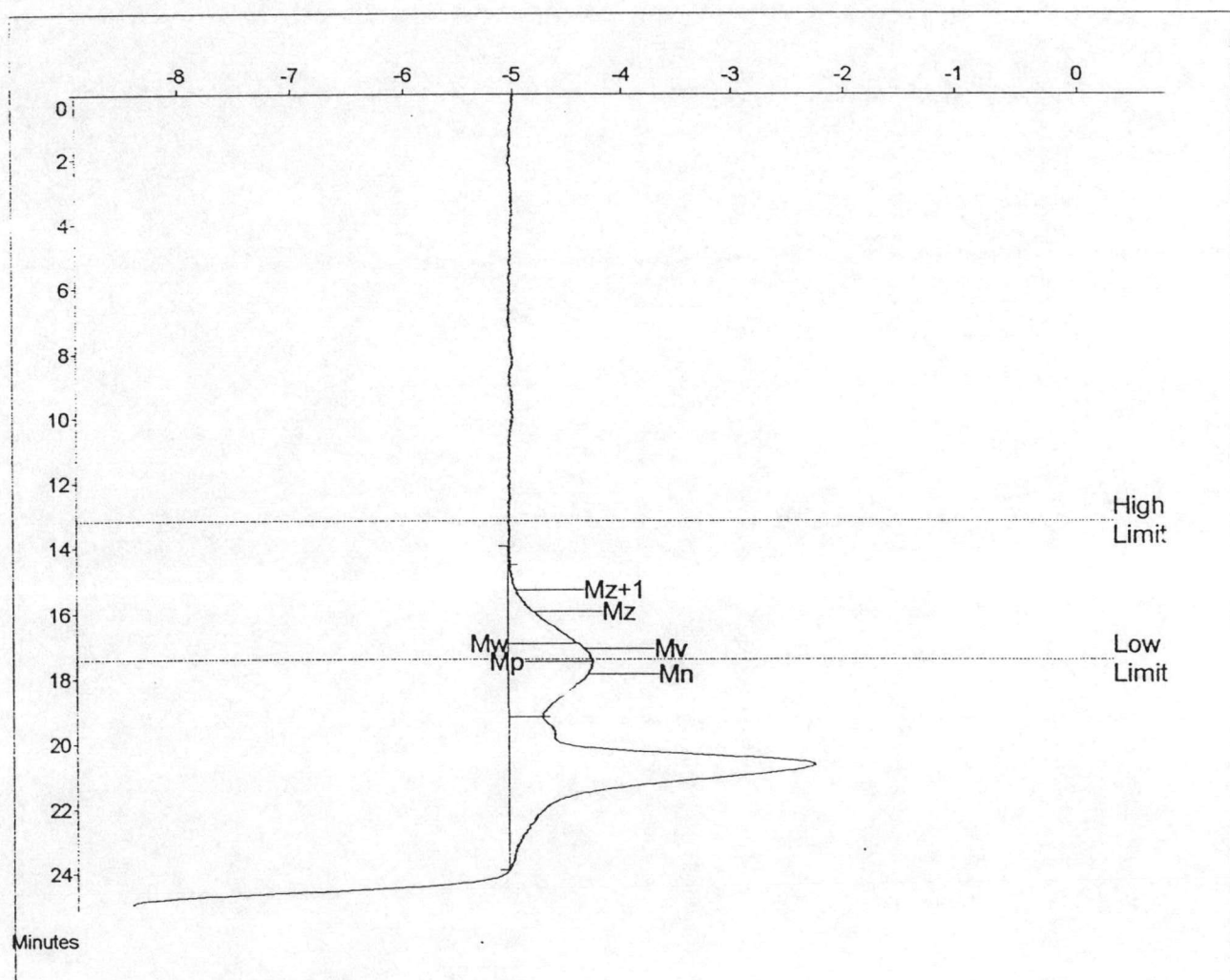
Detector : RI  
Temperature : 30 C  
Flow Rate : 0.600  
Standards : Pullulans

Method 23

Comments : Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using : Narrow Standards      Curve Used : 1st Order Polynomial  
Calibration Limits : 13.18      to 17.43      Mins      Last Calibrated : Fri Jun 01 08:12:46 2001  
Flow Rate Marker :      found at : Not Found      in Standards at : 0.00      Mins

Broad Peak Start : 14.53      End : 19.20      Mins



**Molecular Weight Averages**

Mp =	5603	Mz =	32187
Mn =	3673	Mz+1 =	67145
Mw =	10502	Mv =	8778
Polydispersity =	2.859	Peak Area =	23417

**Polymer Laboratories**  
**PL LogiCal GPC Software**

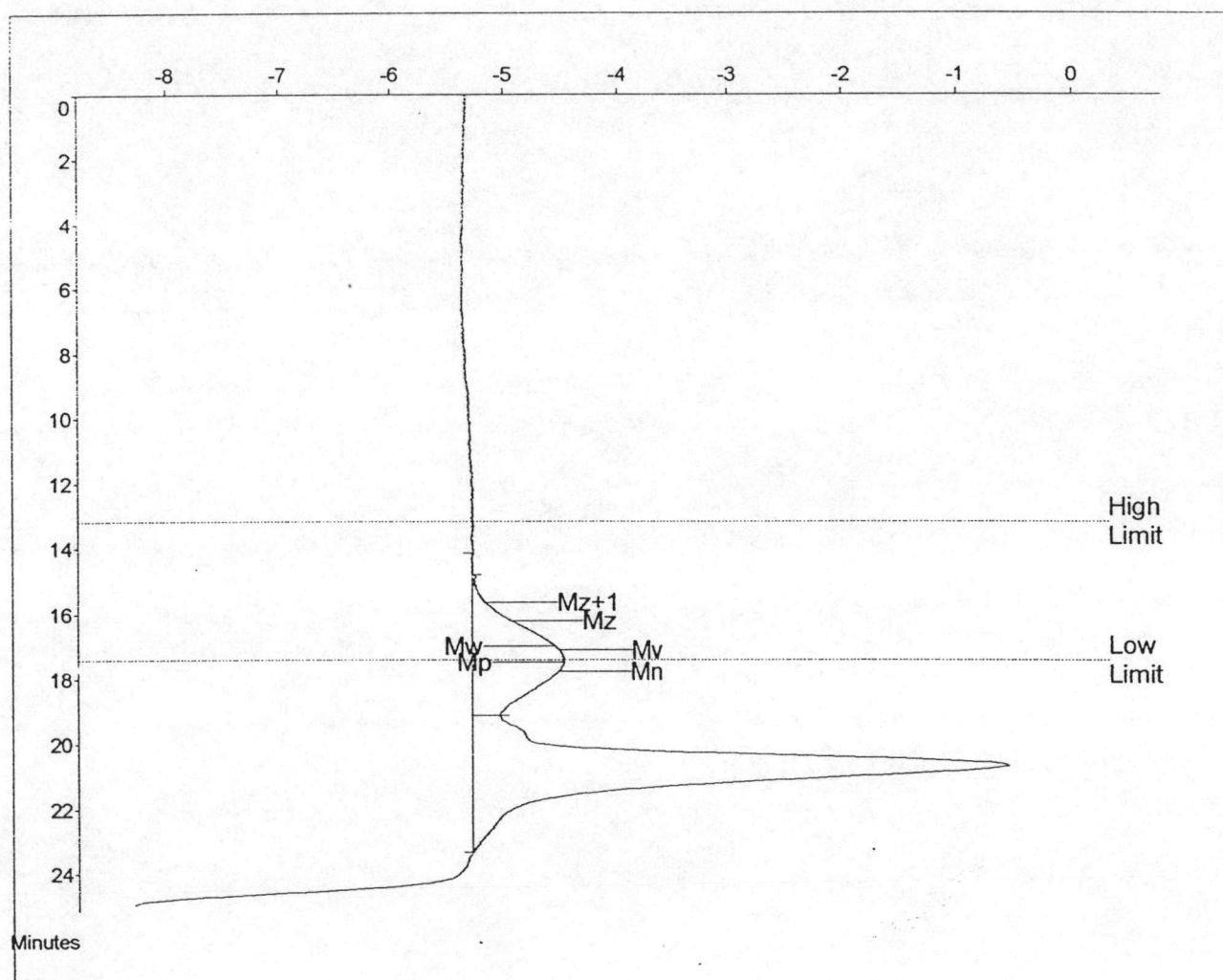
Unknown                      MMW - W 12                      Acquired :                      Fri Jun 01 2001  
Operator

Concentration :                      Detector :                      RI  
Injection Volume :                      Temperature :                      30 C  
Solvent :                      acetate buffer                      Flow Rate :                      0.600  
Column Set :                      Ultralinear hydrogel                      Standards :                      Pullulans

Method 23  
Comments :                      Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :                      Narrow Standards                      Curve Used :                      1st Order Polynomial  
Calibration Limits :                      13.18                      to 17.43                      Mins                      Last Calibrated :                      Fri Jun 01 08:12:46 2001  
Flow Rate Marker :                      found at :                      Not Found                      in Standards at :                      0.00                      Mins

Broad Peak Start :                      14.82                      End : 19.13                      Mins



**Molecular Weight Averages**

Mp =	5709	Mz =	23755
Mn =	4060	Mz+1 =	44718
Mw =	9924	Mv =	8616
Polydispersity =	2.444	Peak Area =	22815



**Polymer Laboratories  
PL LogiCal GPC Software**

Unknown MMW - W 1b

Acquired : Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent : acetate buffer  
Column Set : Ultralinear hydrogel

