

Emergency Planning 101

A Regulatory Review & Tips for Getting Started

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Why are we here?



Fertilizer explosion West, TX- 15 Dead, including 12 firefighters

My facility won't effect anyone else.



Is this a local concern?



Danvers, MA

What are the Requirements?

- ▣ EPCRA & SARA Title III
- ▣ RCRA
- ▣ Oil Pollution Prevention Act (SPCC)
- ▣ CFATS – Chemical Facility Anti-Terrorism Standard
- ▣ CAA – Risk Management Program
- ▣ OSHA – Process Safety Management Standard*
- ▣ MA Hazardous Materials Processing* Regulation

EPCRA – Emergency Planning & Community Right to Know

- ▣ Requires facilities storing materials in excess of Threshold Planning Quantities (TPQs) – typically 10,000 lbs to file annual Tier II with local emergency responders.
- ▣ Lower TPQs (e.g. 100 to 500 lbs) for extremely hazardous substances (EHSs – chlorine, AA, HF)
- ▣ EHS facilities must work with LEPC & FD to develop emergency response plan.
- ▣ Tier II filers are expected to support and participate in LEPC/REPC.
- ▣ Provides broad authority to LEPC/FD to request information to support local planning effort.

RCRA – Resource Conservation & Recovery Act

- ▣ LQGs are required to develop a Contingency Plan and share it with local emergency responders.
- ▣ LQGs are now required to work with local responders to develop a site pre-plan.
- ▣ SQGs are encouraged to develop a Contingency Plan and share it with emergency responders.

Oil Pollution Prevention Act

- ❑ Facilities that store more than 1320 gallons of petroleum on site are required to develop a Spill Control & Countermeasures Plan (SPCC Plan).
- ❑ Regulated sites must initiate control measures to prevent the release of petroleum.
- ❑ Site must identify and train response staff.
- ❑ Site must identify off site resources to provide spill response when needed.
- ❑ Site is required to conduct monthly inspections.

Chemical Facility Anti-Terrorism Standard

- ▣ Facilities storing specific materials above planning threshold are required to report and screen their facility for risk using Homeland Security protocol.
- ▣ Facilities deemed a risk may have to complete more in depth screening or may be inspected by Homeland Security.
- ▣ Sample materials of concern: anhydrous ammonia, chlorine, propane

Clean Air Act – Risk Management Program

- ▣ Facilities that store respiratory toxins (e.g. chlorine or anhydrous ammonia) above planning thresholds must prepare RMP plan.
- ▣ RMP plan will include a comprehensive review of the facility, identify control or mitigation measures, requires the preparation of a worst case and realistic release scenario.
- ▣ These facilities can pose major risks that can impact square miles.

OSHA – Process Safety Management Standard

- ❑ Facilities that store or use specific flammable or toxic materials on site usually in excess of 10,000 lbs are required to develop a PSM plan.
- ❑ The standard requires the facility to conduct a comprehensive hazard analysis and to initiate control measures to mitigate the risk posed by site operations.
- ❑ These facilities can pose a major hazard.
- ❑ These sites should actively coordinate with local responders to develop a training and response plan.

MA Hazardous Materials Processing Standard

- ❑ Most businesses using hazardous materials are now required to provide process information to local responders & obtain a permit from the FD.
- ❑ This standard applies OSHA PSM type requirements on facilities that have tanks/containers with a volume of 300 gallons.
- ❑ Grants broad authority to FD to seek information for planning purposes.
- ❑ Requires facilities to work with FD to develop an emergency response plan.

Leveraging Regulations to Collect Information

- ❑ Create review checklist for use during site plan or permit review process.
- ❑ Ask applicant if any of these requirements apply to their operation. **Require a written response.**
 - Hint: Also ask for a copy of their chemical inventory to compare.
- ❑ Require applicants to provide copy of their response plans and to work with responders to develop pre-plan.
- ❑ Remember state & federal agencies will help if sites are unresponsive.

