



Name: Amel Amar

Graduated from: Adamson University, 1982

Education: B.S. Chemical Engineering (licensed)

In 2001, Mr Amel pioneered Maha Chemicals in Philippines (MCP) and presently holds the position of Director in MCP. Before joining MCP, he has worked with different companies located around Southeast Asia.

Upon graduating from Adamson University, Mr. Amel worked for General Synthetic in Philippines as a resin chemist for four years before joining Al Samae Ink in Saudi Arabia. He then moved on to the position as an R & D chemist for Al Samae Ink, Pacific Products, Dutch Boy and Resin Plus. After spending considerable time in the R & D field, he joined Dovechem in Singapore and Malaysia as factory manager.

With more than 25 years of knowledge, enthusiasm and experiences revolving in the Paint, Ink, Adhesive and Resin Industry, his contributions are remarkable.

RATIONALE OF A SOLVENT RECOVERY SYSTEM

It has been a steady upward trend for the prices of solvent beginning middle of last year, 2010. And there's nothing in the horizon that it will go down. From a record low of PhP 30/liter in 2009, as early as January 2011, Toluene has increased now to PhP 50/liter

What is a Solvent Recovery System?

Solvent Recovery System is basically a distillation process which allows the recycling, separation and the re-use of washing solvents through the use of simple distilling equipment.

Paints and Inks contain resin, pigments, additives and solvents. Solvent is also used to wash and clean the mixing tanks, the grinding equipment and printing equipment. Most of the time, this washing solvent is being discarded or sold to recyclers at a much reduced price. Or to those who can afford, will be sent to accredited disposal companies of the DENR (Department of Natural Resources and Environment) at a very steep price.

Safety Engineers and Production Managers of Ink and Paint companies are aware of the problem they can face if these waste solvents are not disposed or not treated properly. Another thing is the space being occupied by the number of drums of dirty solvent being kept inside the factory. Adding also the danger of keeping inside the premises these dirty solvents as potential fire hazard.

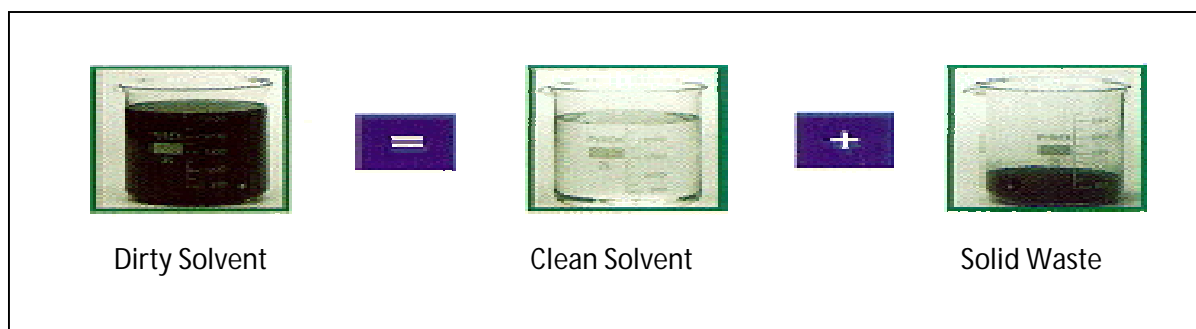


Figure1. Courtesy of Formeco

Figure 1 shows the amount of clean solvent recovered after distillation. Studies show that at least 88% of solvent can be recovered from a very thick dirty solvent mix.

Below is a simple calculation on how much savings you can get if you invest on a simple inexpensive solvent recovery system:

Given:

Medium size Ink Company

Average monthly usage of clean solvent allocated/used in washing and cleaning tanks and equipment: 400 litres

Note: These 400 litres has been used, decanted, and re-used until arriving to a thick dirty mix.

Cost of Disposal: PhP5, 200/MT of dirty solvent to accredited Disposal Company of DENR

Calculate:

Realistic Cost Savings to the company in 1 Year

Parameters:

- Average price of solvent is PhP50/litre, e.g. Toluene
- Cost of electricity for solvent recovery = Php 10/kw-hr
- Electrical consumption of Solvent Recovery System: 0.2 kw-hr/litre
- Rate or Percentage recovery: 88%

Tabulating:

Annual Dirty Solvent Generation, Litres	At 88% Recovery, Litres	Total usage of electricity for recovery, Kw-hr
4800	4224	844.8

Amount of Solvent recovered/avoided purchasing = PhP50/li x 4224 litres = PhP 211,200 (A)

Amount of Electric consumption for recovery = PhP10/kw-hr x 844.8 kw-hr = PhP8, 448 (B)

Amount of Disposal to accredited disposal company = PhP5200/MT x 4.8MT = PhP 24,960 (C)

Realistic Savings = A + C – B

= PhP211, 200 + PhP24, 960 – PhP8, 448

= **PhP227, 712/year**

Cost of Disposing the solid waste (576 kg/year)* after recovery is very minimal.

*576 kg estimated weight of contaminants after recovering 4224liters of clean solvent.

Now that the price of crude is nearing USD100/barrel, investing in a unit of a Solvent Recovery System seems to be a good idea. Recycle please.