

# Ultra-Violet Curing

The UV curing of inks, varnishes or lacquers has led to considerable health and safety problems. GPMU policy is that members should only be working with UV curing where there is a signed agreement which establishes the precautions the company will take to ensure safe working, and in particular to implement guidance on UV curing published by the PIAC.

## Draft Agreement

### USE OF ULTRA-VIOLET (UV) INKS, VARNISHES AND LACQUERS

#### 1. Scope of Agreement

The terms of this Agreement shall apply to GPMU members whilst they are employed at:

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#### 2. Nature of UV Processes

The Company accepts that UV curing presents a number of significant hazards from UV light, ozone and contact with UV-cured materials.

#### 3. Guidance on UV Curing

The Company agrees that work involving UV curing can only be carried on after assessment has been made of the risks involved and the control measures needed. The PIAC Guidance on the Use of UV Inks, Varnishes and Lacquers will form the basis of the Risk Assessment and control measures. Any amendments subsequently agreed

will also be observed. At least one copy of the current PIAC guidance will be provided to the Chapel by the Company.

The assessment will also take account of relevant information provided by manufacturers and suppliers of UV curing equipment and materials. The parties to this Agreement will carefully monitor medical and technical developments relating to UV curing.

#### 4. UV Curing Assessment Team

It is agreed that the Company will establish a UV Curing Assessment Team including union representatives and members of management. The Assessment Team will conduct the Risk Assessment and will oversee the implementation of the PIAC Guidelines, monitor environmental and other controls and make appropriate recommendations.

#### 5. Monitoring and Control

The Company agrees to monitor on a regular basis, ozone, solvent and ink mist levels on machines using UV materials. The Company will institute appropriate controls to keep these levels to an absolute minimum, including the provision of efficient extraction ventilation, shielding, etc.

The Company will ensure that all UV light sources are fully shielded. Screening will be provided and maintained to prevent all direct reflected light from being emitted into the workroom.

The company will provide appropriate protective equipment to avoid all skin contact with UV curing materials. All protective clothing, including overalls, provided for UV curing work will be maintained and cleaned at the Company's expense. Under no circumstances will UV overalls be cleaned in the domestic environment.

## UV CURING HAZARDS & PRECAUTIONS

Type of Exposure	Health Hazard	Precautionary Measures
Contact with uncured UV ink	Skin irritation, Skin sensitisation	Consider possibilities for less irritant substitutes and enclosed handling systems, gloves etc and eye protection
Inhalation of UV ink or ink fly	Upper and lower respiratory tract irritation. Potential for sensitisation	Reformulation of inks etc. Shrouding of rollers and local exhaust ventilation
Contact with wash-up solvents	Skin irritation. Upper and lower respiratory tract irritation	Consider use of local exhaust ventilation. Devise and use safe systems of work including use of PPE where necessary (eg spillage and leakage)
Inhalation of ozone	Eye, nose and throat irritation. Headaches and nausea	Local exhaust ventilation
UV light	Ocular irritation to varying degrees which may temporarily cause difficulty with vision. Skin burns (ie erythema)	Fixed or interlocked screening. Suitable goggles and skin protection during certain maintenance work.

## 6. Health Surveillance

The Company agrees to institute a monthly programme of health surveillance for UV curing workers. Health surveillance will include inspection of hands, forearms and other exposed skin by a 'responsible person' looking for signs of skin disease such as sore, red or itching skin. Health surveillance will also include identification of possible respiratory problems.

In this context, a 'responsible person' could be a supervisor, first aider, or occupational health nurse, specially trained to recognise the relevant symptoms.

## 7. Training of all UV Operators

All people working with UV curing materials and processes will be fully trained by the Company in the hazards of UV curing and the control measures. All new operators will receive similar training before starting work on UV. The Company will consider the need for update and refresher training in consultation with the UV Assessment Team.

## 8. Safety Representatives

It is agreed that in order to ensure the strict observance of the PIAC Guidance, training of Safety Representatives should include familiarisation with monitoring equipment for ozone, solvents and ink mist. The Company shall provide such facilities and assistance as the Safety Representative may require for monitoring and inspecting the workplace.

## 9. Exclusion of Certain Chemicals

The Company agrees not to use any products that contain any of those chemicals that do not meet the Acrylate Preference Criteria. The Company will obtain written confirmation from their suppliers that these chemicals are not in use. In the absence of such declarations the GPMU will reserve the right of its members not to handle the products involved.

If there is no technical alternative to the use of non-APC compliant chemicals, the company will enter into discussions with the GPMU about the additional safeguards necessary to use these chemicals safely.

In addition the company will take active steps to identify potential alternative products or technologies that will provide for the use of safer materials in the future.

It is agreed that Chapels will be provided with detailed information relating to existing or proposed products at the earliest possible opportunity.

## 10. Maintenance of Earnings

It is agreed that as from the date of this Agreement, if any GPMU member is unable to follow his or her original occupation as a direct result of sensitisation to UV materials, then on transfer to other work within the factory, his or her earnings will be maintained up to the level of the original job.

Earnings are defined as the amount normally received for the employee's standard working week, less any State benefits awarded as a result of sensitisation to UV materials. This will include such items as shift premia, machine extras, house money, merit money and average

bonus received in a standard working week. Where necessary, training or retraining will be provided to facilitate the transfer to other work.

The purpose of this Clause is to ensure that individuals concerned should not be disadvantaged and discussions should also take place between the Company and National Officials of the union in this respect.

## 11. Review of Agreement

This Agreement will be subject to review in the event of any significant changes in the technological knowledge and development involving UV curing.

## 12. Interpretation of Agreement

Any difficulties arising out of the application of interpretation of this Agreement will be the subject of further discussions.

## GPMU Exclusion List

The British Coatings Federation (BCF) has agreed, with the GPMU, BPIF and other printing industry bodies, a set of criteria which must be met by all UV cured ink and coating formulations produced by BCF members. These criteria are also being applied through ink manufacturers at the European level. The criteria are:

1. Skin irritancy less than 2.0 on the OECD rating
2. Purity criteria for solvent, acid, and acrylate content
3. A statement in the data sheet that the product conforms to BCF guidelines

The effect of these criteria, is that all the chemicals on the previously agreed "UV exclusion list" continue to fall outside the Acrylate Preference Criteria. Future changes to the list will now depend on the application of the agreed criteria to ink formulations. In addition some chemicals on the list that are never used for UV formulations will be removed.

The most important acrylates that do not meet the APC, and therefore under GPMU policy should not appear in UV ink formulations are:

Butanediol Diacrylate (BDDA)

Diethylene glycol diacrylate (DEGDA)

2-Ethyl hexyl acrylate (2EHA)

1, 6-Hexanediol diacrylate (HDDA)

Mixtures of pentaerythritol tri- and tetra-acrylates (PETA)

Tetraethylene glycol diacrylate (TEGDA)

Trimethylol propane triacrylate (TMPTA)

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