The Following Municipal Facilities Are Often Subject to these Regulations

- ▣ Highway Garage
- ▣ Drinking Water Plants
- ▣ Wastewater Plants
- ▣ Ice Rinks
- ▣ Municipal Pools
- ▣ Motor pool/fleet operations
- ▣ Grounds/field maintenance
- ▣ Airports
- ▣ Port Authorities

Goals for Pre-planning

- ▣ Identify & address historic problem areas.
- ▣ Identify & plan for likely scenarios.
- ▣ Collect & organize the info you would need if these events occur.



Things to Consider

- ▣ Process or system upset
- ▣ Structural failure
- ▣ Transportation release
- ▣ Problems caused by loss of power or water
- ▣ External impacts
- ▣ Potential for run away reactions
- ▣ Weather induced problems
- ▣ Issues causing greater concern during a fire

Use the 80/20 Scale

- ▣ Focus on what you can manage.
- ▣ Work through scenarios for 3 most likely problems.
- ▣ Inspect, maintain, repair or upgrade your equipment.
- ▣ Develop procedures and train staff to support effort.
- ▣ Review, practice and update procedures.
 - Drills help alleviate the mental fog that can occur in a crisis.

Coordinating with Emergency Responders

- ▣ Invite the fire dept. to tour your facility.
- ▣ Share your Contingency Plan.
 - Make the most of your Knox box.
 - Create a Pre-plan
- ▣ Review high hazard/critical processes or storage areas.
 - Label and photograph these areas.
- ▣ Do you need specialized medical support
 - Cyanides, Hydrofluoric acid or others?
- ▣ Consider a drill.

Prepare a Pre-Plan

- ▣ Identify critical do's & don'ts's
- ▣ Establish incident command and notification procedures.
- ▣ Identify safety controls to be maintained.
- ▣ Plan for 3 likely potential problems.
- ▣ Identify potential external impacts - develop notification or response procedures for these receptors.
- ▣ Train staff
- ▣ Review plan with emergency responders.

A Failure to Plan



Sample Pre-Plan



Coatings, Inc. Emergency Plan Summary ***123 Fake St., New Hartford, CT 06057***

Facility Emergency Contacts:

Name:	Cell Telephone No.	Home Telephone No.	Home Address
Steve Jobs (1 st shift)	123-456-7890	123-456-7890	1 Home Ave, New Hartford, CT 06057
Hulk Hogan (1 st shift)	123-456-7890	123-456-7890	2 Home Ave, New Hartford, CT 06057
Tina Turner (2 nd shift)	123-456-7890	123-456-7890	3 Home Ave, New Hartford, CT 06057
Wile E. Coyote (2 nd shift)	123-456-7890	123-456-7890	4 Home Ave, New Hartford, CT 06057

Critical Questions

Does an explosion risk exist at the facility?	YES
Could the facility release a respiratory hazard that could threaten site workers, emergency responders or neighbors?	YES
Is it okay to shut the power off during an event?	NO
Is it okay to shut the water off during an event	NO
Is it okay to shut the gas off during an event?	YES
Can a run-away reaction/process occur?*	YES

***If so, describe how:** Failure of safety equipment could result in a continuous release of flammable adhesives from coating units. A loss of cooling water to the mixing tanks in the south side of the building could result in a runaway exothermic reaction, resulting in a fire.

Describe special hazards identified above: The site contains large quantities of flammable adhesives and liquid solvents, including three 3,000-gallon and two 4,500-gallon adhesive storage tanks, as well as numerous 55-gallon drums. The primary solvent used at the facility is toluene, which is stored in a 3,000 gallon and a 5,000

Process Descriptions & Scenarios

Coatings, Inc. Emergency Plan Summary

gallon underground storage tank. The facility also contains an 11,000 gallon liquid nitrogen tank, which is used to supply nitrogen gas to the coating units. A leak from the nitrogen piping located within the facility could result in suffocating atmospheres. If the solvent recovery system is shut down inappropriately, an explosive atmosphere could develop inside the coating lines. The facility is equipped with a natural gas-powered emergency generator, however emergency responders should first confirm with Coatings, Inc. staff that it is safe to shut off power to the facility if needed. If the water to the facility is cut without first ensuring the mixing tanks have been shutdown, the contents of the mixing tanks could overheat and ignite.

