

SunChemical

Between the end of 1997 and the beginning of 1998, the Sun Chemical factory in Liverpool installed a new dust and fume extraction system for operation with its 'change pan' process for the manufacture of flexographic printing inks.

The Liverpool site manufactures solvent-based flexographic inks in batch sizes varying from as little as 50 kg up to 1000 kg to meet individual customers needs. Every batch involves a 'change pan' operation during which solvent vapour might emit. The installation of the new extraction equipment was needed to ensure the continuation of a clean workplace environment. Following installation of the new extraction system, consultants were asked to evaluate VOC emission levels and to check occupational exposure measurements.

The level of emissions detected by the consultants was well in excess of that expected by Sun Chemical Management, both at a local and UK level. Contact was made with the local Environmental Officer and a decision was taken to re-test the process for atmospheric emissions while at the same time undertaking an equipment status survey to identify the position where VOC emissions could be detected.



The conclusions were:

- The extraction system could operate far more efficiently than previously used
- The operations of the site needed to be modified

The following actions were taken:

- A manufacturing review to see if products made on site could be transferred to other sites and made more efficiently in bigger batches elsewhere
- The lidding of all vessels were made automatic within the bounds of the equipment that was currently in use
- The method of extraction on the vessels was modified
- A re-test would be carried out to check the performance of the equipment
- Following the results, the extraction system would be revisited by the installers to see if less vapour could be drawn from the vessels

The emphasis here was on relatively simple, even basic, improvements made in a very systematic manner, which involved measurement, defining improvements, re-measurement and further improvement. Thus the best practice was recognised for the systematic process used

to achieve improvement rather than the reasonably simple and cost effective measures used. Overall there was a seven-fold reduction of emissions. Particularly commendable is the adoption of low cost measures which can be broadly applied by other solvent users.

