



WHMIS Quick Facts

Workplace Hazardous Materials Information System



Flammable Gases

Common flammable gases and their flammable ranges* are:

- hydrogen (4% - 75%)
- acetylene (2.5% – 81%)
- propane (2.2% – 9.5%).

A **flammable gas** is a compressed gas that can easily catch fire and continue to burn. The gas can easily form a flammable mixture with air.

Hazards of Flammable Gases

Fire or explosion – The basic requirements for a fire/explosion are fuel (such as flammable gas), air, and an ignition source*.

Remember, there are many hidden ignition sources. *Always assume there are ignition sources around you.*

The best protection from fire/explosion is to minimize the amount of gas released into the workplace air in order to prevent the buildup of a flammable atmosphere.

Other hazards – Even if you are working well below the lower explosive limit (LEL)*, remember that some flammable gases can also pose health hazards and be reactive.

Flammable gases can displace air. An undetected leak in a confined area could displace enough air to suffocate a person.

When working with flammable gases there is ALWAYS the potential for something to go wrong. Be aware of ALL the hazards.

Working Safely with Flammable Gases

- UNDERSTAND** all of the hazards associated with the material, and how to use it safely.
- CONSULT** the Material Safety Data Sheet (MSDS) for information about the hazards and necessary precautions for the flammable gas you are using.
- MINIMIZE** the risk of fire/explosion by preventing the release of gas into the workplace air.
- USE** flammable gases only in well-ventilated areas.
- USE** the smallest amount of flammable gas necessary for the job.
- USE** non-sparking ventilation systems and equipment.



A – Compressed Gas



B – Flammable/Combustible

* GLOSSARY OF TERMS *

Ignition Source(s) Common ignition sources include sparks, flames, friction, and hot surfaces. "Hidden" sources include static electricity, light switches, and other electrical devices such as power tools.

Lower Explosive Limit (LEL) The lowest concentration of gas in air that will burn or explode upon contact with a source of ignition.

Upper Explosive Limit (UEL) The highest concentration of gas in air that will burn or explode upon contact with a source of ignition.

Flammable Range Any level *between* the upper and lower explosive limits, where the material can easily ignite or explode with a source of ignition.

- GROUND** and **BOND** cylinders during transfer operations to prevent buildup of static charge.
- USE** only equipment that is approved for use with flammable gases.
- PRACTICE** good housekeeping by keeping areas clear of materials that burn.
- REPORT** leaks and ventilation failures to your supervisor immediately.
- UNDERSTAND** and **PRACTICE** emergency procedures so that you know what to do if it becomes necessary.
- DO NOT HEAT** cylinders or distribution systems containing flammable gases.
- DO NOT USE** flammable gases for anything other than their intended uses.

***In the event of an emergency...
Warn people in the area and move to a safe location to call for emergency help.***

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