Worst-case scenarios that could occur involving hazardous materials stored on site:

Scenario	Negative Outcome	Location
Atmospheric controls within coating units fails.	Explosion	Eastern and southern sections of the process floor.
Uncontrolled fire in Drum or AST Bulk Storage Rooms.	Potential for devastating fire. Due to administrative controls in the drum storage room (blow-out walls and skylights), an explosion in the AST Bulk Storage Room has the potential to be more structurally damaging than an explosion in the Drum Storage Room.	Western side of the building.
Loss of cooling water to the mixing tanks while in operation	Mixing tanks overheat and contents ignite	Mixing Room on the southwest side of the building

See attached facility map, which includes the locations of hazardous materials, locations of process equipment, locations of emergency response equipment, and locations of Process Stop switches and buttons.

Materials of Concern

Coatings, Inc. Emergency Plan Summary

Planning Inventory:

Chemicals of Concern	Toluene: 108-88-3	Adhesive Mixtures Containing Toluene, Resins, Rubbers: 108-88-3, 9003-35-4, 69131-77-1, 9006-04-6, 25038-32-8	Batteries, wet, filled with acid: 7664-93-9	Nitrogen (liquefied): 7727-37-9	Phenolic Resin, contains xylene, ethyl benzene, formaldehyde: 1330-20-7, 100-41-4, 50-00-0
Chemical Hazard(s) (e.g. flammable, corrosive)	Flammable	Flammable	Corrosive	Cryogenic, asphyxiant	Toxic
Maximum volume stored on site	25,000-49,999 pounds	100,000-499,999 pounds	2849 pounds	50,000-74,999 pounds	Toxic
How is it stored (e.g. drum, AST)	UST	Drums, ASTs	Batteries	AST	Bags
Where is it stored (e.g. room number)	Underneath the parking lot southeast of the building. May be located within mixing room ASTs. Contained in piping between the USTs and the Mixing Room.	Drum Storage Room, Bulk (AST) Storage Room. Contained in piping from the mixing room ASTs to the Bulk Storage ASTs, as well as from the Bulk Storage ASTs to the process lines.	Forklifts and pallet jacks	Outside, south of the building. Contained in piping from the AST to the solvent recovery system, as well as to the process lines.	On racks in the mixing room
Containment/Safety Precautions Provided (e.g. on containment pallet)	Daily monitoring program.	ASTs are located within secondary containment. AST rooms are equipped with Class 1 – Division 1 rated equipment and vapor sensors. Entrances to the Drum Storage Room are bermed.	None. Located on forklifts and pallet jacks.	AST low level alarm.	None (solid)
Is the material found in process tanks or piping?	Yes: mixing tanks, ASTs, coating ovens, piping	Yes: mixing tanks, ASTs, coating ovens, piping	No	Yes: solvent recovery skids, piping	Yes, mixing tanks

Shutdown Procedures

Coatings, Inc. Emergency Plan Summary

Process Shutdown Procedures:

Process Control	Room Number/Location
Circuit Breakers	Located along the western wall of the production floor
Gas Shut Off	Eastern exterior wall, below the EHS Room A/C unit.
Water Shut Off	East Side Riser Room, adjacent to EHS Room
Main Hazardous Waste Storage Area	Northwest corner of the Drum Storage Room
Fire Alarm Control Panel	Adjacent to employee's entrance door on the north side of the building
Solvent Recovery Shut Off	Next to decant tanks on south side of building
Coating Line Shut Off	Interlocked machine guards on each coating line.

