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APPENDIX

APPENDIX A

SAMPLE OF CALCULATION

1. Preparation of 6% V_2O_5/TiO_2 catalysts with the wet impregnation method

Reagent : Ammonium metavanadate (NH_4VO_3)

Molecular weight = 116.98 grams.

(Atomic weight of Vanadium = 50.1961)

Support : Titanium dioxide (TiO_2) : anatase phase

Calculation for prepared 6% V_2O_5/TiO_2 (% by weight)

based on : 6 % V_2O_5/TiO_2 , catalyst weight = 100 grams.

assume : titanium dioxide used is x grams.

So that, the catalyst 100 g. would composed of

Vanadium	6	grams.
Titanium dioxide	x	grams.

Then $6 + x = 100$ grams.

Support (x) = 94 grams.

The titanium dioxide support weight used for all preparations is 5 grams.

For NH_4VO_3 used as precusor salt.

Vanadium required = 5 * (6/94) grams.

= 0.3192 grams.

Vanadium 0.3192 grams was prepared from NH_4VO_3

Vanadium content in NH_4VO_3 is 50.1961 grams, therefore :

The required-salt = (0.3192*116.98)/50.1961 grams.

= 0.7440 grams.

2. Calculation of NO conversion

The effluent gas was analyzed by NO_x analyzer. The SCR activity was evaluated in terms of the conversion of NO into N_2.

$$\text{NO conversion (\%)} = ((([NO]_{in} - [NO]_{out}) / [NO]_{in})*100$$

APPENDIX B

CHEMICAL COMPONENT OF TiO_2 SUPPORT

Titanium dioxide Compound	Purity (%)
TiO_2	99.0
Cl	0.01
PO_4	0.10
SO_4	0.10
Pb	0.0010
As	0.0002
Fe	0.0050
Cu	0.0005
Zn	0.0050

APPENDIX C

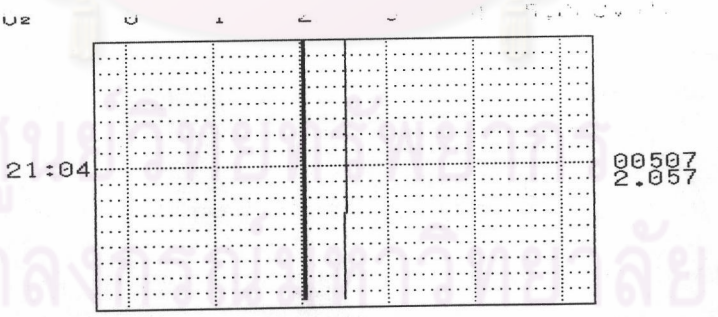
OPERATING CONDITION OF NO_x ANALYZER

AND TYPICAL DATA

NO_x analyzer (model NOA-7000) was used to analyzed the concentrations of nitric oxide. Operating condition are as follows :

NO_x analyzer : SHIMUDSU - NOA - 7000 (specification see in Table 4.1)

Sample data of No_x analyzer from printer



DATE & TIME :08-31-1996 21:03
CHART SPEED :1min
CH1 ——— :NOx (1000ppm)
CH2 ——— :O₂ (5.000vol%)

	MIN	MAX	
CH1	: 00502	00509	ppm

VITA

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