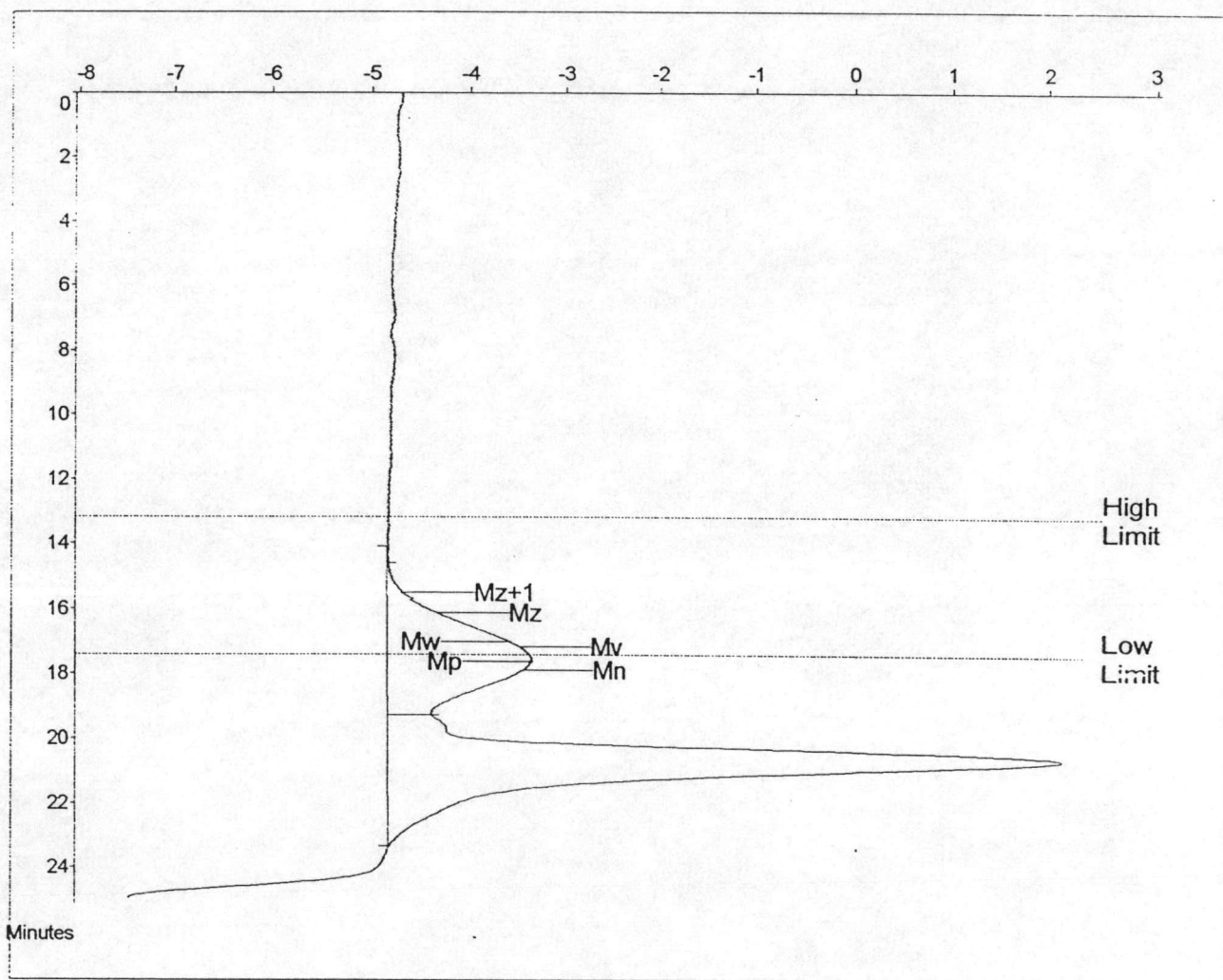
Detector : RI  
Temperature : 30 C  
Flow Rate : 0.600  
Standards : Pullulans

Method 23

Comments : Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using : Narrow Standards      Curve Used : 1st Order Polynomial  
Calibration Limits : 13.18 to 17.43 Mins      Last Calibrated : Fri Jun 01 08:12:46 2001  
Flow Rate Marker : found at : Not Found      in Standards at : 0.00 Mins

Broad Peak Start : 14.62      End : 19.28      Mins



**Molecular Weight Averages**

Mp =	4821	Mz =	26100
Mn =	3651	Mz+1 =	53140
Mw =	9625	Mv =	8211
Polydispersity =	2.636	Peak Area =	42274

**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown : HMW - W0

Acquired : Thu May 31 2001  
Operator :

Concentration :  
Injection Volume :  
Solvent : acetate buffer  
Column Set : Ultralinear hydrogel

Detector : RI  
Temperature : 30 C  
Flow Rate : 0.600  
Standards : Pullulans

Method : 23

Comments : Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using : Narrow Standards

Curve Used : 1st Order Polynomial

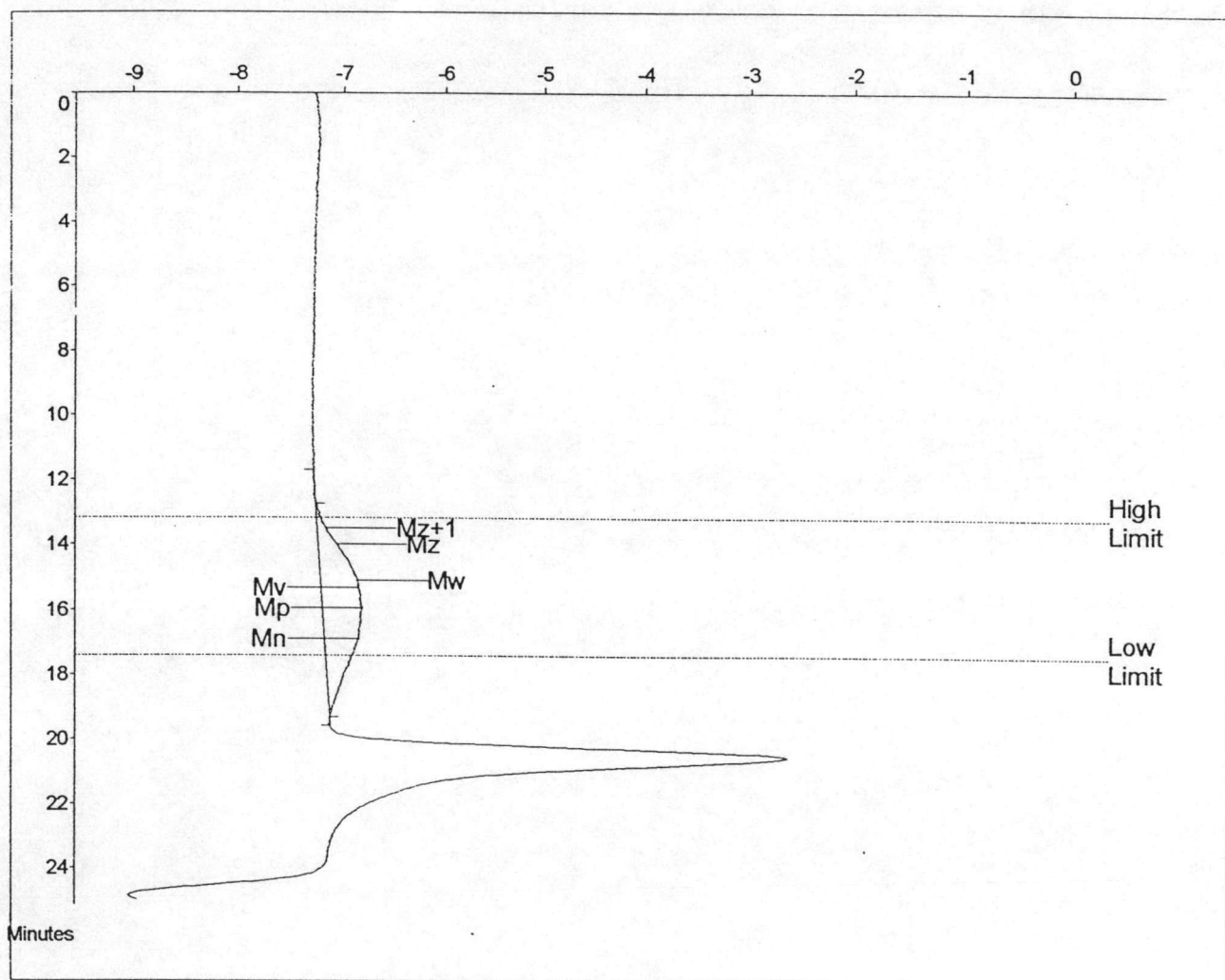
Calibration Limits : 13.18 to 17.43 Mins

Last Calibrated : Fri Jun 01 08:12:46 2001

Flow Rate Marker : found at : Not Found

in Standards at : 0.00 Mins

Broad Peak Start : 12.75 End : 19.33 Mins



**Molecular Weight Averages**

Mp =	31527	Mz =	291770
Mn =	10931	Mz+1 =	512106
Mw =	83261	Mv =	64408
Polydispersity =	7.617	Peak Area =	17489