Any spilled materials and their associated fumes should be considered highly flammable, and must be approached with caution. Leaks from the locations listed below could result in spills of significant size, and should be treated with extreme caution. All ignition sources near the spill must be controlled, such as pumps, lights, circuit breakers, switches, and other electric equipment. Process equipment, such as the Mixing Vessels and Coating Line ovens, could also act as an ignition source.

Coating Lines

In the event the Process Stop Button is pressed on either of the coating lines, the oven feed drives will shut down. However, neither the oven heaters nor the solvent recovery system will immediately deactivate. The solvent recovery system will continue to run for 18 minutes to allow sufficient time to draw as much of the remaining solvent vapors out of the adhesive which has been applied to the product web as possible. After this 18 minute period, the solvent recovery system will purge the oven by opening a

Insert
photos of
the process
controls and
storage
containers
into the plan
to assist
responders.

Potential Offsite Impacts

Coatings, Inc. Emergency Plan Summary

and valves connecting the mixing tanks to the ASTs should be shut off to prevent additional material from being transferred into a leaking AST.

Contact Information for Sensitive Receptors Located with 1/4-Mile Planning Radius:

Facility Name	Facility Address	24-Hour Emergency Contact Info
Golden Years Homes (Nursing Home)	145 Main St., New Hartford, CT 06057	555-567-3847 (business phone)
Greentree Middle School (School)	4 Education Dr., New Hartford, CT 06057	555-192-8374 (business phone)

See attached site location map, which identifies the locations of the facilities listed above.

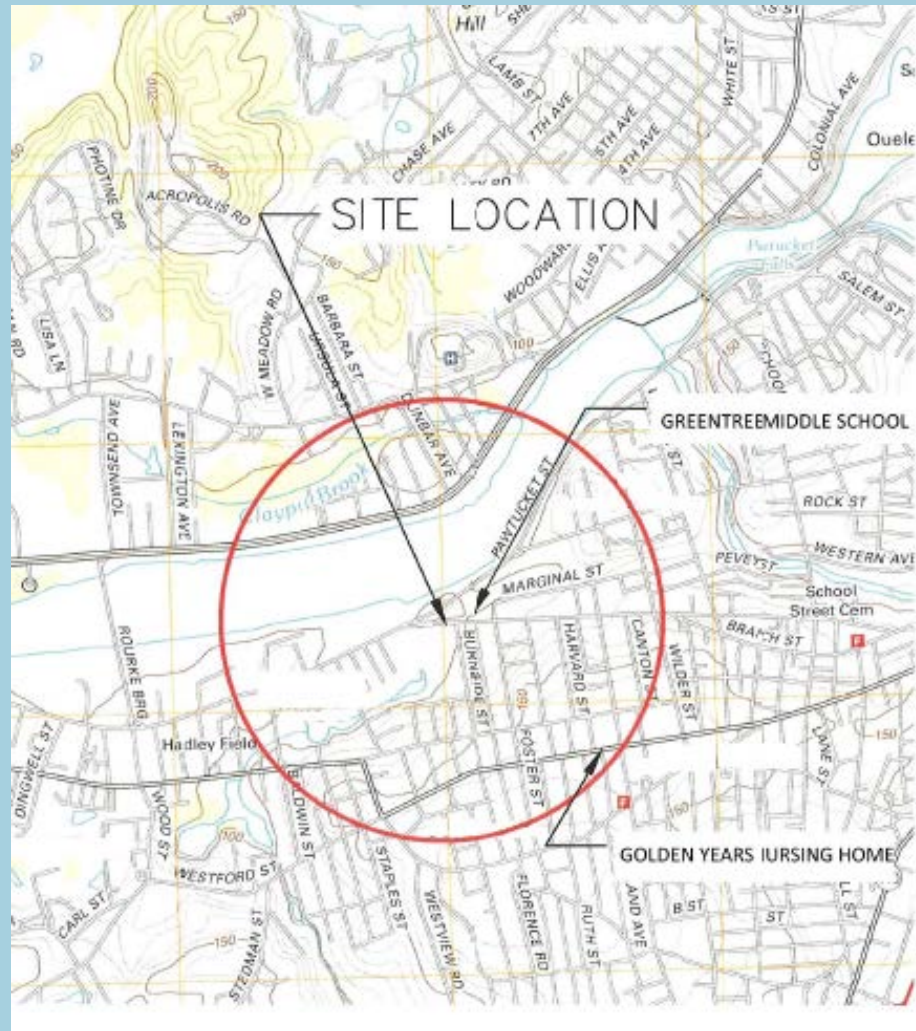
Name & Contact Info for spill response firm contracted to support the facility in the event of a release: The Spill Guys: 800-000-0000

