

Welding fumes

Mild steel welding fume is classified as a human carcinogen and as such, requires more than general ventilation to protect workers.

Scientific evidence strongly suggests that exposure to any mild steel welding fume can cause lung, and possibly kidney cancer. In response, the Health and Safety Executive (HSE) has strengthened its enforcement expectation for all welding fume, stating that general ventilation does not achieve necessary control.

HSE guidance states:

- Control of the cancer risk will require suitable engineering controls for all welding activities indoors e.g. Local Exhaust Ventilation (LEV). Extraction will also control exposure to manganese, which is present in mild steel welding fume, which can cause neurological effects similar to Parkinson's disease.
- Where LEV alone does not adequately control exposure, it should be supplemented by adequate and suitable respiratory protective equipment (RPE) to protect against the residual fume.
- Appropriate RPE should be provided for welding outdoors. You should ensure welders are suitably instructed and trained in the use of these controls.
- Regardless of duration, HSE will no longer accept any welding undertaken without any suitable exposure control measures in place, as there is no known level of safe exposure.
- Risk assessments should reflect the change in the expected control measure.

To comply, you must review the level of protection offered to your welding workforce to ensure that it meets the strengthened expectations of the HSE. If not already in place, an RPE programme will need to be developed and implemented, ensuring workers are suitably trained and instructed in the use of this new RPE. Programmes such as this will ensure the correct RPE is selected, maintained, stored, cleaned and of course adopted and in cases where it is required that a Face-Fit Testing programme is implemented.

Facial hair is incompatible with some RPE solutions, in-particular those that require a tight-fitting seal, so workers need to be clean shaven to get a good seal with their respirator. That's why it's so important for the RPE selected to be correct and suitable for the workforce who will be wearing them. If there are good reasons for having a beard (e.g. for religious reasons), alternative forms of RPE, that do not rely on a tight fit to the face, are available.

Welding fume contents and risks

Depending on the job's specific circumstances, physical hazards should also be considered such as heat stress, EMF and noise exposure. As with any hazardous process, all aspects should be considered when undertaking the risk assessment and control measures implemented accordingly to reflect the level of risk.

The change in enforcement expectations should be reflected in the risk assessment, COSHH assessment and in the current control measures on site. Control measures should be replaced or be improved upon if required as per the risk assessment and in order to reflect the reclassification of mild steel welding fume as a human carcinogen.

Welding fumes

What control measures do I need to implement?

It must be understood that general ventilation does not achieve the essential welding fume exposure control. Control of exposure to carcinogenic fumes requires more effective engineering controls, such as LEV, which allows for at-source fume extraction thus preventing welding fume from spreading into the surrounding workplace and entering the worker's breathing zone.

Indoor welding tasks require the use of LEV. If LEV is unable to control fume capture then Respiratory Protective Equipment (RPE) is also required. Appropriate RPE should be also provided for welding outdoors.

Regardless of the duration of exposure, the HSE will no longer accept any welding undertaken without suitable exposure control measures in place as there is no known level of safe exposure. Adequate exposure control measures are a necessity and for good reason.

UKMHA risk assessments

The change in HSE enforcement expectations has been reflected in the Associations corresponding risk assessments, that are available from the Members Section of the website here.

The Association urges its membership to read the revised risk assessments carefully and resist the temptation to 'cut-corners' as the new HSE expectations will indeed add significant costs to their LEV, RPE and PPE budgets.

The bigger the operation, the more the expectation to comply in a meaningful and thorough manner.

HSE guidance

A selection of associated HSE guidance is listed below:

- **Welding fume: protect your workers**
- **COSHH essentials welding sheets**
- **Welding publications**
- **Local Exhaust Ventilation (LEV) workplace fume and dust extraction**
- **Respiratory Protective Equipment webpages**

The above information is provided by the UK Material Handling Association (UKMHA) as guidance and, where applicable, takes account of current best practice and our interpretation of current legislation. However, the UKMHA accepts no responsibility for the recommendations, advice, statements, opinions and conclusions set out above, either expressly or by implication. No warranty or representation of assurance, in respect of the accuracy or validity of the same is given.

The information in this Fact Sheet has been assembled and interpreted to give truck owners and users basic guidance on frequently asked questions. Further important information will be given in the quoted reference documents. Responsibility for meeting the safety obligations discussed rests with the employer, and the UKMHA will not accept liability for any problem arising as a result of the content of this document. Technical Bulletins, containing more detailed information and updated as appropriate, are made available free to members of the **UKMHA SAFE USER GROUP**.

Published by UKMHA – UK Material Handling Association

34B Kingfisher Court,
Hambridge Road,
Newbury,
Berkshire RG14 5SJ

01635 277570
info@ukmha.org.uk
www.ukmha.org.uk