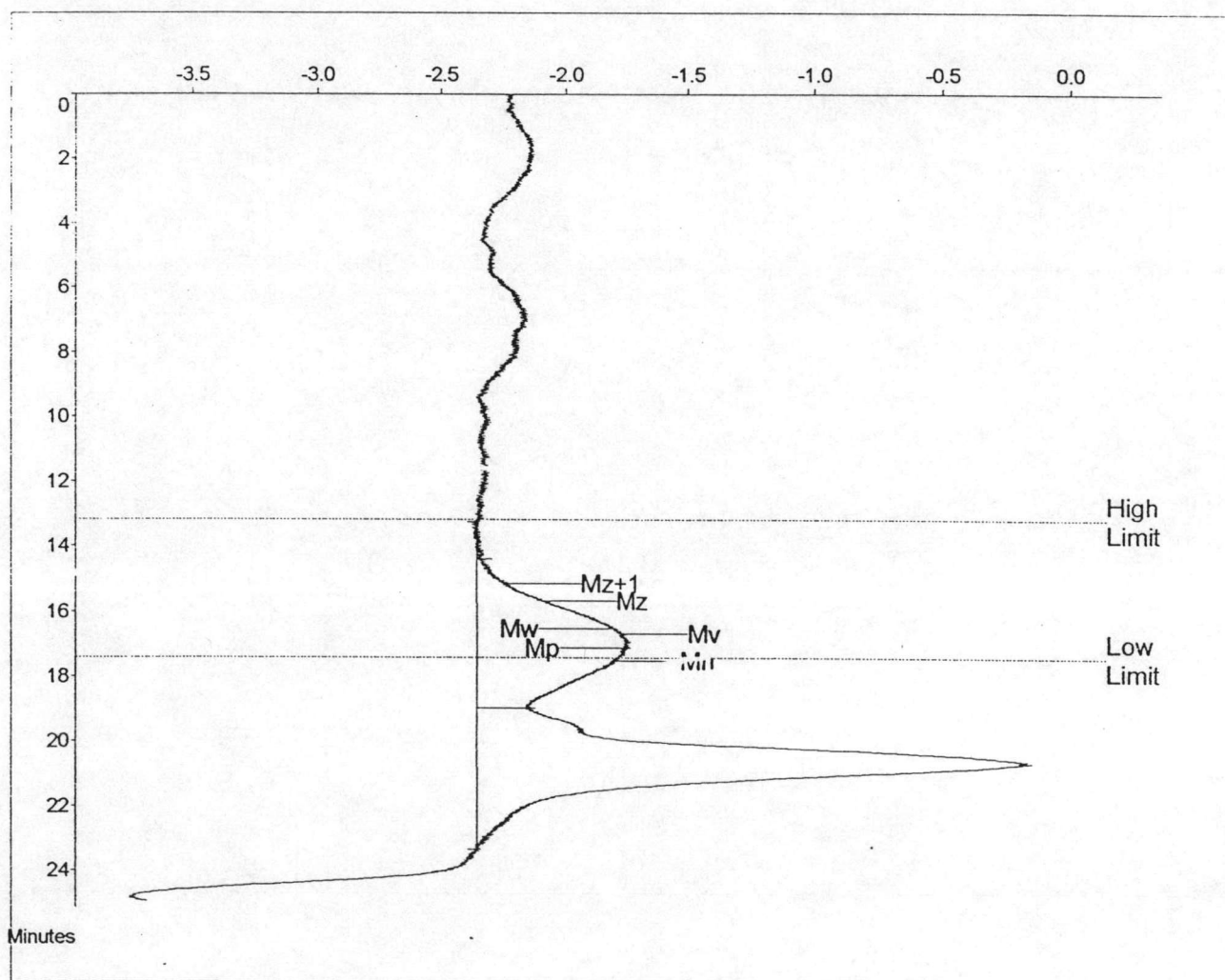
**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown                    HMW - W4                    Acquired :                    Fri Jun 01 2001  
Operator  
Concentration :                    Detector :                    RI  
Injection Volume :                    Temperature :                    30 C  
Solvent :                    acetate buffer                    Flow Rate :                    0.600  
Column Set :                    Ultralinear hydrogel                    Standards :                    Pullulans

Method    23  
Comments :                    Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :                    Narrow Standards                    Curve Used :                    1st Order Polynomial  
Calibration Limits :                    13.18                    to 17.43                    Mins                    Last Calibrated :                    Fri Jun 01 08:12:46 2001  
Flow Rate Marker :                    found at :                    Not Found                    in Standards at :                    0.00                    Mins

Broad Peak Start :                    14.40                    End : 18.98                    Mins



**Molecular Weight Averages**

Mp =	8629	Mz =	44317
Mn =	5507	Mz+1 =	79650
Mw =	16775	Mv =	14165
Polydispersity =	3.046	Peak Area =	19582

**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown            HMW - W 8

Acquired :        Fri Jun 01 2001  
 Operator

Concentration :  
 Injection Volume :  
 Solvent :        acetate buffer  
 Column Set :    Ultralinear hydrogel

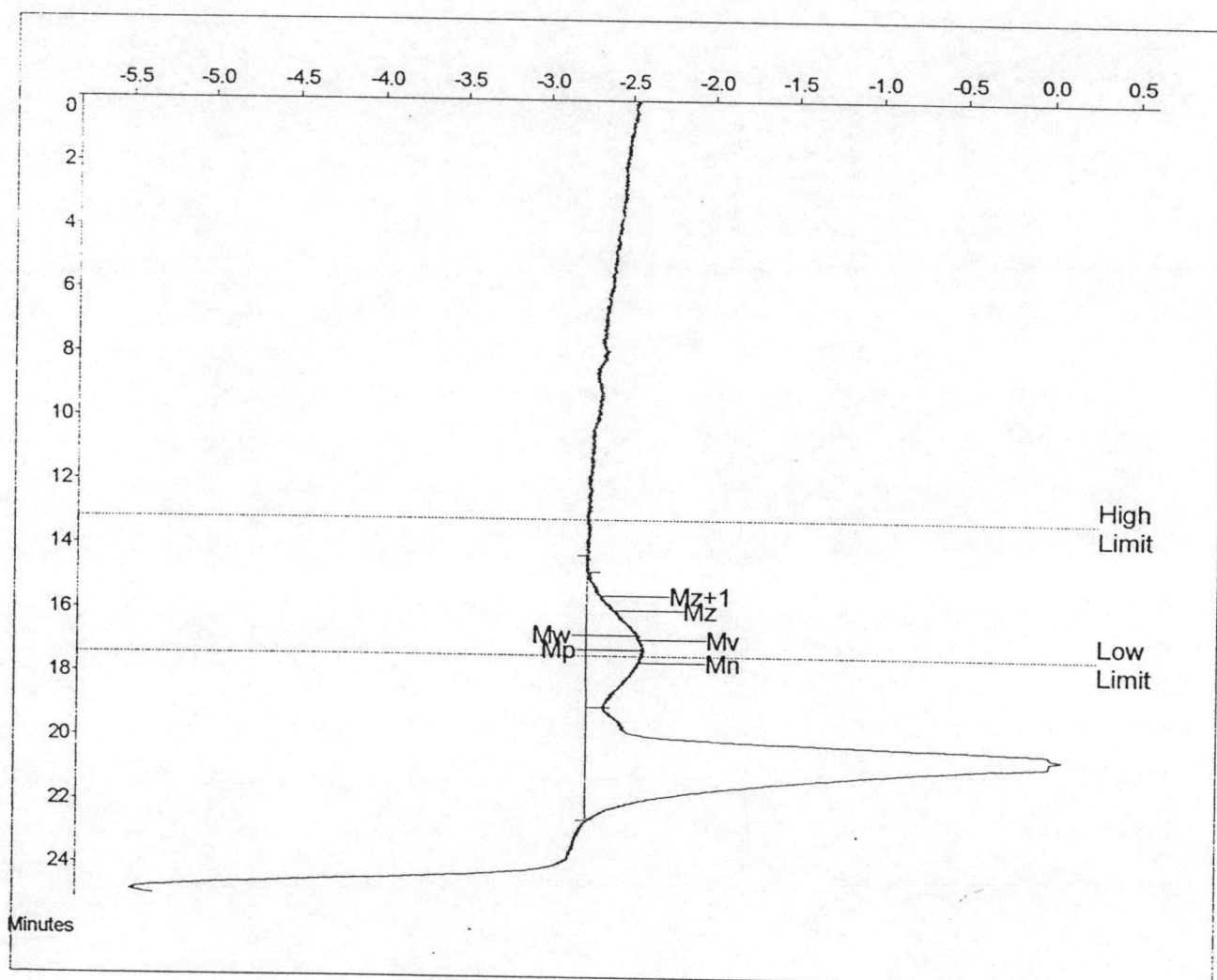
Detector :        RI  
 Temperature :    30 C  
 Flow Rate :      0.600  
 Standards :      Pullulans

Method 23

Comments :        Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using :    Narrow Standards                    Curve Used :    1st Order Polynomial  
 Calibration Limits :    13.18            to 17.43            Mins    Last Calibrated :    Fri Jun 01 08:12:46 2001  
 Flow Rate Marker :     found at :    Not Found    in Standards at :    0.00            Mins

Broad Peak Start :    14.82            End : 19.05            Mins



**Molecular Weight Averages**

Mp =	7566	Mz =	30407
Mn =	4811	Mz+1 =	51712
Mw =	12778	Mv =	11004
Polydispersity =	2.656	Peak Area =	10602





**Polymer Laboratories**  
**PL LogiCal GPC Software**

Unknown HMW - w 16

Acquired : Fri Jun 01 2001  
Operator

Concentration :  
Injection Volume :  
Solvent : acetate buffer  
Column Set : Ultralinear hydrogel

Detector : RI  
Temperature : 30 C  
Flow Rate : 0.600  
Standards : Pullulans

Method 23

Comments : Acetate buffer = 1M AcOH : 1M NaOAc (1:1)

