

Dangerous goods – Miscellaneous

Hazards of cutting empty drums >

This information bulletin highlights the hazards of cutting empty drums and provides safety hints if proceeding.

Introduction

Cutting the top off or welding any drum is dangerous, it is often unclear what has been in an empty drum. Approaching the task incorrectly could have explosive results!

Empty steel drums that have previously contained flammable materials can constitute an explosion or fire hazard many years after being emptied. Grinding, cutting or welding drums may end in disaster if appropriate precautions aren't taken. It is advised not to do hot work on such drums at all, but if you intend to, please read and follow the advice below.

Usually, sparks or heat from the cutting tool cause the explosion – but it may not happen immediately as you cut into the drum. The very act of opening a cut in the drum may allow air to seep in slowly, gradually creating an explosive mix with the chemical inside. Thus, several minutes may elapse while the drum is being cut before the air/fuel mixture becomes explosive.

Safety hints

- **Never** cut the tops off drums that have contained flammable liquids or flammable gases without following the procedures outlined in this information bulletin.
- Do not apply heat to drums that have held chemicals. These may produce poisonous gas and cause serious harm to your health.
- Store empty drums in a well-ventilated place away from work areas (bungs removed).
- **Never** weld or grind near any empty drums – SPARKS FLY!
- Do not use drums as welding platforms – construct a proper trestle.
- Correctly label drums on site.

Before cutting or grinding – think!

What has the drum been used for?

- Was it flammable liquid or gas?
- Was it a chemical?
- Is there a hazard diamond on the label?

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If you answer 'yes' or 'do not know' to any of these questions DO NOT APPLY HEAT TO THE DRUM before taking the following precautions.

Before applying heat to a drum:

- Remove all possible sources of ignition from the area (flames, mechanical sparks, electrical sparks etc)
- Remove all flammable substances and combustible materials from the area.
- Remove all caps and stoppers from the drum.
- Purge the drum (see below).
- Wear protective clothing when cutting (spectacles, gloves, overalls).
- If using an electric power tool to cut the drum, make sure the drum is completely drained and dry before starting.

Purging methods

Drums can be purged of gas by one of three methods:

- Fill the drum completely with water (but remember that water may not remove all residues and solids).
- Fill the drum with an inert gas such as nitrogen.
- Purge the drum with steam.

Drums can be purged of gas by one of three methods, make sure the drum is completely filled, otherwise some vapour can remain even through several washings, causing an unexpected explosion.

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