

# Illness caused by welding fume and gases

There will be people who don't get ill but some welders do get ill from breathing welding fume. Some may be ill for only a short time, others may get permanent illnesses like asthma. There is no easy way to know if it will be you. A few welders get so ill they have to stop welding and find a new career.

## So what can happen to you if you regularly breathe in welding fume?

### Pneumonia


Welders are particularly prone to a lung infection that can lead to severe and sometimes fatal pneumonia.

Modern antibiotics usually stop the infection however in severe cases you could end up in hospital. HSE estimate that breathing metal fume at work leads to 40-50 welders each year being hospitalised. Pneumonia kills about 2 welders\* each year. It can affect young welders as well as older people.

Exposure to welding fume in the past does not increase the chances of you getting pneumonia now.

\*Palmer et al (2009). Mortality from infectious pneumonia in metal workers: a comparison with deaths from asthma in occupations exposed to respiratory sensitizers. THORAX Online first, published on August 23, 2009 as 10.1136/thx2009.114280

### Occupational asthma

In a recent [review](#) <sup>[1]</sup> HSE found that the scientific evidence relating to welding fume and asthma was not strong enough for HSE to list welding fume as a confirmed cause of asthma. However, we know that about 9 welders, each year, get asthma so badly that they are able to claim benefits (Industrial Injuries and Disablement Benefit). HSE advises welders to protect themselves and follow the safe way of working that their employer should provide for them. Stainless steel fume has chromium oxide (CrO<sub>3</sub>) and Nickel Oxide in it. Both these chemicals can cause asthma. For this reason, stainless steel welding fume is considered more harmful than mild steel fume.

- [Phil Hydes video interview](#)<sup>[2]</sup>

### Cancer

Welding fume is internationally classified as possibly carcinogenic to humans (IARC classification group 2B). Although primarily associated with stainless steel welding, this classification is not limited to stainless steel fume. It covers all welding fume. The UK system of classifying substances

([Chemicals \(Hazard Information and Packaging for Supply\) Regulations 2009](#) <sup>[3]</sup>) does not consider by-products of a process. This means that welding fume is not currently assigned a hazard classification.

### Further information

- [A scientific review paper](#) <sup>[4]</sup> HSE presented to the Working Group on Action to Control Chemicals (WATCH) committee in 2010
- International Agency for Research on Cancer, [Monographs on the evaluation of carcinogenic risk to humans Vol 49](#) <sup>[5]</sup>, chromium, nickel and welding.

### Metal fume fever

Many welders report flu like symptoms after welding. The effects are often worse at the start of the working week. Metal fume fever is usually linked to welding or hot work on galvanised metals. High exposures to mild steel weld fume can also cause this illness. Metal fume fever does not usually have any lasting ill effects. Don't believe the stories about drinking milk before welding. It does not prevent you getting metal fume fever.

### Irritation of throat and lungs

Gases and fine particles in welding fume can cause dryness of the throat, tickling, coughing or a tight chest. The effects tend to be short lived. Ozone is a particular cause of this when TIG welding stainless steels and aluminium. High exposures to nitrous oxides (generated during most arc welding operations) can also cause this health effect. Extreme exposure to ozone can cause pulmonary oedema (fluid on the lungs)

### Temporary reduced lung function

Overall lung capacity and the ease at which you can breathe out (peak flow) are affected by prolonged exposure to welding fume. The effects tend to get worse through the working week but gradually improve when not exposed (eg over the weekend).

## Link URLs in this page

#### 1. review

<http://www.hse.gov.uk/aboutus/meetings/iacs/acts/watch/230210/watch-february-2010-welding-annex2.pdf>

#### 2. Phil Hydes video interview

<http://www.hse.gov.uk/mvr/resources/videos/video6.htm>

#### 3. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009

<http://www.legislation.gov.uk/ukxi/2009/716/contents/made>

4. A scientific review paper

<http://www.hse.gov.uk/aboutus/meetings/iacs/acts/watch/230210/watch-february-2010-welding-annex2.pdf>

5. Monographs on the evaluation of carcinogenic risk to humans Vol 49

<http://monographs.iarc.fr/ENG/Monographs/vol49/index.php>

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