Calibration Using : Narrow Standards

Curve Used : 1st Order Polynomial

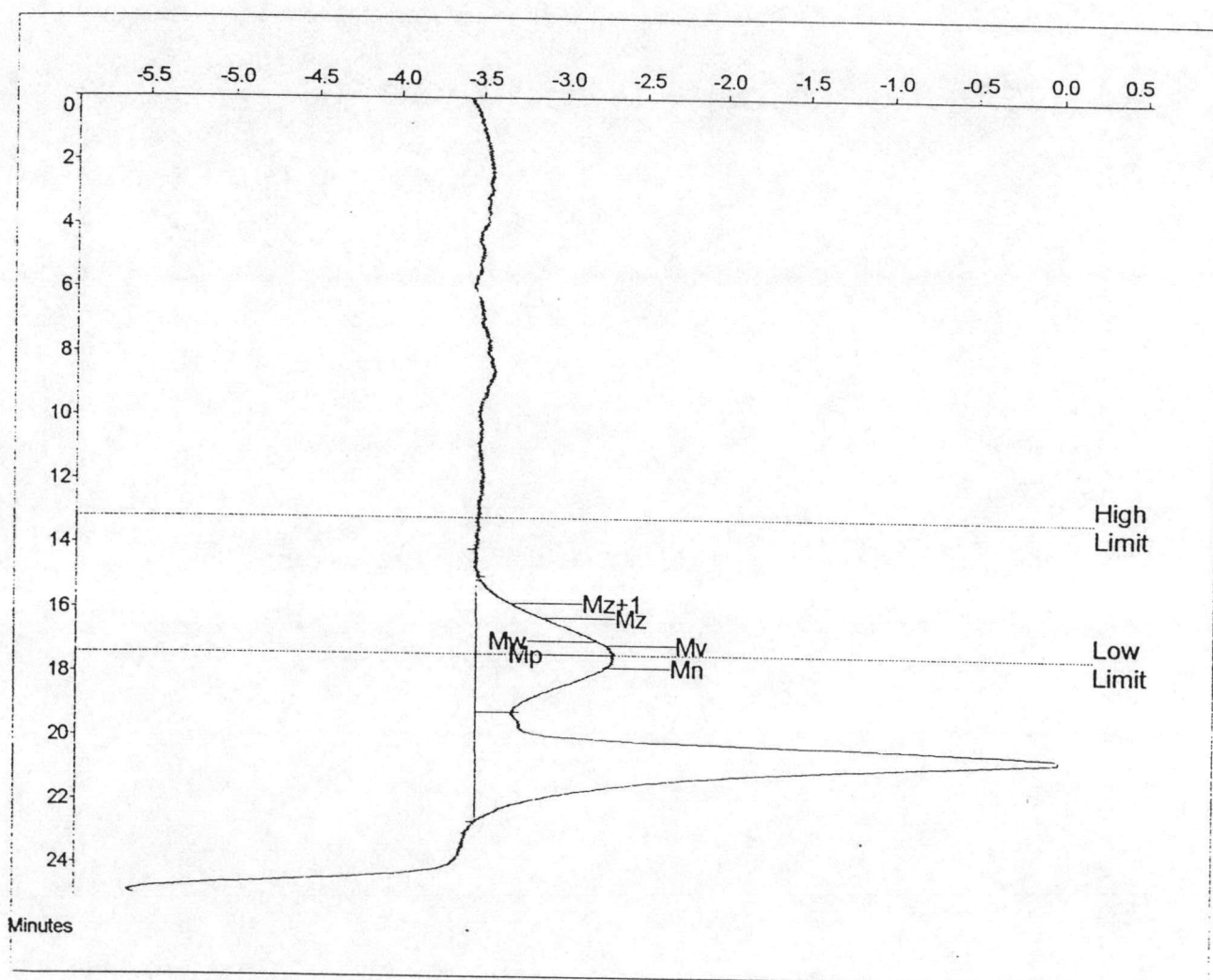
Calibration Limits : 13.18 to 17.43 Mins

Last Calibrated : Fri Jun 01 08:12:46 2001

Flow Rate Marker : round at : Not Found

in Standards at : 0.00 Mins

Broad Peak Start : 15.03 End : 19.23 Mins



**Molecular Weight Averages**

Mp =	6154	Mz =	22240
Mn =	3953	Mz+1 =	37142
Mw =	9855	Mv =	8575
Polydispersity =	2.493	Peak Area =	23816

**APPENDIX XI**  
**IN VITRO ANTIGEN RELEASE**  
**FROM PLGA MICROPARTICLES**

Table 37 In vitro antigen release from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
DL-PLA	1.5	250	9	3.83	8.00	11.88	15.20	18.74	24.34	27.65	30.97	33.14
			12	4.48	9.07	13.23	17.17	20.72	25.69	29.30	32.69	34.93
			15	5.49	10.89	15.19	18.98	22.18	27.67	31.17	34.77	37.16
		500	9	4.86	10.52	15.62	20.16	23.48	28.58	31.62	33.91	35.27
			12	6.17	11.77	16.40	21.17	24.53	29.81	33.03	35.51	37.38
			15	8.06	13.14	17.86	22.49	26.01	31.80	34.82	37.59	39.46
		750	9	5.60	11.35	16.71	21.18	24.74	29.92	32.77	35.62	37.82
			12	7.44	13.13	18.45	22.95	26.44	31.28	34.38	37.39	39.41
			15	9.15	15.13	20.23	24.76	28.13	32.17	35.77	38.83	41.12
	3	250	9	2.92	6.65	10.68	14.15	17.32	22.66	26.19	29.31	31.02
			12	3.62	7.34	11.45	15.07	18.59	24.31	27.79	30.73	32.49
			15	4.94	9.17	13.16	16.95	20.24	25.72	29.21	32.90	34.99
		500	9	4.26	8.83	12.97	17.14	20.97	26.54	30.20	32.83	34.26
			12	5.81	10.19	14.75	19.19	22.95	28.59	31.89	34.43	35.77
			15	7.59	12.53	17.01	21.20	24.90	30.61	33.75	36.44	37.94
		750	9	4.79	9.91	14.71	19.35	23.35	27.75	31.04	33.92	35.68
			12	6.21	11.84	16.74	21.49	24.65	29.23	32.24	35.24	36.98
			15	8.01	13.74	18.90	23.33	26.85	31.89	34.85	37.57	39.49
	5	250	9	2.13	5.60	9.37	12.55	15.28	20.28	23.56	26.83	28.72
			12	3.09	6.83	10.76	14.19	17.09	22.25	25.49	28.93	30.89
			15	4.16	8.12	12.13	15.59	18.76	23.96	27.52	31.13	33.61
		500	9	3.62	7.20	11.03	14.57	18.15	23.19	26.30	29.88	31.74
			12	4.19	8.55	12.96	17.43	20.97	26.16	29.83	33.19	34.76
			15	5.18	9.95	14.72	19.38	23.05	28.69	32.50	35.84	37.40
750		9	4.06	8.09	12.00	15.80	19.73	25.19	28.80	31.99	33.59	
		12	5.18	9.98	14.20	18.80	22.17	27.62	31.13	34.18	35.86	
		15	7.05	12.42	16.97	21.48	25.49	30.91	34.14	36.84	38.60	



Table 37 In vitro antigen release from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
P 85:15	1.5	250	9	4.98	9.16	13.20	16.91	20.55	26.14	29.60	32.50	34.38
			12	5.61	10.07	14.43	18.38	22.01	27.83	31.15	34.06	36.16
			15	6.15	11.17	15.85	20.20	23.84	29.56	32.98	35.68	37.85
		500	9	5.48	11.06	16.10	20.52	24.26	29.72	32.46	35.33	36.88
			12	6.78	12.22	17.20	21.66	25.69	31.06	34.08	37.36	39.37
			15	8.99	14.50	19.67	23.94	27.74	32.98	36.21	39.68	41.85
		750	9	6.80	12.26	17.47	22.18	25.66	31.36	34.74	37.72	39.58
			12	8.18	14.06	19.06	23.82	27.47	33.39	37.25	40.65	42.74
			15	10.19	16.19	21.55	26.11	29.84	35.65	39.16	42.59	44.78
	3	250	9	3.72	7.64	11.50	15.47	18.99	24.18	27.84	31.09	33.11
			12	4.68	8.76	12.73	16.81	20.09	25.76	29.45	32.74	34.83
			15	5.67	10.14	14.61	18.68	22.39	28.17	31.69	34.67	36.57
		500	9	5.14	9.70	14.16	18.23	21.95	27.89	31.79	34.87	36.31
			12	6.35	11.25	15.93	20.22	23.78	29.38	33.20	36.13	37.74
			15	7.82	12.79	17.58	21.78	25.45	30.91	34.79	37.81	39.53
		750	9	6.12	11.49	16.33	20.44	24.27	29.93	33.65	36.73	38.64
			12	7.25	12.82	18.02	22.27	26.26	31.87	35.75	39.30	41.21
			15	8.44	14.95	20.31	24.83	28.33	34.18	38.38	41.95	43.84
	5	250	9	3.03	6.51	10.51	13.73	17.21	22.67	26.32	29.89	31.68
			12	3.60	7.68	11.88	15.41	19.18	24.11	27.79	31.19	33.23
			15	4.82	9.35	13.61	17.57	21.12	26.08	29.62	32.98	35.15
		500	9	4.28	8.70	12.40	16.16	19.80	25.70	29.57	33.17	35.10
			12	5.19	9.73	14.18	18.37	22.35	28.20	31.82	35.19	37.01
			15	5.87	11.40	16.18	20.59	24.24	30.06	33.99	37.18	38.99
750		9	5.49	10.45	14.62	18.66	22.50	28.45	31.73	34.40	36.17	
		12	6.51	11.74	16.60	21.02	24.87	30.87	34.22	37.17	38.93	
		15	7.81	13.65	18.76	23.14	27.34	33.46	36.91	39.88	41.76	

