

# FUME MINIMISATION GUIDELINES

## Welding, Cutting, Brazing and Soldering

### GUIDELINE 1:

#### ***HAZARDOUS SUBSTANCES REGULATIONS***

##### **1. OBJECTIVE**

The objective of the Hazardous Substances Regulations introduced by the States and Territories of Australia is to reduce the risk of adverse health effects for employees exposed to hazardous substances in their day to day workplace activities.

##### **2. HISTORY**

The National Occupational Health and Safety Commission (NOHSC) first declared National Model Regulations (NMR) to Control Workplace Hazardous Substances in 1990. Following a period of review, a revised version of the NMR and a National Code of Practice for the Control of Workplace Hazardous Substances were declared in December 1993 and published in March 1994. NOHSC documents are advisory and their application in a particular State or Territory requires legislation to be enacted by that State or Territory. The NOHSC received assurances from the States that, in the interest of uniformity, State regulations would not differ substantially from the NMR.

##### **3. WHAT IS A “HAZARDOUS SUBSTANCE”?**

In general a hazardous substance is a substance that has the potential to adversely affect human health. Hazardous substances may

- a) be included in the “List of Designated Hazardous Substances” [NOHSC: 10005 (1994)] or on a list produced by a particular State or Territory ,or,
- b) fit the criteria for a hazardous substance set out in “Approved Criteria for Classifying Hazardous Substances” [NOHSC: 1008 (1994)].

However, employers need only refer to Material Safety Data Sheets (MSDS) for hazardous substances identification.

##### **4. APPLICATION TO WELDING AND ALLIED PROCESSES**

Fume is a hazardous substance according to b) above. Certain fume components may also be on the list of hazardous substances in a). Individuals should not be exposed to levels above those given in Exposure Standards for Atmospheric Contaminants in the Occupational Environment (NOHSC: 1003 1995).

##### **5. RESPONSIBILITIES**

The state regulations set out the responsibilities of manufacturers, importers, employers and employees. With respect to welding and allied processes the following must be observed:

###### Suppliers must-

- Provide Material Safety Data Sheets (MSDS) for substances being supplied for the first time to a particular buyer for use in the workplace.
- Label substances that are hazardous substances or can be when used.

###### Employers must-

- Develop and subsequently maintain a register of all hazardous substances used or produced in the workplace. This may include consumables, welding fume or any other hazardous substances in the workplace.
- Maintain a collection of MSDS as part of the register. This register must be available for reference by all employees.
- Ensure a suitable and sufficient assessment is made of the risk to health created by welding fume or other hazardous substances. In most circumstances use of these Fume Minimisation Guidelines will assist in the assessment.

- Revise the assessment at least every 5 years or if workplace conditions change significantly.
- Provide training to all employees with the potential for exposure to welding fume.
- Keep records of training and assessment – assessment reports must be available to employees to whom the assessments relate.
- Provide health surveillance for employees assessed as being exposed to a significant health risk in the course of their employment duties.
- Undertake monitoring where the need is indicated in the assessment.
- Ensure that exposure of employees to hazardous substances is prevented or adequately controlled to minimise risk to health. Exposure must not exceed the relevant exposure standards.
- Ensure that engineering controls and safe work practices are effectively maintained.

Employees are required to-

- Cooperate with the employer to ensure that activities within the workplace comply with the Hazardous Substances Regulations.
- Report promptly to supervisors/managers any matter that might diminish the employer's ability to achieve compliance.

## 6. WORKPLACE ASSESSMENTS FOR FUME

The purpose of a workplace assessment is to enable decisions to be made about potential health risks, control measures, training requirements, monitoring and health surveillance. An employer has a duty to ensure a suitable and sufficient assessment is made where there is potential for exposure to hazardous substances. For the purpose of these guidelines the assessment should focus on activity in the workplace and likely exposures (eg in operator's breathing zone). Actions to be undertaken during the assessment include:

- Identify all hazardous substances used or produced in the work being assessed.
- Review the information on the nature of the hazard and precautions for use and safe handling.
- Assess the risk in terms of degree of exposure and potential health effects.

The possible assessment methods include the following:

Simple and obvious assessments: These are straightforward assessments where, after reviewing the Material Safety Data Sheets (or equivalent information) for hazardous substances used at work and identifying their method of use, it can be concluded that there is not a significant risk to health. In respect of fume, this could mean that one of the control measures referred to in Guideline 2 and the applicable process guideline is already in place.

Detailed assessments: If the assessment is not simple and an appropriate generic assessment is not available, a more detailed risk assessment must be undertaken. This involves obtaining information about the hazardous substances primarily from MSDS sheets and labels, inspecting the workplace, evaluating exposure and evaluating the risk. If the level of exposure cannot be estimated with confidence, atmospheric monitoring by an occupational hygienist or other competent person may be required and the results compared with exposure standards for the substances.

Generic assessments: Where a particular hazardous substance(s) is used in the same or similar circumstances in different areas of the same workplace or in different workplaces, the nature of the hazard and the degree of risk **may** be comparable. In such situations, a single assessment of one representative work situation can be applied to other workplaces. This is the basis of these Welding Fume Minimisation Guidelines. It is the responsibility of the individual employer to ensure that the generic assessment is valid for their workplace. This type of assessment is generally based on information or outcomes from detailed assessments.

Further information on conducting these types of assessments may be found in the Worksafe publication "Guidance Note for the Assessment of Health Risks Arising from the Use of Hazardous Substances in the Workplace"[NOHSC:3017(1994)].

Irrespective of the assessment method, *it should be stressed that exposure standards do not represent "no effect" levels for each and every worker. **Therefore, the level of exposure should be kept as low as practicable.***

## 7. ACTIONS FOLLOWING ASSESSMENT

Where assessment indicates a significant health risk decisions have to be made on:

- **Appropriate control measures:** Where prevention of exposure to hazardous material is not practicable, the degree of exposure must be controlled so as to minimise risk to health. If required for welding and allied processes, the controls are listed in these Guidelines.
- **Instituting periodic monitoring**
- **The need for health surveillance:** Includes biological monitoring which can assist in minimising the risk of health from exposure to hazardous substances.
- **Training:** Training shall be provided by the employer to all employees with potential exposure to hazardous substances and should be commensurate with the identified risk.