Are spill response supplies maintained on site? Yes ☒ No ☐

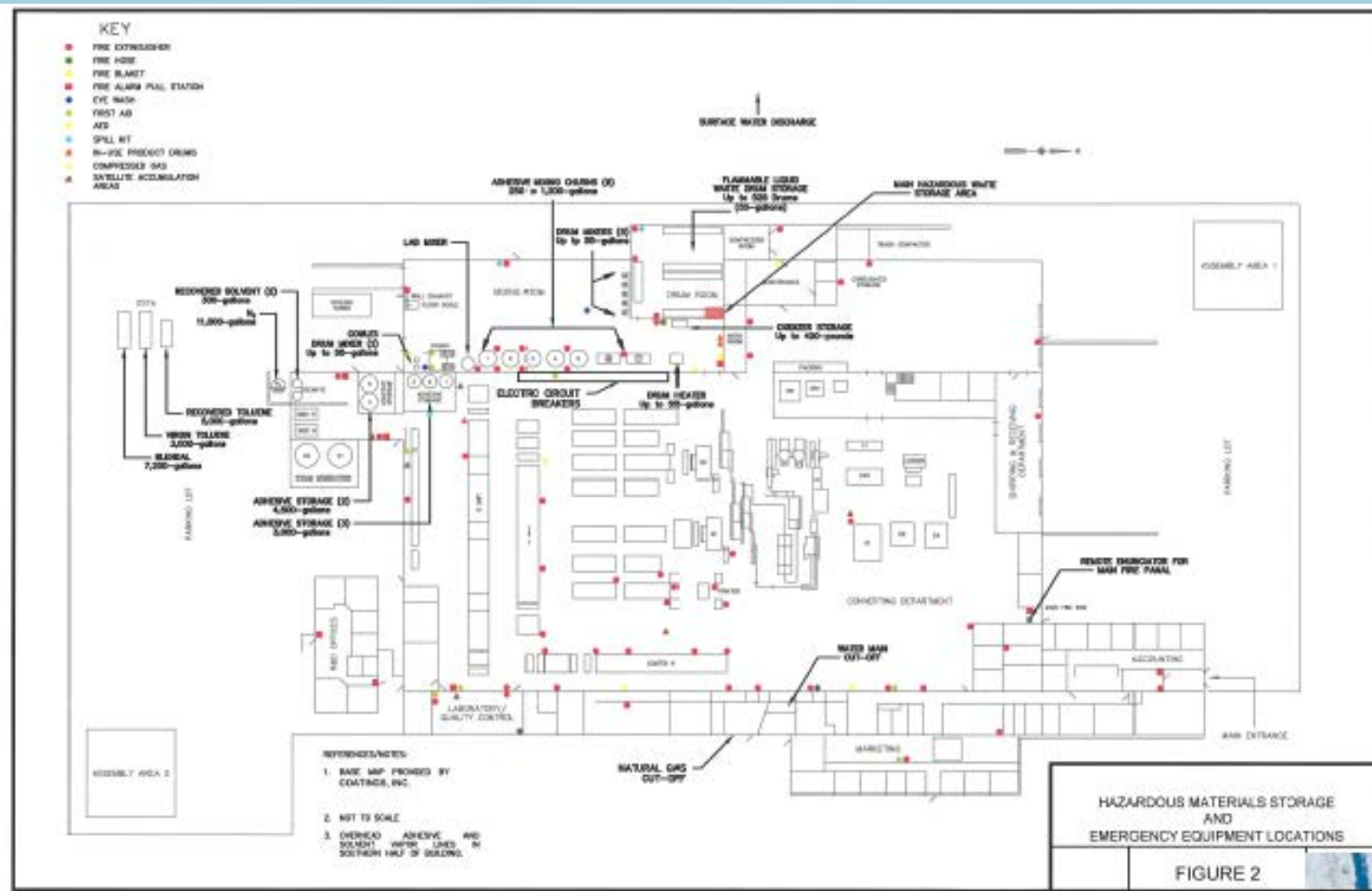
If so, where are these materials stored? In the Drum Storage Room, Mixing Room, and outside of the Bulk Storage Rooms