Table 37 In vitro antigen release from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
P 75:25	1.5	250	9	6.55	11.49	15.53	19.57	23.35	28.55	32.02	34.84	36.36
			12	7.61	12.53	16.84	20.92	24.79	30.09	33.69	36.43	38.29
			15	8.17	13.77	18.49	22.95	26.38	31.84	35.16	38.42	40.49
		500	9	7.21	13.10	17.80	22.33	25.68	31.48	34.85	38.11	40.36
			12	8.96	14.55	19.87	24.26	27.84	33.61	37.36	40.55	42.80
			15	10.49	16.47	21.98	26.38	30.21	36.15	40.17	43.29	45.49
		750	9	8.00	15.81	22.90	28.62	33.73	40.93	45.49	49.01	51.58
			12	9.31	17.40	24.36	30.21	35.60	42.79	47.47	51.02	53.22
			15	11.10	19.25	26.51	32.19	37.37	45.13	49.41	53.27	55.82
	3	250	9	5.71	10.35	14.09	18.13	21.73	27.18	30.52	33.69	35.42
			12	6.13	11.23	15.44	19.74	23.43	29.03	32.19	35.49	37.15
			15	7.18	12.53	17.18	21.70	25.29	30.69	34.05	37.25	39.30
		500	9	6.05	11.49	16.19	20.47	24.11	29.58	33.38	36.74	38.26
			12	7.16	13.03	18.20	22.55	25.96	31.48	35.48	38.77	40.65
			15	8.37	14.78	20.18	25.10	28.79	34.14	38.04	41.41	43.57
		750	9	7.18	13.31	18.49	23.78	28.42	35.41	39.83	43.80	45.56
			12	8.42	14.86	20.60	26.03	30.73	37.66	42.53	46.15	48.10
			15	9.57	16.38	21.87	27.44	32.33	39.72	44.91	48.99	51.38
	5	250	9	4.85	8.91	12.98	16.58	19.96	25.74	29.37	32.65	34.61
			12	5.16	9.67	13.77	17.81	21.25	27.30	30.85	34.09	36.18
			15	6.54	11.01	15.16	19.39	22.82	28.63	32.48	35.69	37.83
		500	9	5.16	9.95	14.37	18.51	21.98	28.02	31.65	34.84	36.96
			12	6.23	11.28	15.86	19.91	23.61	29.64	33.33	36.66	38.91
			15	7.45	12.79	17.65	21.98	25.70	31.80	35.37	38.97	41.27
750		9	6.18	11.78	16.62	20.91	24.87	30.96	35.78	41.05	43.78	
		12	7.27	12.68	17.73	21.86	25.92	32.63	37.57	42.66	45.69	
		15	8.59	14.05	19.08	23.26	27.30	34.36	39.47	44.69	47.84	

Table 37 In vitro antigen release from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
P 50:50	1.5	250	9	8.68	15.15	21.17	26.64	31.39	38.36	43.20	47.40	49.91
			12	10.50	17.41	24.18	30.31	35.18	42.02	46.26	50.55	53.02
			15	12.28	19.96	26.95	33.15	38.13	45.08	49.47	53.61	56.21
		500	9	9.49	17.15	23.51	28.54	32.91	39.32	43.64	47.95	51.19
			12	11.05	18.82	25.59	31.44	35.99	42.57	47.05	51.23	54.29
			15	12.91	21.01	27.98	33.86	38.78	45.69	50.34	54.83	57.59
		750	9	11.19	19.32	26.55	32.11	36.78	43.67	48.34	52.55	54.94
			12	12.25	20.98	28.19	34.01	38.81	45.49	49.98	54.26	56.37
			15	13.62	22.86	30.28	36.05	40.83	47.38	51.65	56.05	58.66
	3	250	9	7.34	13.72	19.61	24.89	29.29	36.28	40.68	44.65	47.11
			12	8.43	15.58	22.01	27.27	32.09	38.92	43.05	46.95	49.19
			15	10.31	17.54	24.04	29.96	34.65	41.50	45.49	49.31	51.79
		500	9	8.53	15.94	22.57	27.48	31.89	38.56	42.79	46.65	49.53
			12	9.80	17.29	24.13	29.47	34.00	41.04	45.18	49.22	51.92
			15	11.09	18.88	25.85	31.34	36.19	43.36	47.83	52.03	54.76
		750	9	9.91	17.39	24.03	29.75	34.50	41.20	45.90	50.13	52.79
			12	11.03	18.68	25.22	30.99	35.86	42.70	47.56	51.93	54.64
			15	12.14	20.06	26.70	32.52	37.70	44.66	49.48	53.80	56.80
	5	250	9	6.09	11.15	15.95	20.40	24.52	30.53	35.07	39.21	41.84
			12	7.42	12.46	17.46	22.00	26.10	32.55	37.07	41.26	44.04
			15	8.97	14.24	19.11	23.74	28.09	34.59	39.16	43.50	46.31
		500	9	7.01	12.82	18.15	22.72	26.57	32.82	37.36	42.33	45.32
			12	8.40	14.23	19.78	24.51	28.74	35.18	39.78	44.62	47.75
			15	9.80	16.30	22.05	26.81	31.30	37.79	42.56	47.19	50.10
750		9	8.17	15.59	21.92	27.14	31.69	38.98	43.78	48.65	51.52	
		12	9.44	16.81	23.30	28.83	33.62	40.86	45.78	50.40	53.46	
		15	11.03	18.51	25.10	30.70	35.61	42.79	47.82	52.90	55.76	



Table 38 In vitro antigen release from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
DL-PLA	1.5	250	9	3.17	6.67	9.97	13.66	16.90	21.39	24.29	26.67	27.99
			12	3.98	7.91	11.90	15.69	19.17	24.15	27.39	29.76	31.15
			15	4.82	9.40	13.62	17.53	20.78	26.15	29.64	32.65	34.46
		500	9	4.25	8.80	13.45	17.31	21.17	26.46	29.73	32.84	34.33
			12	5.58	10.15	14.92	18.97	22.53	28.26	31.46	34.20	35.72
			15	6.94	12.12	17.15	21.25	24.92	30.00	32.98	35.61	37.18
		750	9	4.77	9.55	14.92	18.82	22.05	27.26	31.16	34.40	36.10
			12	6.04	11.42	16.54	20.44	23.84	29.10	32.50	35.59	37.37
			15	7.49	13.08	18.15	22.65	26.16	31.37	34.66	37.60	39.82
	3	250	9	2.23	5.99	9.64	13.40	16.34	21.15	25.27	28.56	30.20
			12	3.09	7.06	10.60	14.24	17.66	22.96	26.82	29.91	31.79
			15	4.06	8.17	11.72	15.50	18.94	24.63	28.13	31.47	33.49
		500	9	3.52	7.58	11.32	15.41	19.21	25.04	28.25	31.11	33.01
			12	4.48	9.15	13.73	17.93	21.66	27.17	29.99	32.68	34.74
			15	5.73	10.88	15.74	20.25	24.09	29.05	32.11	34.68	36.40
		750	9	4.21	8.83	13.70	17.55	21.02	26.90	30.39	33.47	35.52
			12	5.13	10.29	14.95	19.35	23.25	28.49	31.95	34.88	36.69
			15	6.26	12.42	17.29	21.91	25.75	30.88	33.86	36.91	38.86
	5	250	9	2.07	5.61	8.63	11.56	14.50	19.26	22.61	25.89	27.96
			12	2.78	6.55	9.99	13.40	16.10	21.00	24.50	27.80	29.60
			15	3.88	7.90	11.55	14.89	17.85	22.49	26.25	29.68	31.67
		500	9	3.07	6.84	10.27	13.57	16.79	22.15	25.96	28.94	30.79
			12	3.72	7.90	11.70	15.50	18.50	24.60	28.10	31.30	33.40
			15	4.76	9.29	13.38	17.39	20.81	26.97	30.69	34.06	36.24
		750	9	3.56	7.80	11.37	14.89	17.73	23.50	27.48	30.79	32.91
			12	4.82	9.40	13.30	17.10	20.00	25.90	30.00	33.10	35.10
			15	6.13	11.35	15.59	19.49	23.09	28.58	32.24	35.65	37.87



