

# Worker Burned In Methanol Tank Explosion Injury Incident

SAFETY ALERT

ISSUE #: 14-2012

#### Enform: Your Partner in Safety

Enform is the upstream oil and gas industry's advocate and leading resource for the continuous improvement of safety performance. Our mission is to help companies achieve their safety goals by providing practices, assessment, training, support, metrics and communication. Our vision is no work-related incidents or injuries in the Canadian upstream oil and gas industry.

#### An Industry Product

This document was developed by industry for industry. Working collaboratively, Enform works with the submitting organization representative in developing these documents to improve the industry's hazard awareness. Canada's leading oil and gas industry trade associations support the use of shared information to help companies of all sizes improve performance.

#### Disclaimer

This document is intended to be flexible in application and provide guidance to users rather than act as a prescriptive solution. Recognizing that one solution is not appropriate for all users and situations, it presents accepted guidance that generally apply to all situations. While Enform believes that the information contained herein is reliable under the conditions and subject to the limitations set out, Enform does not guarantee its accuracy. The use of this document or any information contained will be at the user's sole risk, regardless of any fault or negligence of Enform and the submitting organization.

#### Copyright/Right to Reproduce

Copyright for this document is held by Enform, 2012. All rights reserved. Enform encourages the copying, reproduction and distribution of this document to promote health and safety in the workplace, provided that Enform is acknowledged. However, no part of this publication may be copied, reproduced or distributed for profit or other commercial enterprise, nor may any part be incorporated into any other publication, without written permission of Enform.

#### Details

Release Date: October 12, 2012  
Incidence Type: Injury Incident  
Country and Region: Canada

For more information on this event, please contact: [safety@enform.ca](mailto:safety@enform.ca)

#### Description of Incident:

An operator was checking the level in a 500 gallon methanol storage tank

- Tank was polyethylene plastic, double wall
- A worker climbed on top of the tank. Flammable vapour was ignited, when the worker touched the cap on the inner tank, resulting in an explosion and flash fire.
- The worker received first aid for a second degree burn to the arm.

#### What Caused It:

- The worker accumulated an electrostatic charge, when positioned on top of the tank
- Flammable methanol/air mixture developed inside the inner tank or interstitial space
- It was 18 degrees Celsius at the time of the incident and methanol has a flash point of 11 degrees Celsius
- Level inside the tank was low (less than 10 percent of total volume)
- Plastic is nonconductive and difficult to ground, and not recommended to store flammable liquids (as per [API RP 2003](#))

#### Corrective/Preventive Actions:

- Update procedures for tank inspections, maintenance, and filling
- Under no circumstances is climbing on top of a tank permitted
- Install sight glass and piping to allow for filling from the ground level, with stinger extending to the bottom of the tank to prevent splash filling
- If it is necessary to open the tank cap, a personal ground strap must be worn in combination with gauntlet style gloves. Platforms to be provided if necessary.

#### Long Term Action Plan:

- Evaluate the suitability of plastic tanks for storage of flammable fluids such as methanol

By industry, for industry