

Deadly Chemical Explosion at BASF

By: Christina Meyer

<https://cen.acs.org/articles/94/i42/Fatal-explosion-hits-BASFs-Ludwigshafen.html>

Activity

BASF's site in Ludwigshafen, Germany uses pipelines to connect the plant to the harbor at the Rhine River. At the harbor, the site's flammable liquids and liquid gas is shipped in and unloaded here. On October 17, 2016, maintenance work was being carried out on the pipelines. Some of the pipelines contained ethylene and propylene at this time.

Hazards

The Safety Data Sheet for ethylene and propylene states:

- Extremely flammable gas

- May form explosive mixtures with air

- Contains gas under pressure; may explode if heated

Preventative Actions and Safeguards

Clearly determine what work needs to be done and how to safely accomplish it.

Contingency Plan/ Mitigating Actions

Label lines to make sure it is clear what is in the pipelines.

Initiating Event

While performing maintenance work, the contractor cut the wrong pipeline containing flammable gases.

Incident

The flammable gas leaked from the pipelines and ignited due to the sparks created from the grinding of the pipelines going on around it. The emergency response team immediately responded and began to perform emergency operations. While the beginning of the safety measures, the explosion occurred. The fire took 10 hours to extinguish due to the severity and the multiple fires down the pipeline, which damaged further product and supply lines. Four people died and twenty people were injured due to this incident.

Lessons Learned

This accident could have easily been prevented from the beginning. Maintenance work was no planner properly. The contractor should have consulted with BASF employees before starting their work, ensuring a clear plan is in place for the work that needs to be done. Also this incident stresses the importance of line labeling especially with multiple pipelines together. Many pipelines that are unlabeled increase the possibility of a wrong move and cutting the incorrect line.