Describe number and type of materials stored on site: Adsorbants and non-sparking spill response tools are stored in the spill kits, which are located in the Mixing Room, Drum Room, and outside of the Bulk Storage Rooms. PPE, such as chemical protective gloves and safety glasses, are located in dispensers throughout the facility, with respirators located in the Mixing Room office.

Locus Map for Reference



Plant Schematic

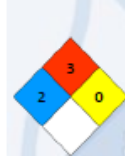


Critical Chemical Info

HAZARDOUS MATERIALS PHYSICAL AND CHEMICAL PROPERTIES WORKSHEET

Key Physical and Chemical Properties

Toluene



Vapor Pressure: 21 mmHg

Vapor Density: No Data Available

LEL: 1.1%

UEL: 7.1%

Flash Point: 40°F

Specific Gravity: 0.87

Solubility: 0.07%

pH: No Data Available

Boiling Point: 232°F

Melting Point: -139°F

Reactivity: Stable

Incompatibles: Strong oxidizers



Shipped As: (Circle)

Typical Container:

UST

Size/Quantity:

3,000 gallon

UST

PAGE:

ERG: 198

NPG: 311

Toxicological Properties

EXPOSURE ROUTES (ER):

Inhalation? Yes

Contact? Yes

Absorption? Yes

Ingestion? Yes

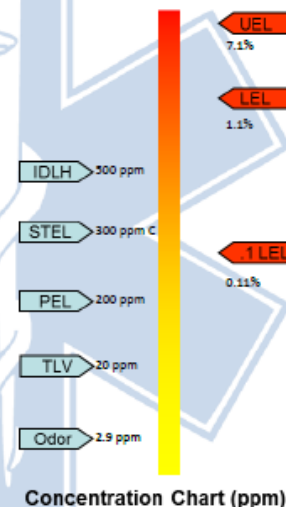
SYMPTOMS:

Irritated eyes, skin, nose, mouth, and throat. Euphoria, dizziness, or lassitude.

Can cause dermatitis, liver damage, or kidney damage.

TARGET ORGANS:

Eyes, Skin, respiratory system, central nervous system, liver, kidneys.



Glove Type: North brand Silver Shield or Viton (or equivalent)

Respiratory Requirements: APR with appropriate cartridge or supplied air

Suit Type: PVA, Teflon, Viton, PE/EVAL, Barricade, CPF3, Responder, Trelchem, Tychem

Storage Location: Two USTs: south of the building

FIRE: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

SPECIAL CONCERNS/HAZARDS:

MEDICAL: Remove contaminated clothing and wash skin with soap and water. If in eyes, rinse thoroughly for at least 15 minutes. Consult a physician.

Insert Your Logo Here????



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Questions??

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