MEMO

SUBJECT: Update of Generic Scenario for UV-curable Coatings

Date: September 19, 1995

From: Scott

To: CEB

Summary

The current generic scenario (no date) assumes no inhalation exposure due to mist generated by the roll coating process. However, recently submitted data (see Table 1, attached) from a PMN case indicates that such exposure can occur. Based on that data, the following total mist concentrations (8-hr TWA) for inhalation exposure estimations for workers are recommended for cases involving roll coating of UV-curable inks and coatings:

0.04 to 0.26 mg/m^3 (what-if).

You may want to attach this memo to your current copy of the generic scenario.

Background

As with many of CEB's generic scenarios, this memo is intended only to give CEB a basis for estimations when no other data are available. There are many uncertainties associated with these data and their use. The following are some of the background information on and caveats to these data. There are 10 data points total, including 3 personal monitoring and 7 area data points. The range of 0.04 to 0.26 mg/m^3 includes only data for the personal samples, which are assumed to be representative of 8-hr TWA. It may be noted that data from area samples are similar to data from personal samples. Personal monitors were positioned in the operators' breathing zones, and area monitors were positioned at head height in the operators' area close to the print rollers. Collection media from monitors were solvent extracted, and the soluble fraction were assumed to be "ink fly", or ink misting as the ink film splits in transferring from roller to roller. The operation monitored was in a facility using offset lithographic printing of cartonboard for retail food packaging; the facility location may have been in the United Kingdom. Representativeness of these data relative to actual ink fly concentrations in the universe of similar operations is unknown; however, it seems reasonable that this data could be applied to other similar operations.

(over)

Table 1
Monitoring Data for Ink Fly Mist of UV-Curable Coating
used in Offset Lithography

SAMPLE	SAMPLE TYPE	SAMPLE VOLUME (litres)	AMOUNT TRAPPED (ug)	EXPOSURE CONCENTRATION (mg/m^3)
1	Personal	170	44	0.26
2	Personal	200	12	0.06
3	Personal	144	5	0.04
4	Area	291	8	0.03
5	Area	360	17	0.05
6	Area	357	22	0.06
7	Area	546	12	0.02
8	Area	306	14	0.05
9	Area	306	8	0.03
10	Area	189	ND	NA

Table 1 Notes:

Operation is printing of cartonboard for retail food packaging.

Data is submitted for PMN case.

Amount trapped is solvent extracted (soluble) fraction of total airborne particulate..

ug = micrograms; ND = none detected; NA = not available.

Exposure concentration (mg/m^3) =
amount trapped (ug) / sample volume (L) * 1000 L/m^3 / 1000 ug/mg