

## CHAPTER V

### CONCLUSION

8 waste dealers, 17 recycled resin producers, 11 plastic product fabricators, and 12 plastic waste grinders were observed and interviewed in this research. The data obtained are believed to be typical data representing the plastic recycling industry. The composition of plastic waste from On-Nooch and Nong-Khaem are rather similar. Percentage of PE, PP, and PS waste are 75 %, 15 %, and 10 %, respectively. Colorless PE waste has the highest percentage.

Estimation of quantity of plastic waste is divided into three routes; 1800 tons/year of HDPE and 1800 tons/year of PP waste from plastic factories, 3,250 tons/year of HDPE bottles and 975 tons/year of PP from BMA collection truck crews and open dump scavengers, 61,100 tons/year of HDPE bottle and 10,200 tons/year of PP from street collectors.

Good quality of sorting is obtained in general. Most of recycled pellet have only single type of plastic. However, some factories produce recycled pellets of mixtures between HDPE and LDPE, and HDPE and PP. The recycled resin made from drinking water bottle is the best in quality among the recycled resin. The properties of each collection for these samples are consistent. These are not so in mixed bottle PE, nonbottle PE, nonbottle PP, bottle PS, and nonbottle PS because of the variation in composition.

Most of recycled pellet still have high tensile strength, but low impact strength. Thus, they can be made into various products which will not subjected to impact force while in use and in such case, they may replace virgin resin in substantial quantity. The minimum properties of recycled pellets from PE (drinking water bottles), mixed PE, mixed PS, and mixed PP are 94.6%, 82.9 %, 70.9 %, and 81.3 % of the original properties for tensile stress. The minimum properties of recycled pellets from PE (drinking water bottle), mixed PE, and mixed PS are 35.3 %, 27.4 %, and 65.4 % of the original properties for impact strength.



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย