Safety Quick-Guide

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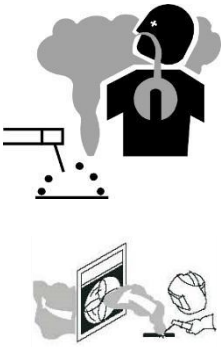
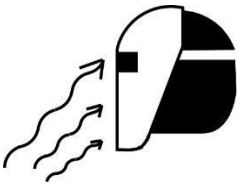
ATTENTION: This guide contains important user safety information. PROTECT yourself and others. **Read and understand both sides of this document as well as the warnings and instructions on the container and Safety Data Sheet (SDS) of the product before welding.** The SDS is available from your supervisor, safety director, www.hobartbrothers.com/welding-safety/msds.html or your Hobart Filler Metals distributor, or by calling 1-800-424-1543 or 1-937-332-5188.

⚠ WARNING



FUMES AND GASES can be hazardous to your health.

- Keep head out of the fumes.
- Avoid breathing welding fumes and gases.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
- Recommended method to determine adequate ventilation is to analyze a representative sample of air in the welder's breathing zone.
- Wear an approved respirator if ventilation is inadequate to limit exposure to regulated substances to below applicable exposure limits.
- Stop welding immediately if you experience dizziness or nausea, move to fresh air, and advise your supervisor.



ARC RAYS can injure eyes and burn skin.

- Always wear a helmet with the proper filter lens when welding.
- Always wear ear and body protection.
- Protective clothing must be of durable, flame-resistant material.

ELECTRIC SHOCK can KILL.

- Never touch live electrical parts.
- Always wear dry, hole-free insulating gloves.
- Insulate yourself from the work and ground using plywood, rubber mat or other dry, non-conductive material.

WELDING ARCS AND SPARKS can ignite combustibles and burn skin.

- Remove combustibles from welding area or use flame resistant shielding.
- Use fire watchers where required or when combustibles cannot be properly shielded.
- Never weld on containers which have held combustibles unless properly purged.
- Always wear flame-resistant protective clothing.

WHAT IS WELDING FUME COMPRISED OF?

The composition of welding fume is dependent on the welding consumable used, the base metal, coatings and contamination on the base metal, and the welding process. Welding fume is comprised of complex oxides and compounds of the welding consumable constituents described in the next section. Gases produced from welding include carbon dioxide, carbon monoxide, fluorine, nitrogen oxides, and ozone. An approved respirator must be used unless industrial hygiene monitoring indicates regulated substances are present below applicable exposure limits.

WHAT ARE POTENTIAL HEALTH HAZARDS FROM OVEREXPOSURE TO WELDING FUMES?

Potential harmful effects from short-term overexposure are termed “acute health hazards” and those from long-term overexposure are termed “chronic health hazards.” Acute health hazards from overexposure to welding fumes and gases include dizziness, nausea, and irritation of the eyes, nose or throat. Chronic health hazards from overexposure include lung diseases such as asthma and lung deposits or fibrosis. The International Agency for Research on Cancer has determined overexposure to welding fumes and UV radiation from welding to be carcinogenic to humans. Significant acute and chronic health hazards from common constituents of welding fume are described as follows: (please note that not all of the listed constituents are present in all welding consumables – see SDS for specific product)

Constituent	Acute Health Hazards	Chronic Health Hazards
barium	aching eyes, headache, muscle spasms, rhinitis, wheezing	circulatory, musculature, and nervous system disorders
chromium VI compounds	asthma symptoms, lung damage, respiratory tract and skin irritation	lung, nasal, and sinus cancer
cobalt	pulmonary and skin irritation	pulmonary system disorders
fluorides	bronchitis, eye and skin burns, pulmonary edema	bone erosion, mottling of teeth
iron and iron oxides	no specific effects known	lung deposits
manganese	metal fume fever	nervous system disorders
nickel	allergic reactions, chest pain, nausea	lung, nasal, and sinus cancer; lung deposits or fibrosis
silicon dioxide (amorphous silica)	eye, respiratory system, and skin irritation	lung deposits
titanium dioxide	respiratory system irritation	lung fibrosis

WHERE CAN I GET ADDITIONAL INFORMATION ON WELDING SAFETY?

Additional information on welding safety is available from www.hobartbrothers.com/welding-safety.html including the following:

- American National Standard Z49.1 - Safety in Welding, Cutting, and Allied Processes;
- Links to AIHA, AWS, NIOSH, and OSHA websites; and
- Safety Data Sheets.

Also consult American Welding Society publication F4.1 – Recommended Safe Practices for the Preparation of Containers and Piping for Welding and Cutting.