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# DAYTON, OHIO REGIONAL HAZ-MAT RESPONSE TEAM NEWSLETTER

August, 2024

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**This month we have our Greene County LEPC Exercise at Calamityville in Fairborn.** See Training for more details and the proper date.

It is always good to review specific types of incidents we may respond to. This is taken from our “Top Ten List” and is a good review of the differences between Chlorine, the gas, and Sodium Hypochlorite.

**Is It Deadly CHLORINE GAS or LIQUID BLEACH?**

## CHLORINE GAS

- A greenish yellow gas with a pungent odor.
- Toxic by inhalation.
- Does not burn but, like oxygen, supports combustion.
- Vapors are much heavier than air. Vapor Density = 2.49
- Mixture with fuels may cause explosion. Hydrogen and Chlorine mixtures are exploded by almost any form of energy (heat, sunlight, sparks)
- Must protect lungs, eyes and skin from exposure.
- Must protect body parts from cold if exposed to liquid.
- If contaminated with liquid, decontaminate immediately.

*Chlorine is typically shipped and stored as a liquid in a cylinder under pressure*

- The maximum-sized cylinder shipped by rail is capable of holding 90 tons of liquid chlorine.
- Tank cars shipped by motor vehicle may have a capacity up to 22 tons.
- One-ton chlorine cylinders are transported by truck to facilities that use chlorine for drinking water treatment and industries.
- 100- and 150-pound cylinders of chlorine are common at industrial sites.



90 Ton Railcar



1 Ton Cylinder



100 – 150lb Cylinder

The **Graniteville train crash** was a rail disaster that occurred on January 6, 2005 in Graniteville, S.C. with 9 fatalities from inhalation of deadly CHLORINE GAS.

### **LIQUID BLEACH**

#### *Sodium Hypochlorite (NaOCl) Solution*

Sodium hypochlorite is an inexpensive, strong oxidizing agent, that is used as a disinfectant and bleaching agent. It is unstable as a solid, but solutions of up to 40% are available commercially.

*Hypochlorite solutions liberate toxic gases such as chlorine when acidified or heated.* The reaction with ammonia or with substances that can generate ammonia can produce chloramines which are also toxic and have explosive potential

- **Clorox™** - household bleach 3%-10% NaOCl in Water
- **Sanygen™** - liquid pool shock 10% to 15% NaOCl in water

This solution liberates toxic gasses when mixed with acids; mix pool shock with pH down (Muriatic/aka Hydrochloric acid or Sulfuric acid) at the pool and you have **Chlorine Gas**.

**When someone tells you its Chlorine, you must ask a lot of questions to confirm.**

## **Training**

**Change in training dates.** I accidentally published the dates of the August training as the 12, 13, & 14 when they are actually the **5, 6, & 7** at Calamityville in Fairborn. Then I accidentally published the exercise on the wrong date. **The Greene County LEPC Exercise will be the 6<sup>th</sup> of August.** Please make a note of it as we need as many Team Members as possible to participate. This training will be from 0800-1200hrs, with lunch provided.

**Training for this month is August 5, 6, & 7 from 0800 - 1200hrs at Calamityville. 506 E. Xenia Dr. Fairborn, OH 45324. Lunch will be provided.**

### **2024 Training Dates**

September – 16-17-18 – Railroad

October – 21-22-23 – 52<sup>nd</sup> Civil Support Team Sampling for the LRN

November – 18-19-20 – OEPA

December - No training