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HEALTH AND SAFETY IN THE WORKPLACE

If we are not careful we will be crushed by the mountain of paperwork created in the name of Health and Safety, certification, risk assessments, acres of legislation, awards, initiatives. So what is all this for? It is great business for leaflet printers, provides a ready market for renewable forestry, employs armies of civil servants and hosts of H&S executives and it's just great for consultants. Keep it coming, Health and Safety like global warming has created a whole new industry costing hundreds of millions of pounds in the UK alone.

Why? Because people are arrogant lazy and stupid. But that is human nature and we all at one time or another fall into one or all those categories. To live life is a risk, there is nothing in this world that in one form or another will not cause us hurt or injury. You can wash in, drink or drown in water, so do we ban water? It is possible to understand the confusion that will exist in some peoples' minds. If you were asked to pour oil into a container, heat the oil up to above or near its flashpoint over a high-energy gas burner and then plunge wet carbohydrate into the boiling oil. The water on the surface of the carbohydrate flashes to steam and expels a highly flammable vapour into the air in the vicinity of the high-energy burner. Occasionally there is an explosion and the fireball incinerates all in its path. The operator breathes in this searing atmosphere. What's wrong with that they were only making chips? It is possible to legislate industry to a halt in Europe and we export the hazards to China and India. There are manufacturers in these countries whose factories you would not enter because of the hazardous chemicals they are using. Power presses unguarded where an amputated finger is almost a badge of honour. Take our working practices back fifty to a hundred years and you may be approaching what is often common practice in the Far East. So why am I rabbiting on about fish and chips and foreign parts. Quite simply because we have to get things into perspective.

In simple terms everybody has the right to work in conditions that will not be harmful. It is the responsibility of the employer and the employee to work in a way that is safe for everyone. There is no activity that is without risk, it is the employers' duty to assess the risks of any potential danger and do what they can to remove or minimise the hazard that causes the risk. A suitably qualified person should carry out risk Assessment annually.

Health and Safety is Everyone's Responsibility.

Screen printing has a range of hazards that are specific to the industry. These are the storage and use of inks, solvents, stencil production and removal chemicals. In addition there are the by-products of UV curing (Ozone generated) and UV curing inks. Rather than trying to cover every hazard found in the working environment this article will address these specific issues.

In the printing industry the three main causes of accidents that are reported to the Health and Safety Executive are: Manual Handling, Slips and Trips, Contact with Machinery.

Probably far more common than is reported is the effect of the chemicals that we use particularly in contact with skin and the long term effects of solvents. Industrial dermatitis is experienced by many printers as well as sensitisation to inks, solvents and chemicals.

Sensitisation is when the body reacts against regular contact with a particular chemical or group of chemicals. A condition we all know about in every day life is hay fever that is an allergic reaction to pollens of grasses and trees. In the printing industry it may be a reaction to the chemicals contained in UV Curing inks. Whatever the cause of the problem it can mean that the sufferer cannot work with those materials in their vicinity. Whatever the hazard removing it or reducing its effects is important. The degree of danger that a hazard produces determines its importance.

ONE SIMPLE RULE YOU MUST ALWAYS ABIDE BY
Never use solvents to clean your skin



The screen printing industry uses a wide range of printing inks, wash-up solvents, pre-press chemicals, adhesives and other chemical preparations. Printers must familiarise themselves with the products they are using. This information is available on the:

- Health & Safety Data Sheets also known as Material Safety Data Sheets (MSDS) supplied by the ink/chemical supplier. These go into detail about the potential hazards in using the materials and how to use them safely.
- Technical Data Sheet supplied by the ink/chemical supplier. This gives information on how to mix and use the inks, solvents or chemicals. They will tell



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you the type of applications for which they are suitable. It also gives details about additives that can be used, suitable range of mesh counts, etc.

These two documents are an invaluable source of information. It is the duty of the supplier of the products to make this information available as set out in government legislation. Also, if they are hazardous chemicals, they are obliged under other legislation to classify them with specific warning labels.

Material Safety Data Sheets (MSDS) should be available to the user of the inks, solvents or chemicals at all times. They state what precautions should be taken in their use and how they should be stored. The precautions include Personal Protective Equipment that should be worn and any air extraction systems required. They detail the potential harmful effects of contact with the skin or eyes, swallowing or breathing in fumes. They say how you should behave with someone who has been adversely affected by the material.

Whenever you use new inks or chemicals read the Material Safety Data Sheet. Nowadays the potential harmful effects caused by such materials are much reduced as the really nasty constituents have been removed but they can still be harmful.

The MSDS to have 16 sections that deal with the following information: -

- 1) Product Name / Supplier
- 2) Identity of Hazardous Components / Composition
- 3) Identification of Hazards
- 4) First Aid in the event of accidents or misuse
- 5) Fire Fighting Measures
- 6) Measures for Accidental Release / Spillage
- 7) Handling & Storage
- 8) Exposure Controls & Personal Protection
- 9) Physical & Chemical Properties
- 10) Stability & Reactivity
- 11) Toxicological Information
- 12) Ecological Information
- 13) Disposal Considerations
- 14) Transport Regulatory Information
- 15) Supply Regulatory Information
- 16) Additional Information

HOW CAN THE SCREEN PRINTER FIND WHAT HE NEEDS TO KNOW?

The Material Safety Data Sheet can be a daunting accumulation of information for the average screen printer to deal with but the necessary actions can be summarised as follows: -

- Check the identity agrees with the product label (Section 1).



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- Check the hazard (Section 3). If there is none the product can usually be safely stored and used with normal standards of good industrial hygiene for the intended application.
- If a hazard is declared, note how to store the product safely (Section 7).
- Note the requirements for personal protection (Section 8) and safe conditions of use (Sections 8 - 10).
- Make sure the working instructions are read and keep the MSDS in an accessible place for emergency information like First Aid (section 4), Fire (Section 5), Spillage (Section 6), Illness (Section 11), Disposal (Sections 12 & 13) and any regulatory considerations (Sections 1, 3, 14 & 15).

Copies of the MSDS should be kept in the vicinity of where the inks, solvents etc are being used. It is no good having them stuck in a filing cabinet of the HR department. If there is an accident people need to know what to do. If there is a need to get someone to hospital they should take a sample of the chemical causing the problem and more importantly the MSDS because that will tell the medics what they are up against and enable them determine the necessary treatment.

A CHECKLIST FOR PRINTERS

- Make sure the room is well ventilated and any extraction or air supply is switched on and working.
- Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, tell your supervisor.
- Do not carry on working if you think there is a problem.
- Make sure you have the right PPE for the job being done, that it is in good condition and use it.
- Do not use solvents to clean your skin.
- Clear up spills straight away and put used cloths in the labeled containers provided.
- Keep the area clean and tidy.
- Always draw the curtains or close the screens and guards when operating the UV lamp.
- Wash your hands before and after eating, drinking or using the toilet.
- Make sure extraction systems are working correctly at all times.
- **ALWAYS READ THE MATERIAL SAFETY DATA SHEET**

The regulations are put in place to provide a safe working environment. Remember it is also your responsibility to work in a safe manner. It isn't macho to lift or move things that may damage your back, use solvents to clean your hands, be covered in ink, etc.

You only have one life make sure it is a long and healthy one.