

## Tank Gauging Hazard Alert

### Final Content Approved 04/22/15

1. Tank Hazard Alert: Gauging, Thieving, Fluid Handling
  - How to Recognize and Avoid Hazards
  
2. Opening message:

**Opening thief hatches of storage tanks can lead to the rapid release of high concentrations of hydrocarbon gases and vapors.** Those may result in very low oxygen levels and toxic and flammable conditions around and over the hatch. Recent reports have documented fires or explosions, and described workers experiencing dizziness, fainting, headache, nausea, and, in some cases, death while gauging tanks, collecting samples, or transferring fluids. **Tank gauging, thieving, and fluid handling can be performed safely with proper precautions.**
  
3. Tank 1: Hazards that can be encountered by workers
  - Oxygen Displacement/Deficiency (gauge on empty/yellow background)
  - Fires/Explosions (fire placard)
  - Chemical Toxicity (exclamation mark placard)
    - Hydrocarbon Vapors
    - Propane
    - Butane
    - Benzene
    - Hydrogen Sulfide (H<sub>2</sub>S)
  
4. Tank 2: Potential Effects of Exposure
  - Death
  - Chronic illness
  - Burns from flash fires
  - Dizziness
  - Irregular heartbeat
  - Irregular breathing
  - Respiratory irritation
  - Fatigue or exhaustion
  - Nausea, upset stomach
  - Eye irritation
  - Headache
  
5. Tank 3: Employers:
  - Must conduct exposure and hazard assessments at worksites to determine needs for:
    - Engineering controls
    - Respiratory protection
    - PPE
    - Monitoring device such as:
      - Multi-gas meter
      - Other direct-reading toxic gas meter (benzene)

- Must provide training to workers:
    - Hazard Communication
    - Lone Worker Policy
    - Proper use of PPE and respiratory protection
    - Types, use, and limits of respiratory protection equipment as appropriate
    - Recognizing ignition sources
    - Tank gauging work practices/procedures
    - Emergency Response Plan
      - Procedures for alarm response and site re-entry
    - Use and limits of toxic gas or multi-gas meter(s) for O<sub>2</sub>, H<sub>2</sub>S, LEL, and CO
  - Should implement engineering controls such as:
    - Remote Gauging
    - Closed Loop Systems
    - Auto Gauging
    - Sight Glasses/Gauges
    - Remote Venting
  - Verify sub-contractors are following work practices/procedures
6. Tank 4: Use proper PPE to protect:
- Head
  - Eyes, Ears and Face
  - Body
  - Respiratory Tract
  - Hands
  - Legs and Feet
7. Tank 5: Workers:
- Your employer has established safety procedures for your protection including a Hazard Assessment and Work Practices/Procedures
- Follow your employer's Hazard Assessment and established Work Practices/Procedures
    - Use toxic- or multi-gas meter provided by your employer as per your training
    - Heed all alarms
    - Stop flow into tanks prior to gauging when possible
    - Minimize leaning over open hatches – Stand away/upwind/crosswind when possible
      - Inversion/high humidity/ lack of wind could increase danger
    - Follow your employer's "lone worker" policy
    - Allow tanks to ventilate after opening thief hatches
    - Evacuate unsafe work areas and report immediately
    - Know the limits of your respiratory protection as provided during employer training
    - Immediately report any health symptoms
  - Wear PPE as required/provided
  - Attend Hazard Communication Training
  - Be aware of potential ignition sources:
    - Static
    - Cell phones
    - Sparks from tools or metal objects

- Open flames
- Non-approved electrical equipment/devices
- Ensure proper grounding/bonding
- If you are not sure, STOP the job and ask!
- Everyone has the right to STOP work that is unsafe.

8. Closing statement:

- **YOUR LIFE can change in a SINGLE BREATH or with ONE SPARK.**

9. Document logos

- Alliance
- AESC
- National Steps

10. Disclaimer

Through the OSHA National Steps Alliance, this Tank Gauging Hazard Alert is for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. March, 2015

Under the Occupational Safety and Health Act, employers are responsible for providing a safe and healthy workplace and workers have rights. OSHA can help answer questions or concerns from employers and workers. OSHAs [On-site Consultation Program](http://www.osha.gov/consultation) (www.osha.gov/consultation) offers free and confidential advice to small and medium-sized businesses, with priority given to high-hazard worksites. For more information, contact your [regional or area OSHA office](http://www.osha.gov/html/RAmap.html) (www.osha.gov/html/RAmap.html), call 1-800-321-OSHA (6742), or visit [www.osha.gov](http://www.osha.gov).