RECOMMENDED GUIDELINES FOR HANDLING UV RPINTING INKS, COATINGS AND SOLVENTS

HEALTH

Since the chemistry of Ultra Violet curable materials is different from that of conventional printing materials, the hazards associated with handling them will also be different. These differences must be emphasised to those more familiar with handling conventional products, so that minimum exposure will occur.

Compared to conventional printing ink, the raw materials have a higher intrinsic toxicity associated with them. These materials are classified to the eye, as a potential danger of irritation, and are much higher than in a skin contact situation.

They are rated as low to moderate potential skin irritants by standard testing procedures. This rating is not of a severe enough nature to require labelling, as do “primary” skin irritants.

The type of irritation most generally produced by long skin exposure is characterised by redness, soreness and, if left unattended with daily exposure by a severe rash. The effect is similar to dermatitis or to an allergy which follows the same general pattern. The extent of reaction will also be highly individual in nature.

These products are not corrosive. This complicates the effect of exposure since the worker is not apt to recognise the presence of the material on the hands and by normal activity will tend to spread it to other parts of the body. The chief concern here is accidental entry into the eye, as by rubbing the eyes or lids with contaminated fingers.

Another source of exposure which goes unrecognised in practice is soiled clothing or shoes. The uncured ink on clothing becomes a source of exposure, both at the soiled position, and also by secondary transfer to other parts of the body as mentioned above.

Finally, with regard to ingestion, tests conducted on these materials in the uncured state show that they have low oral toxicity. However, accidental or deliberate ingestion should always be avoided.

PRECAUTIONS FOR HANDLING

The following programmed is recommended for pressrooms using UV formulations. It should be followed by all those involved in ink handling or fixing and especially those workers involved with plate, roller or blankets wash-up. The necessary items should be readily available in the press area.

1. The use of standard barrier creams for the hands for those workers in all short-term exposure situations.

2. The use of vinyl or latex glove protection is recommended for personnel where continuous or long-term exposure is expected and cannot be avoided. This is especially useful in wash-up situations where solvents will be used. Disposable examination type gloves have been useful in practice being their snug fit is an added safety feature around roller nips.

3. It is recommended that goggles be supplied to pressroom personnel and be used at all times during wash-up. Goggles are a first line of defence against introducing materials directly into the eyes. They also reduce the chance of rubbing the eyes with contaminated hands. Should ink be accidentally introduced into the eyes, flush with water for at least five minutes and follow in-plant first aid procedures.

4. It is recommended that all personnel adopt the practice of cleaning ink from the skin with soap and water and not solvent. The use of solvent removes the natural oils from the skin and may actually aid the penetration of the offensive materials into the lower layers of the sink. This intensifies the irritation problem rather than helping it.

5. It is recommended that all personnel cleaning large spills of UV ink or varnish use gloves. In addition, any used wipers from a clean-up or wash-up operation should be placed in a container so that the wiper does not become a source of additional contamination to anyone in the work area. Solvents may be used with care in cleaning spills on the floors or equipment, provided gloves are used.

6. In the event that a spill accident occurs using UV inks, it is recommended that soiled clothing be changed immediately so as to prevent long term skin contact during the remainder of a shift.

7. Adequate ventilation is recommended throughout the press area. Localised ventilation has been found to be particularly effective around open roller train.

8. It is recommended that the practice of eating while working or in the immediate work place be discouraged and that good personal hygiene practices be encouraged at all times. Press personnel working with UV inks should be urged to wash thoroughly before eating or using sanitary facilities.

CONCLUSION

As can be seen, most of the above recommendations are little more than good common sense. They simply involve a re-education programme towards good work habits at the plant and pressroom level.

Experience gained from successful users of UV inks are applied and enforced by managerial supervision, health and production problems are minimised.

STORAGE

All UV curable products are reactive and must be stored under conditions which will avoid excessive heat and direct sunlight. All containers should be kept closed. It is recommended to store containers at temperatures between 50^0 and 80^0 Fahrenheit.