



IFA

Institut für Arbeitsschutz der
Deutschen Gesetzlichen Unfallversicherung



Welding Fume Separation Equipment

Testing and certification

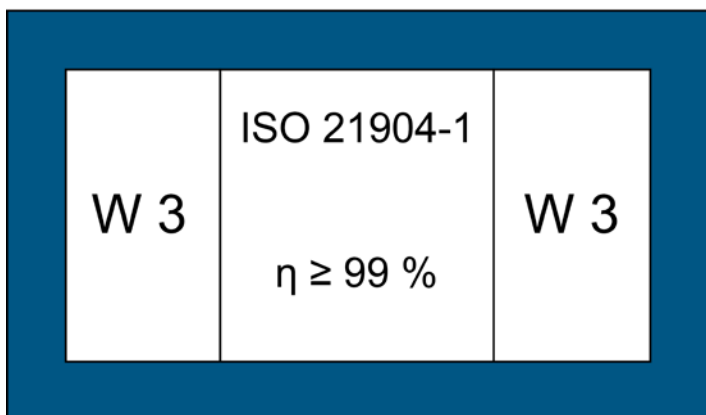
Testing and certification of welding fume separation equipment

Welding processes give rise to substances that are hazardous to health. For this reason, the welding fumes are captured and separated in filtering devices. In particular, fumes containing carcinogenic components are produced during the processing of chrome-nickel steels.

Section 10 (2) of the German Hazardous Substances Ordinance (GefStoffV) prohibits the recirculation of captured and purified air to the work area when the captured air contains carcinogenic, mutagenic or reprotoxic (CMR) substances. Exceptions to this prohibition are possible when certain criteria are met. These exceptions are governed in general terms in the Technical Rules for Hazardous Substances (TRGS) 560. A key condition for such an exception, which is also already formulated in the GefStoffV itself, is that the air purification process or equipment be recognized by an authority or by the German Social Accident Insurance Institutions.

In addition to the general provisions of TRGS 560, further provisions specific to certain activities or substances exist when captured air containing CMR substances is recirculated, and must be applied in these cases. For welding work, the regulation concerned is TRGS 528. This requires welding fume capture equipment to satisfy the requirements of EN ISO 21904-1 when the captured and purified air is to be returned to the work area. Where welding fumes contain CMR substances, the purified air is to be routed outdoors as exhaust air if possible, for example for static workplaces.

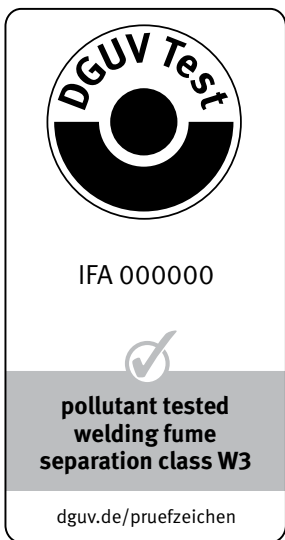
For air recirculation, for example at mobile workplaces, where welding fumes contain CMR substances approval in accordance with Section 10 (2) of the GefStoffV and W3 labelling are



W3 labelling.

required for the equipment in addition to testing against EN ISO 21904-1 and -2. The W3 welding fume separation class indicates that the equipment exhibits a separation efficiency of at least 99%. In addition to the separation efficiency, EN ISO 21904-1 describes numerous other requirements to be met by the equipment. These include activation of a warning signal when the specified minimum air volume flow rate is violated; requirements for low dust release during filter replacement; and requirements concerning the content of the operating instructions. Part 2 of the series of standards describes the procedure for testing the separation efficiency of welding fume separation equipment.

As an accredited test and certification body, the Institute for Occupational Safety and Health of the DGUV (IFA) tests and certifies welding fume separation equipment against EN ISO 21904-1 and -2. Equipment that has passed testing and



certification may bear the DGUV Class W3 welding fume test mark indicating that it has been tested with respect to hazardous substances, and is thus included in the list of approved welding fume separation equipment, available in the IFA handbook. This in turn means that this equipment is recognized by the German Social Accident Insurance Institutions.

DGUV test mark. Source: Deutsche Gesetzliche Unfallversicherung e.V. / DGUV e.V. (Berlin)



Welding fume capturing equipment. Image: IFA

If your capture and filtering equipment

satisfies all of the following requirements, the likelihood is high that we will be able to test it against EN ISO 21904-1 and -2:

- It is designed for capture and separation of welding fumes
- It is intended for capture of welding fumes at source
- The maximum capture volume flow rate does not exceed 2,500 m³/h

Please do not hesitate to contact us: we will consider the options and provide you with a tailored quotation.

Use this QR code to call up the [request form](#):



Use this QR code to call up the web page of the [IFA's Emission of Hazardous Substances Section](#):



Use this QR code to call up the digital [IFA handbook](#):



Contact

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