



DAYTON, OHIO REGIONAL HAZ-MAT RESPONSE TEAM NEWSLETTER

August 2004

Denny Bristow, Coordinator
dbristow@daytonhazmat.com

Pager 937-334-3660 Cell phone with voicemail 937-901-5112

Polymerization

We recently had an incident in Montgomery County involving a 5,460 gallon MC-307/312 tanker of *Recovered Styrene*.

The tanker left Pittsburgh in the afternoon with a destination of Northwest Ohio for disposal at an incinerator and arrived here at 8 PM that evening. The next day was warm and sunny, and by mid morning the tanker's safety relief valve activated and released a significant vapor cloud into the atmosphere. This release of vapor continued over the next day.

Let's take a look at this incident so we can understand what occurred and how it was handled.

What is this stuff? Styrene is a clear to dark moderately toxic flammable liquid used to make plastic, paint and synthetic rubber. It is capable of polymerization and has been involved in industrial explosions from violent over pressurization of containers. The polymerization can be initiated by peroxides and other materials.

How is it transported? It is routinely transported in Stainless Steel tankers. An inhibitor may be added to lessen, but will not eliminate the chance of unwanted polymerization.

What happened? When the material was shipped it was already mixed with about 10 percent water. The shipper believes the polymerization was initiated because of an insufficient amount of inhibitor in

the product and/or improper agitation of the mixture following the addition of the inhibitor.

How was it handled? The Fire Department started the ball rolling using the *DOT Guidebook* with the creation of a **Hot Zone** and protecting residents downwind. A call to the Team Coordinator brought the Haz-Mat Team to the scene. This was a multiple agency incident involving Montgomery County EMA, Ohio EPA, and US EPA.

The Tanker was parked in a containment area surrounded by thousands of gallons of flammable liquids. A tanker of flammable liquid was moved from the area which left **only** 40,000 gallons of flammable liquids in the immediate area.

Cooling the tank was explored as a possibility as was moving the tanker to another location away from the flammables. After a conference call with the shipper, meetings with site officials and all involved agencies, the decision was made to allow the reaction to run its course.

Lesson Learned! There are no canned answers at a Haz-Mat Incident; each and every situation will be unique. Use Guidelines and seek input from others who are familiar with the product or products involved.

All problems cannot be placed in an overpack or plugged. A magic potion was not available to stop the polymerization.

August Training

This month's training will be conducted at Dayton FD Training Center on McFadden Avenue off of Springfield Street. We will be working with some of our mitigation equipment.

2004 Training Schedule

August 19, 20, 21

0900-1200 hours

Location: DFD TC

Equipment Training

September 16, 17, 18

0900-1700 hours

Location: DFD TC

Technician Refresher

October 21, 22, 23

0900-1200 hours

Location: TBA

Scenarios

November 18, 19, 20

0900-1200 hours

Location: TBA

CAMEO & Technician Refresher