DANGEROUS ATMOSPHERES IN CONFINED SPACES

TOOLBOX SAFETY TALK

A confined space does not necessarily mean a small, enclosed space. It could be rather large, such as a ship's hold, a fuel tank, or a pit.

DEFINING A CONFINED SPACE

- 1. The space is large enough to allow an employee to enter and perform work;
- 2. It has limited means of entry or exit. Entry may be obtained through small or large openings and usually there is only one way in and out; and
- 3. Confined spaces are not designed or used for continuous human occupancy.

DANGERS IN CONFINED SPACES

- Oxygen-deficient atmospheres
- Flammable atmospheres
- Toxic atmospheres
- Mechanical or physical hazards
- Loose materials that can engulf or smother

DANGEROUS ATMOSPHERES

A confined space with sufficient oxygen might become an oxygen-deficient space once a worker begins welding or performing other tasks. These are some of the reasons confined spaces are hazardous:

- Lack of adequate ventilation can cause the atmosphere to become life threatening because of harmful gases.
- The oxygen content of the air can drop to deadly
- Sometimes a confined space is deliberately filled with nitrogen as a fire prevention technique. Nitrogen cannot sustain human life. You must use respiratory protection.
- Many gases are explosive and can be set off by a
- Even dust is an explosion hazard in a confined space. Finely-ground materials such as grains, fibers, and plastics can explode upon ignition.
- Confined spaces often have physical hazards, such as moving equipment and machinery.
- Materials can fill tanks and other enclosed confined spaces, engulfing occupants.

IDENTIFY CONTROLS

Check for atmospheric hazards before entering any confined space. Use properly calibrated gas detection equipment. Many dangerous atmospheres cannot be detected by smell or taste.

You may need a selection of detectors—one detector can't test for everything. Some detectors have sensors that check for oxygen content, explosive gases or vapours, and a range of toxic gases. Some have only one or two sensors and may not detect certain types of hazards.

Check all levels of the space. Some contaminants are lighter than air and accumulate near the top. Others are heavier than air and settle at the bottom.

If you leave the space, test before you go back in. Dangerous atmospheres can develop without warning.

If tests indicate a dangerous atmosphere, you must NOT enter the space until it is thoroughly ventilated and subsequent tests indicate the air is safe to breathe.

Ventilation and testing must continue as long as you are in the space.

If the space can't be adequately ventilated, you can only enter if:

- you wear suitable respiratory protection and a full-body harness attached to a rope anchored outside the space and held by a worker with an
- you have a means of communication with the worker outside: and
- a person trained and equipped in artificial respiration and emergency rescue is available outside the space.

Never try to rescue a worker overcome in a confined space unless you are trained and equipped for it.