Table 38 In vitro antigen release from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
P 85:15	1.5	250	9	4.23	8.38	12.46	15.95	19.39	24.69	28.42	31.60	33.47
			12	4.95	9.24	13.38	17.13	20.69	26.02	29.73	32.19	34.88
			15	5.81	10.23	14.66	18.65	22.10	27.72	31.24	34.49	36.59
		500	9	4.78	9.69	14.41	18.70	22.39	28.01	31.62	34.67	36.70
			12	6.17	11.19	16.00	20.31	24.19	29.99	33.36	36.35	38.48
			15	7.68	12.83	17.80	22.57	26.50	32.25	35.60	38.73	40.83
		750	9	5.50	11.00	15.80	20.19	24.14	29.80	33.31	36.60	39.10
			12	7.35	12.92	17.94	22.47	26.19	31.56	35.08	38.56	40.80
			15	9.33	14.91	20.00	24.50	28.28	33.45	37.00	40.71	43.01
	3	250	9	3.00	6.99	10.77	14.30	17.52	22.58	26.20	29.34	31.70
			12	3.89	8.19	12.30	16.00	19.51	24.69	28.12	31.36	33.68
			15	5.10	9.65	13.86	17.79	21.57	26.70	30.39	33.60	35.86
		500	9	4.25	8.93	13.28	17.06	20.54	26.26	29.79	32.74	34.55
			12	5.47	10.36	14.99	18.92	22.70	27.89	31.26	34.00	35.96
			15	6.23	11.68	16.34	20.59	24.45	29.76	33.00	35.81	37.68
		750	9	4.95	10.00	14.86	19.02	22.80	28.50	32.29	35.47	37.55
			12	6.15	12.00	16.96	21.55	25.40	30.60	34.18	37.60	39.78
			15	7.48	13.84	19.01	23.65	27.40	32.63	36.47	39.82	42.16
	5	250	9	2.51	6.13	9.75	12.95	16.00	21.01	24.20	27.63	29.73
			12	3.39	7.27	11.00	14.41	17.68	22.89	26.16	29.31	31.52
			15	4.34	8.63	12.45	16.12	19.63	24.80	28.13	31.48	33.60
		500	9	3.26	7.78	11.80	15.52	18.78	23.99	27.92	31.38	33.40
			12	4.10	8.81	13.12	16.96	20.22	25.62	29.62	33.04	35.15
			15	5.16	10.20	14.67	18.70	22.09	27.54	31.42	34.84	36.92
750		9	4.17	9.20	13.81	17.78	21.05	25.86	29.46	33.11	35.29	
		12	5.50	10.65	15.32	19.30	22.45	27.40	31.10	34.60	36.78	
		15	6.68	12.15	16.70	20.81	24.10	29.05	32.83	36.35	38.64	

Table 38 In vitro antigen release from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration ( % )	Amount of antigen used ( ug )	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
P 75:25	1.5	250	9	5.21	10.00	14.44	18.00	21.36	26.77	30.28	33.61	35.76
			12	6.17	11.15	15.63	19.32	22.85	28.18	31.60	34.98	37.10
			15	7.10	12.22	16.82	20.73	24.35	29.50	33.00	36.40	38.70
		500	9	5.68	11.42	16.30	20.66	24.55	30.10	33.90	37.40	39.65
			12	6.79	12.68	17.78	22.26	25.94	31.69	35.40	38.84	41.21
			15	8.07	14.20	19.46	23.96	27.93	33.38	37.18	40.75	42.90
		750	9	6.26	12.74	18.46	23.43	27.61	34.68	39.01	43.35	46.20
			12	7.41	14.44	20.23	25.32	29.99	36.61	40.98	45.37	48.10
			15	8.89	16.20	22.22	27.43	31.95	38.60	43.24	47.41	50.18
	3	250	9	4.15	9.10	13.30	16.65	19.72	24.54	28.07	31.31	33.46
			12	5.04	10.32	14.49	18.20	21.23	26.14	29.45	32.90	35.14
			15	6.27	11.64	15.90	19.53	22.70	27.66	31.26	34.63	37.05
		500	9	5.15	10.76	15.66	19.89	23.31	28.80	32.19	35.65	37.70
			12	5.89	12.10	17.16	21.61	24.97	30.59	34.19	37.70	39.95
			15	7.00	13.35	18.83	23.31	27.24	32.97	36.50	39.83	42.02
		750	9	6.00	12.18	17.95	22.74	27.13	33.06	36.93	40.69	43.25
			12	6.96	13.75	19.43	24.49	28.56	34.67	38.69	42.58	44.98
			15	8.03	15.18	21.03	26.00	30.11	36.12	40.47	44.49	46.88
	5	250	9	3.44	7.70	11.53	14.79	17.75	22.79	26.48	29.99	31.74
			12	4.35	8.70	12.60	15.86	19.01	24.16	28.03	31.40	33.38
			15	5.46	9.97	13.84	17.19	20.31	25.73	29.47	32.83	34.76
		500	9	4.12	8.75	12.99	16.57	20.09	25.52	30.00	33.98	36.37
			12	5.18	10.08	14.41	18.16	21.20	27.06	31.31	35.29	37.60
			15	6.57	11.38	15.78	19.45	22.79	28.40	32.59	36.55	38.92
750		9	5.00	10.67	15.45	19.87	23.68	29.05	33.01	36.96	39.74	
		12	6.02	11.91	16.94	21.13	24.98	30.72	34.82	38.79	41.35	
		15	7.23	13.20	18.34	22.68	26.63	32.51	36.55	40.50	43.41	

Table 38 In vitro antigen release from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	% Release								
				D1	D2	D3	D4	D5	D7	D9	D12	D15
P 50:50	1.5	250	9	7.04	14.63	20.81	26.44	31.16	37.79	42.02	45.58	48.05
			12	8.36	16.11	22.44	28.35	33.00	39.69	43.80	47.55	49.99
			15	9.81	17.85	24.48	30.44	35.10	41.90	45.88	49.69	52.12
		500	9	7.82	15.53	21.96	27.60	32.10	38.41	42.48	46.35	49.06
			12	9.25	17.03	23.72	29.29	34.18	40.56	44.71	48.45	51.33
			15	10.89	18.90	25.61	31.20	36.15	42.82	46.95	50.77	53.57
		750	9	8.36	16.63	23.86	29.76	34.32	40.72	45.15	49.10	51.78
			12	9.70	18.10	25.51	31.47	36.13	42.72	47.18	50.93	53.58
			15	11.66	20.20	27.41	33.28	38.22	44.73	48.84	52.81	55.42
	3	250	9	6.02	12.20	16.97	21.53	25.71	32.22	36.94	41.66	44.55
			12	7.21	13.67	18.83	23.70	28.01	34.68	39.55	44.35	47.17
			15	8.66	15.54	21.16	26.10	30.45	37.59	42.18	47.04	50.03
		500	9	6.61	13.81	19.77	25.43	30.07	36.69	40.77	45.06	47.59
			12	7.80	15.58	22.14	27.97	33.03	39.26	43.52	47.60	50.03
			15	9.35	17.78	24.65	30.81	35.57	42.17	46.29	50.54	53.01
		750	9	7.21	14.50	21.07	27.43	33.00	39.79	44.01	48.15	50.94
			12	8.64	16.74	23.60	30.25	35.19	41.64	46.03	50.08	52.76
			15	10.48	18.80	26.14	32.26	37.40	44.03	48.09	51.94	54.78
	5	250	9	4.95	10.31	14.86	19.31	22.87	28.90	33.26	37.55	39.98
			12	6.00	11.76	16.48	21.20	24.97	31.25	36.02	40.18	42.68
			15	7.15	13.31	18.30	22.94	27.01	33.69	38.33	42.84	45.48
		500	9	5.32	11.65	16.87	21.58	25.89	31.43	35.19	39.35	41.92
			12	6.45	13.18	18.78	23.63	27.98	34.21	38.17	42.32	45.05
			15	7.88	15.01	20.79	25.99	30.42	36.98	41.05	45.13	47.77
750		9	6.05	13.19	19.25	24.70	29.37	35.85	40.62	45.49	48.75	
		12	7.30	14.94	21.16	26.70	31.72	38.33	43.12	47.87	51.06	
		15	8.51	16.80	23.51	29.39	34.21	40.97	45.85	50.26	53.78	

Table 39 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
DL-PLA	1.5	250	9	0.9596	0.8596	0.9913
			12	0.9558	0.8555	0.9906
			15	0.9560	0.8586	0.9912
		500	9	0.9241	0.8166	0.9746
			12	0.9338	0.8397	0.9799
			15	0.9384	0.8607	0.9818
		750	9	0.9332	0.8291	0.9799
			12	0.9346	0.8446	0.9807
			15	0.9379	0.8550	0.9827
	3	250	9	0.9570	0.8466	0.9900
			12	0.9539	0.8552	0.9881
			15	0.9604	0.8702	0.9920
		500	9	0.9436	0.8452	0.9836
			12	0.9376	0.8527	0.9805
			15	0.9389	0.8619	0.9813
		750	9	0.9355	0.8309	0.9806
			12	0.9329	0.8353	0.9798
			15	0.9318	0.8465	0.9791
	5	250	9	0.9627	0.8388	0.9928
			12	0.9610	0.8519	0.9923
			15	0.9648	0.8682	0.9940
		500	9	0.9594	0.8610	0.9910
			12	0.9490	0.8471	0.9868
			15	0.9459	0.8504	0.9854
750		9	0.9534	0.8583	0.9880	
		12	0.9458	0.8517	0.9855	
		15	0.9370	0.8526	0.9811	



Table 39 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
P 85:15	1.5	250	9	0.9524	0.8642	0.9879
			12	0.9499	0.8628	0.9871
			15	0.9436	0.8544	0.9845
		500	9	0.9311	0.8306	0.9783
			12	0.9401	0.8503	0.9831
			15	0.9437	0.8651	0.9853
		750	9	0.9380	0.8477	0.9821
			12	0.9452	0.8621	0.9858
			15	0.9424	0.8668	0.9847
	3	250	9	0.9576	0.8573	0.9903
			12	0.9578	0.8670	0.9905
			15	0.9489	0.8619	0.9866
		500	9	0.9484	0.8578	0.9860
			12	0.9447	0.8586	0.9849
			15	0.9457	0.8677	0.9856
		750	9	0.9452	0.8532	0.9856
			12	0.9464	0.8592	0.9864
			15	0.9439	0.8572	0.9856
	5	250	9	0.9626	0.8584	0.9918
			12	0.9579	0.8525	0.9909
			15	0.9544	0.8576	0.9899
		500	9	0.9605	0.8662	0.9913
			12	0.9507	0.8596	0.9873
			15	0.9456	0.8507	0.9858
750		9	0.9438	0.8540	0.9840	
		12	0.9407	0.8531	0.9829	
		15	0.9386	0.8550	0.9821	

