

# Safety Facts: Hot Work\*



Hot Work is usually defined as any open flame, spark or heat producing activity and is typically associated with cutting, welding, grinding and brazing operations.

Any industrial hot work process, such as, welding and cutting operations, present certain potential hazards. This can result in temporary or permanent physical injury, short- or long-term health effects, discomfort and in severe circumstances, death.

A thorough understanding of identifying process hazards is necessary to develop adequate controls to prevent accidents and eliminate adverse health effects.

## Key Characteristics of Hot Work

- Hot materials that can generate heat to ignite another material.
- Heat, sparks, flames
- Confined spaces
- Electrical shocks
- Non-ionizing radiation—ultraviolet or infrared light
- Fumes—chemical or oxygen deficient and/or enriched air
- Gas cylinders

## Associated Risks

Although hot work presents a number of risks, the potential for starting a fire is among the most significant.

1. Sparks and Slag—fall through cracks or openings on combustible material, or on flammable liquids. Sparks can fly 35 feet horizontally, and may smolder in cracks with fire breaking out after the end of the shift.
2. Metal—being cut or welded can transmit heat by conduction or radiation and start a fire in adjacent or nearby combustibles.
3. Torch—the cutting torch accidentally gets too close, or is in contact with combustible material which acts as an ignition source.
4. Burns—can result from contact with hot parts or welding sparks and spatter. These can ignite combustible material or present an explosion hazard when in the presence of explosive mixtures of dusts or vapours.
5. Fumes—Welding and cutting operations can produce smoke-like fumes. The health effects of exposure to fumes range from discomfort and temporary illness to reduced lung function and possibly death, depending on the ingredients of the fume, its concentration, the duration of exposure, and your sensitivity.

## Preventative Next Steps

- Move work to a safe place. If work can't be moved, remove combustibles from the area.
- Good Housekeeping. Sweep the floors clean.
- Keep fire extinguishers handy and know how to use them
- Don't cut or weld in the presence of flammable liquids or vapors including old containers or in the presence of lint or dust.
- Acetylene gas can 'pool' and ignite; avoid situations where the gas can 'pool' if the valve is left open.
- Choose a safe direction for the cut so that the sparks are going in the direction you want.
- Containers—Must be cleaned to ensure no flammable materials or vapors are present.
- Correct use of PPE including eye, face and lung protection.
- Understand the health effects of the hot work.



## For additional resources visit:

*CSA W117.2-94, Safety in Welding, Cutting and Allied Processes*

*WorkSafe BC, OHS Regulation Part 12: Tools, Machinery and Equipment*

