

Occupational toxicology in BC – March 2018

WorkSafeBC Publishes Bulletin on Preventing Pentane Gas Fires

WORK SAFE BC

WorkSafe Bulletin

Reducing the risk of pentane gas fires and explosions for users of expanded polystyrene foam

Expanded polystyrene (EPS) foam releases flammable pentane gas. If the pentane has not completely off-gassed and the EPS foam is encased within a structure, the pentane becomes trapped within the structure. If an ignition source, such as a welding torch or drill, cuts into the structure, the pentane can ignite and cause a fire or explosion. This bulletin gives an overview of EPS foam and its uses, explains the pentane gas hazard, and discusses steps you can take as an employer to reduce the risk of fires and explosions.

[\(Read more\)](#)

The risk reduction measures are

- “Find out whether you have EPS foam at your site. If you do, ensure it's located in a well-ventilated area where it can safely off-gas.
- Put up signs at or near the locations of EPS foam and make sure workers understand the importance of not encasing it.
- When doing hot work on or near the location of EPS foam, allow for additional space and do the work outside if possible; use appropriate PPE, such as flame-resistant apparel; and minimize the number of workers in the area during the time the hot work is being done.
- If it is absolutely necessary to encase EPS foam, allow sufficient time for it to off-gas before encasing it.”¹

Hidden hazards in shipping containers A warning from WorkSafeBC

Repurposing shipping containers, which happens all over B.C. is a growing trend, despite the potential pitfalls.² [\(Read more\)](#)

The containers are watertight that is well sealed with little or no ventilation, which is potentially dangerous for other uses.

Case report (1)

A volunteer firefighter was struck, when the container exploded as a result of fuel vapour which was exposed to extreme heat in 2011. He died by a door that blew off a shipping container that was storing gas-powered tools.²

Case report (1)

A propane barbecue stored inside a shipping container exploded in 2013, blowing a 113-kilogram door 40 metres into a public (Rutledge) park.²



Photo: rolo dsgn. Photo adopted from ³ --- See next column

Reused shipping containers, which are gaining in popularity

Shipping containers are being reused for more and more things, which can create hazards if it's unclear what is inside them. Photo: rolo dsgn. Photo adopted from ³

Shipping containers have

- Small vent in case someone gets trapped inside,
- Very minimal ventilation (not enough if one has gas vapours)
- If fuel venting off Fumes will build up, and the container can auto-ignite.³

[\(Read more\)](#)

Inspections of ammonia refrigeration plants, and issues over 1000 ammonia orders

Following inspections of 181 ammonia refrigeration plants, carried out by British Columbia's health and safety agency, WorkSafeBC issued over 1000 ammonia orders.⁴

The most commonly cited orders were

- Monitoring and alarm systems
- Pressure relief alarm systems
- Exposure control plans

[\(Read more\)](#)

Second Phase of WorkSafeBC Ammonia Inspection Initiative

Second phase would focus on:

Contractors conducting installations, maintenance, and other activities on ammonia systems.⁵

[\(Read more\)](#)

References

1 OHS-2018-03-23. WorkSafeBC Publishes Bulletin on Preventing Pentane Gas Fires.

<https://ohsonline.com/articles/2018/03/23/worksafebc-publishes-bulletin.aspx>.

2 JournalofCommerce-2018-03-07. WorkSafeBC warns of hidden hazards in shipping containers.

<https://canada.constructconnect.com/joc/news/ohs/2018/03/workafebc-warns-hidden-hazards-shipping-containers>.

3 AshcroftCacheCreekJournal-2018-03-13. Reused shipping containers, which are gaining in popularity, can pose a hazard. <https://www.ashcroftcachecreekjournal.com/news/reused-shipping-containers-which-are-gaining-in-popularity-can-pose-a-hazard/>.

4 CoolingPost-2018-03-09. WorkSafeBC issues over 1000 ammonia orders. <https://www.coolingpost.com/world-news/worksafebc-issues-1000-ammonia-orders/>.

5 OHS-2018-03-09. WorkSafeBC Ammonia Inspection Initiative Now in Second Phase.

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