Table 39 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
P 75:25	1.5	250	9	0.9441	0.8619	0.9846
			12	0.9451	0.8684	0.9852
			15	0.9441	0.8625	0.9855
		500	9	0.9450	0.8560	0.9859
			12	0.9448	0.8661	0.9857
			15	0.9429	0.8692	0.9848
		750	9	0.9341	0.8349	0.9802
			12	0.9318	0.8400	0.9789
			15	0.9343	0.8495	0.9803
	3	250	9	0.9512	0.8662	0.9878
			12	0.9457	0.8578	0.9855
			15	0.9444	0.8589	0.9854
		500	9	0.9451	0.8521	0.9856
			12	0.9442	0.8537	0.9856
			15	0.9398	0.8517	0.9835
		750	9	0.9463	0.8583	0.9855
			12	0.9433	0.8588	0.9843
			15	0.9495	0.8701	0.9873
	5	250	9	0.9582	0.8699	0.9905
			12	0.9549	0.8652	0.9893
			15	0.9553	0.8759	0.9896
		500	9	0.9521	0.8584	0.9884
			12	0.9526	0.8651	0.9888
			15	0.9509	0.8678	0.9883
		750	9	0.9670	0.8751	0.9952
			12	0.9681	0.8858	0.9952
			15	0.9695	0.8954	0.9955

Table 39 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
P 50:50	1.5	250	9	0.9486	0.8633	0.9872
			12	0.9395	0.8572	0.9829
			15	0.9365	0.8575	0.9816
		500	9	0.9467	0.8555	0.9873
			12	0.9411	0.8560	0.9843
			15	0.9406	0.8618	0.9840
		750	9	0.9370	0.8510	0.9822
			12	0.9318	0.8474	0.9795
			15	0.9314	0.8484	0.9794
	3	250	9	0.9469	0.8543	0.9865
			12	0.9386	0.8467	0.9826
			15	0.9361	0.8524	0.9812
		500	9	0.9419	0.8470	0.9847
			12	0.9397	0.8513	0.9834
			15	0.9405	0.8566	0.9838
		750	9	0.9422	0.8548	0.9847
			12	0.9439	0.8613	0.9855
			15	0.9433	0.8638	0.9852
	5	250	9	0.9603	0.8709	0.9921
			12	0.9605	0.8799	0.9921
			15	0.9608	0.8878	0.9922
		500	9	0.9626	0.8719	0.9938
			12	0.9608	0.8780	0.9930
			15	0.9560	0.8763	0.9911
750		9	0.9516	0.8567	0.9892	
		12	0.9497	0.8617	0.9883	
		15	0.9507	0.8692	0.9888	

Table 40 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
DL-PLA	1.5	250	9	0.9463	0.8453	0.9847
			12	0.9431	0.8462	0.9834
			15	0.9504	0.8547	0.9878
		500	9	0.9444	0.8417	0.9847
			12	0.9407	0.8510	0.9827
			15	0.9328	0.8462	0.9793
		750	9	0.9467	0.8429	0.9865
			12	0.9419	0.8462	0.9844
			15	0.9395	0.8521	0.9832
	3	250	9	0.9611	0.8380	0.9918
			12	0.9595	0.8532	0.9908
			15	0.9596	0.8651	0.9909
		500	9	0.9507	0.8494	0.9865
			12	0.9410	0.8393	0.9830
			15	0.9326	0.8376	0.9790
		750	9	0.9496	0.8447	0.9874
			12	0.9414	0.8421	0.9835
			15	0.9340	0.8351	0.9803
	5	250	9	0.9684	0.8482	0.9946
			12	0.9629	0.8514	0.9929
			15	0.9638	0.8648	0.9937
		500	9	0.9615	0.8585	0.9914
			12	0.9589	0.8583	0.9908
			15	0.9574	0.8642	0.9904
750		9	0.9641	0.8625	0.9930	
		12	0.9585	0.8666	0.9910	
		15	0.9541	0.8649	0.9899	



Table 40 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
P 85:15	1.5	250	9	0.9570	0.8606	0.9904
			12	0.9543	0.8629	0.9892
			15	0.9534	0.8671	0.9891
		500	9	0.9469	0.8462	0.9862
			12	0.9447	0.8554	0.9851
			15	0.9422	0.8607	0.9838
		750	9	0.9479	0.8484	0.9871
			12	0.9458	0.8581	0.9863
			15	0.9473	0.8699	0.9872
	3	250	9	0.9616	0.8496	0.9925
			12	0.9570	0.8532	0.9908
			15	0.9546	0.8616	0.9897
		500	9	0.9496	0.8477	0.9872
			12	0.9436	0.8496	0.9847
			15	0.9391	0.8471	0.9826
		750	9	0.9488	0.8477	0.9873
			12	0.9437	0.8455	0.9853
			15	0.9425	0.8498	0.9850
	5	250	9	0.9642	0.8482	0.9934
			12	0.9602	0.8564	0.9917
			15	0.9577	0.8613	0.9909
		500	9	0.9593	0.8455	0.9918
			12	0.9574	0.8523	0.9912
			15	0.9537	0.8563	0.9897
750		9	0.9535	0.8420	0.9901	
		12	0.9525	0.8543	0.9897	
		15	0.9523	0.8620	0.9897	

Table 40 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
P 75:25	1.5	250	9	0.9547	0.8599	0.9902
			12	0.9525	0.8639	0.9893
			15	0.9517	0.8674	0.9891
		500	9	0.9483	0.8484	0.9875
			12	0.9466	0.8535	0.9868
			15	0.9440	0.8570	0.9856
		750	9	0.9528	0.8517	0.9895
			12	0.9490	0.8524	0.9879
			15	0.9470	0.8571	0.9871
	3	250	9	0.9555	0.8469	0.9910
			12	0.9539	0.8519	0.9905
			15	0.9553	0.8640	0.9911
		500	9	0.9461	0.8410	0.9865
			12	0.9451	0.8417	0.9863
			15	0.9396	0.8438	0.9834
		750	9	0.9448	0.8416	0.9858
			12	0.9436	0.8443	0.9855
			15	0.9442	0.8493	0.9859
	5	250	9	0.9613	0.8539	0.9926
			12	0.9615	0.8654	0.9926
			15	0.9599	0.8740	0.9920
		500	9	0.9657	0.8635	0.9943
			12	0.9637	0.8699	0.9938
			15	0.9633	0.8809	0.9936
750		9	0.9557	0.8490	0.9911	
		12	0.9546	0.8562	0.9906	
		15	0.9548	0.8643	0.9907	

Table 40 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from PLGA microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Amount of antigen used (ug)	Sonication	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
P 50:50	1.5	250	9	0.9361	0.8328	0.9814
			12	0.9348	0.8386	0.9807
			15	0.9323	0.8417	0.9795
		500	9	0.9369	0.8359	0.9821
			12	0.9359	0.8429	0.9815
			15	0.9356	0.8499	0.9813
		750	9	0.9331	0.8306	0.9801
			12	0.9307	0.8353	0.9788
			15	0.9304	0.8439	0.9786
	3	250	9	0.9621	0.8651	0.9934
			12	0.9593	0.8679	0.9923
			15	0.9566	0.8699	0.9913
		500	9	0.9429	0.8385	0.9849
			12	0.9356	0.8347	0.9813
			15	0.9329	0.8367	0.9799
		750	9	0.9380	0.8369	0.9820
			12	0.9331	0.8347	0.9798
			15	0.9301	0.8393	0.9783
	5	250	9	0.9607	0.8594	0.9927
			12	0.9587	0.8641	0.9918
			15	0.9587	0.8696	0.9919
		500	9	0.9489	0.8392	0.9880
			12	0.9481	0.8457	0.9876
			15	0.9448	0.8501	0.9859
750		9	0.9533	0.8436	0.9901	
		12	0.9496	0.8469	0.9884	
		15	0.9451	0.8448	0.9864	

**APPENDIX XII**  
**IN VITRO ANTIGEN RELEASE**  
**FROM CHITOSAN MICROPARTICLES**



Table 41 In vitro antigen release from chitosan microparticles

Chitosan	Conc. (%)	Ratio aqueous:oil	Amt. of Ag used (ug)	% Released						
				D1	D3	D5	D7	D9	D12	D15
CS 143	1	1 : 5	250	13.52	25.31	33.67	40.31	43.45	45.72	47.36
			500	16.01	27.67	36.83	43.66	47.92	51.29	53.50
			750	18.50	33.08	44.18	50.41	53.87	56.76	58.98
		2 : 5	250	11.64	22.26	30.70	37.02	40.73	44.44	46.72
			500	14.12	24.26	33.35	40.96	45.82	48.78	51.32
			750	17.45	29.08	39.33	46.35	51.26	55.34	57.69
	2	1 : 5	250	9.75	18.17	24.03	26.42	28.67	30.58	31.42
			500	12.48	22.74	30.13	34.89	38.75	42.86	45.73
			750	16.58	28.43	36.52	42.88	48.08	52.41	54.72
	3	1 : 5	250	6.42	11.83	14.74	16.43	18.02	19.40	20.53
			500	9.85	16.59	22.60	27.16	29.61	31.92	32.65
			750	13.81	23.90	31.72	36.53	40.17	42.44	44.71
CS 243	1	1 : 5	250	9.33	19.75	26.78	33.69	37.41	40.25	41.57
			500	12.84	24.58	33.28	39.58	43.57	46.51	49.03
			750	15.66	29.85	39.92	46.45	50.14	53.54	55.39
		2 : 5	250	9.28	18.83	26.36	33.06	37.93	41.69	43.55
			500	12.22	23.28	30.98	37.72	41.95	45.61	47.82
			750	14.30	26.54	35.94	43.16	47.51	51.15	53.01
	2	1 : 5	250	7.99	17.82	26.18	31.69	35.18	39.05	41.15
			500	10.26	21.44	30.60	36.37	40.49	44.16	46.45
			750	13.65	25.91	35.18	41.31	45.09	48.55	51.06
		2 : 5	250	8.05	17.31	25.16	30.19	34.22	38.04	40.26
			500	10.00	20.40	29.14	35.01	38.43	42.08	44.14
			750	12.78	24.51	34.32	40.45	44.40	48.35	50.33
CS 343	1	1 : 5	250	5.58	12.67	18.08	21.17	23.08	24.33	25.30
			500	7.86	16.44	24.19	28.69	31.60	33.45	35.04
			750	10.06	20.74	29.18	35.38	38.99	41.75	43.13

