

HAZARD ALERT!

Dangers of PVC primer and cement



ACCIDENT REPORT:

Three pipefitters were injured when a PVC pipeline exploded at a coal prep plant. A stray spark from an electric arc welder fell into the open end of a pipe assembly igniting highly flammable PVC pipe-joint cement vapor that was trapped inside the newly installed pipe. One pipefitter received a head injury when a PVC pipe fragment penetrated his hard hat. Two other workers were thrown as a result of the blast; one landing nearly 20 feet away.

FALLACIES REVEALED!!

1: The glue vapors will dissipate soon after the pipe is glued.

In this case, the pipe was glued five weeks prior to the accident.

2: A system must be enclosed for an explosion to occur.

In this case, two ends of the pipe assembly were open. As long as heat and PVC vapors are present, the potential for fire and explosion is present.

3: The vapor will evaporate if the ends of the pipe assembly are opened.

In this case, two ends of the pipe assembly were cut and left open overnight; however, both open ends were turned upward creating a trapped pipe section. The PVC glue vapors, being heavier than air, settled in the low lying pipe section and could not escape.

LESSON LEARNED!!

Given the fragile characteristics of PVC pipe and the high flammability of PVC joint primer and cement, the potential for a pipe explosion in a newly assembled PVC pipe is always present.

BEST PRACTICES:

- **Installers should be trained on the manufacturer's procedures for installation and use of the PVC pipe cement, and must thoroughly understand the fire and explosion hazards associated with the vapors produced by this cement.**
- **Cutting and welding activities should not be conducted in the vicinity of open pipes unless contents of pipe have been ventilated, made inert or the pipe ends capped to prevent hot sparks from entering the pipe.**