**Introduction**

Welding fume (which includes irritating gases such as oxides of nitrogen and ozone) can cause irritation and ‘metal fume fever’. In the longer term, it can lead to lung diseases, and increase the risk of occupational asthma and cancer. Fume and dust from allied processes can cause lung disease and occupational asthma. Abrasive blasting produces a great deal of dust that includes metals, metal oxides and may contain respirable crystalline silica. There is an increased risk of lung disease.

Each situation is different. The risk depends on the process, the metal, the rod and flux, surface contaminants, and where the task is done.

Can you use alternative joining, cutting or surface preparation methods that produce less fume or dust? Get safety data sheets - can you select safer consumables?

**Action**

By getting the advice, you have assessed the health risk. But before acting, make sure the advice really fits your situation. Following all the advice means that you will normally comply with Workplace Exposure Limits. Read the advice in each of the sheets you downloaded. Compare it with what you do now.

You may already have the right controls in place, but are they all working properly? When were they last checked? Are they always used when needed?

You need to keep all controls in good working order. This means mechanical (e.g., extraction, respirator), administrative (e.g., supervision, health surveillance) and operator (following instructions). Look at all aspects of the advice. Don’t pick and choose - the points work together to provide ‘adequate control’. See sheet G406 for advice on engineering controls.

Show that control is being sustained – keep good records.

You need to carry out health monitoring (see sheet G401 or for rosin-cored solders, G402).

If you are in doubt, seek expert help. Remember, just because the advice means that you have to change old working practices or spend
money on new controls, that doesn’t make it unsuitable! Decide how best to make any changes required ‘across the board’.

If you do need expert help, please don’t give up. Ask your trade association, trade union, or log onto www.bohs.org.

**Facilities**
Provide clean facilities; a washroom, showers, storage for clean and contaminated work clothing, and a refreshment area. Provide coveralls that do not retain dust.

**Information, training and supervision**
Tell workers that fume and dust from welding and allied processes can cause lung disease, which leads to disablement and early death. There are also risks of asthma and cancer.

Train and supervise workers - you need to make sure they are doing the job in the right way, and using controls properly to reduce their exposure as low as possible. Include supervisors and managers in health and safety training.

Training should include:

- how to use the controls and how to check that they are working;
- how to maintain and clean equipment safely;
- how to use and look after personal protective equipment (PPE); and
- what to do if something goes wrong.

Remind workers to check any respiratory protective equipment (RPE) every time they put it on.

Supervision means checking workers:

- use the controls provided;
- follow the correct work method;
- turn up for health surveillance; and
- are following the rules on personal hygiene.

Contractors also need supervision. Find out if they are bringing hazardous substances on site, and how they will protect your workers from them.

**Environmental guidelines**
Releases may be regulated within the Pollution Prevention and Control (PPC) framework. Your local authority or the Environment Agency will advise you if PPC applies to your company, and about air cleaning and discharging emissions.

In Scotland, consult the Scottish Environment Protection Agency (SEPA). For more information, see www.netregs.gov.uk/netregs.
Other hazards in this industry

- Hot work
- Heat stress
- Flash-back
- Sparks
- Gas leaks (fuel gas, inert gas, oxygen)
- Noise
- Electrical hazards
- UV radiation (eyes and exposed skin)
- Manual handling
- Work near chlorinated degreasing tanks
- Work at height
- Work in confined spaces
- Slips and trips

COSHH essentials for welding, hot work and allied processes:

Advice sheets

**Generic sheets**

- WL1 Workshop ventilation
- WL2 Forced ventilation
- WL3 Fixed extraction: Welding booth or downdraught bench
- WL4 Moveable extraction: Fume hood on a flexible arm
- WL5 Respiratory protective equipment (RPE)
- WL6 RPE used with forced ventilation
- WL7 RPE used with engineering controls
- WL22 Expert advice

**Specific task sheets**

- WL8 Oxy-gas welding and brazing
- WL9 Manual metal arc (MMA) or stick welding
- WL10 Metal inert gas (MIG) and metal active gas (MAG) welding
- WL11 Tungsten inert gas (TIG) welding
- WL12 Flux-cored arc (FCA) and metal-cored arc (MCA) welding
- WL13 Resistance (spot) welding: Fixed equipment
- WL14 Gas and oxy-gas cutting
- WL15 Arc-plasma cutting: Fixed equipment
- WL16 Arc-air gouging (air-carbon arc gouging)

**Allied processes**

- WL17 Soldering: Hand-held with lead-based, rosin-cored solders
- WL18 Surface preparation: Pressure blasting (small items)
- WL19 Surface preparation: Pressure blasting (medium-sized items)
- WL20 Surface preparation: Pressure blasting (large items)
- WL21 Weld cleaning with pickling paste

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.