Table 42 In vitro antigen release from chitosan microparticles kept at 40°C for 1 month

Chitosan	Conc. (%)	Ratio aqueous:oil	Amount of antigen used (ug)	% Released						
				D1	D3	D5	D7	D9	D12	D15
CS 143	1	1 : 5	250	11.09	22.43	31.83	37.71	41.33	44.10	45.74
			500	13.30	25.80	35.74	42.57	46.23	48.87	50.91
			750	16.36	29.67	40.81	48.69	52.63	55.08	56.98
		2 : 5	250	10.29	21.35	29.22	35.96	40.25	43.75	45.85
			500	12.17	23.71	32.95	40.14	44.72	48.14	50.36
			750	15.17	27.91	38.05	44.45	48.98	53.41	55.38
	2	1 : 5	250	8.88	18.10	23.22	26.04	27.49	29.37	31.07
			500	11.62	20.95	28.16	32.82	36.22	39.19	40.88
			750	15.86	26.24	34.42	40.08	44.17	47.00	49.20
	3	1 : 5	250	6.04	10.47	13.56	15.44	17.19	18.53	19.60
			500	8.00	15.16	20.85	24.85	27.09	28.85	30.04
			750	11.20	21.10	28.69	33.69	37.19	39.69	41.19
CS 243	1	1 : 5	250	8.88	18.90	26.31	32.40	36.15	39.37	40.94
			500	10.66	21.90	30.50	38.21	42.39	45.04	47.24
			750	14.07	26.17	36.14	44.21	48.47	51.67	53.19
		2 : 5	250	9.08	17.30	25.61	31.69	35.66	38.56	40.00
			500	11.13	21.50	29.77	35.83	40.29	43.50	44.80
			750	13.56	24.95	34.47	42.29	47.05	50.11	51.81
	2	1 : 5	250	7.14	16.59	24.21	29.33	32.41	35.12	36.76
			500	9.28	19.14	27.46	33.20	37.03	39.42	41.05
			750	11.97	22.54	31.68	38.19	41.93	44.04	45.67
		2 : 5	250	7.16	15.85	24.00	29.48	32.84	34.53	36.13
			500	9.63	19.16	27.51	33.19	37.29	39.03	40.78
			750	11.66	22.23	31.84	37.96	42.08	43.93	45.06
CS 343	1	1 : 5	250	5.07	11.27	16.53	20.22	22.16	23.60	24.66
			500	6.89	14.65	21.56	25.80	28.34	30.03	31.44
			750	9.20	18.69	26.98	32.84	36.57	39.17	40.66

Table 43 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from chitosan microparticles

Polymer	Concentration (%)	Ratio aqueous:oil phase	Amt. of Ag used (ug)	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
CS 143	1	1 : 5	250	0.9156	0.8520	0.9715
			500	0.9364	0.8776	0.9827
			750	0.9092	0.8475	0.9682
		2 : 5	250	0.9428	0.8744	0.9860
			500	0.9441	0.8876	0.9849
			750	0.9430	0.8871	0.9856
	2	1 : 5	250	0.9066	0.8399	0.9670
			500	0.9546	0.8881	0.9922
			750	0.9507	0.8925	0.9899
	3	1 : 5	250	0.9320	0.8630	0.9815
			500	0.9320	0.8774	0.9794
			750	0.9313	0.8711	0.9805
CS 243	1	1 : 5	250	0.9331	0.8604	0.9804
			500	0.9339	0.8654	0.9818
			750	0.9177	0.8501	0.9733
		2 : 5	250	0.9525	0.8827	0.9892
			500	0.9452	0.8782	0.9872
			750	0.9341	0.8698	0.9815
	2	1 : 5	250	0.9447	0.8629	0.9870
			500	0.9397	0.8632	0.9847
			750	0.9331	0.8644	0.9816
		2 : 5	250	0.9519	0.8730	0.9903
			500	0.9386	0.8645	0.9840
			750	0.9351	0.8661	0.9823
CS 343	1	1 : 5	250	0.9079	0.8282	0.9673
			500	0.9215	0.8476	0.9744
			750	0.9258	0.8535	0.9769



Table 44 Correlation of zero-order, first-order and Higuchi model of in vitro release profiles from chitosan microparticles kept at 40°C for 1 month

Polymer	Concentration (%)	Ratio aqueous:oil phase	Amount of antigen used (ug)	zero-order $r^2$	first-order $r^2$	Higuchi $r^2$
CS 143	1	1 : 5	250	0.9220	0.8506	0.9751
			500	0.9194	0.8519	0.9736
			750	0.9138	0.8538	0.9698
		2 : 5	250	0.9429	0.8691	0.9860
			500	0.9390	0.8707	0.9837
			750	0.9373	0.8718	0.9836
	2	1 : 5	250	0.9053	0.8288	0.9660
			500	0.9380	0.8741	0.9840
			750	0.9379	0.8824	0.9836
	3	1 : 5	250	0.9448	0.8831	0.9878
			500	0.9256	0.8594	0.9770
			750	0.9281	0.8618	0.9787
CS 243	1	1 : 5	250	0.9391	0.8636	0.9840
			500	0.9334	0.8627	0.9804
			750	0.9272	0.8649	0.9769
		2 : 5	250	0.9405	0.8756	0.9828
			500	0.9365	0.8697	0.9824
			750	0.9334	0.8720	0.9800
	2	1 : 5	250	0.9310	0.8476	0.9801
			500	0.9291	0.8569	0.9785
			750	0.9208	0.8575	0.9735
		2 : 5	250	0.9230	0.8472	0.9743
			500	0.9262	0.8580	0.9764
			750	0.9141	0.8512	0.9695
CS 343	1	1 : 5	250	0.9232	0.8456	0.9753
			500	0.9214	0.8466	0.9743
			750	0.9313	0.8606	0.9794



**APPENDIX XIII**  
**IMMUNIZATION STUDY**

Table 45 Antibody titre level determined by ELISA of antisera from rabbits immunized subcutaneously with fluid antigen, encapsulated antigen in PLGA and chitosan microparticles

Antibody titre level (SD)							
Time (Days)	1N (50 $\mu$ g)	3N (50 $\mu$ g)	S (50 $\mu$ g)	1.5P <sub>50</sub> (50 $\mu$ g)	5P <sub>50</sub> (50 $\mu$ g)	1.5P <sub>50</sub> (150 $\mu$ g)	CS <sub>243</sub> (150 $\mu$ g)
3	**	**	520 (24.63)	**	**	**	**
7	608 (28.85)	592 (32.05)	624 (30.50)	975 (26.47)	875 (37.16)	1600 (88.92)	1200 (80.50)
10	**	**	720 (55.53)	**	**	**	**
14	800 (41.19)	992 (68.06)	864 (46.36)	2250 (94.38)	1200 (84.88)	3328 (212.57)	1632 (85.00)
21	752 (48.50)	2176 (105.87)	768 (38.01)	2900 (93.04)	1500 (107.53)	3968 (239.57)	2944 (163.52)
28	544 (23.89)	5632 (251.75)	576 (30.66)	3300 (169.90)	2100 (108.02)	4224 (217.50)	4480 (189.57)
35	**	6912 (314.57)	**	**	**	**	**
42	**	7424 (343.56)	**	3900 (159.59)	3400 (178.30)	5760 (247.56)	6400 (269.22)
49	**	9216 (417.16)	**	**	**	**	**
56	**	22000 (1612.25)	**	5100 (265.17)	4200 (170.36)	6912 (342.44)	5760 (298.45)
70	**	31000 (1887.48)	**	5400 (342.94)	4875 (173.55)	7424 (427.19)	3776 (188.02)
84	**	34816 (1933.02)	**	3700 (218.68)	4700 (208.42)	6144 (325.79)	1856 (77.42)
112	**	30720 (1592.47)	**	3100 (175.48)	4600 (233.60)	4992 (337.75)	832 (53.50)

\*\* data did not determine

Table 46 Statistical analysis at the  $p = 0.05$  level of antibody titre level augment after immunized subcutaneously with fluid antigen, encapsulated antigen in PLGA and chitosan microparticles

Formulation	1.5 P <sub>50</sub>	5 P <sub>50</sub>	1.5 P <sub>150</sub>	CS <sub>150</sub>
1 N	S	S	S	S
3 N	S	S	S	S
1.5 P <sub>50</sub>	*	NS	NS	*
1.5 P <sub>150</sub>	*	*	*	NS

- \* data did not calculate
- S = significant
- NS = nonsignificant

## VITA

Miss Parichat Chomto was born on May 7, 1967 in Bangkok, Thailand. She got her Bachelor degree in Pharmacy with 2<sup>nd</sup> honour in 1989 from Faculty of Pharmacy, Mahidol University, Bangkok, Thailand and Master degree in Industrial Pharmacy in 1991 from Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand. She has been a lecturer at Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University, Nakornpathom, Thailand since 1991.