

Safetygram #44

Spill Cleanup Procedure for Product Residue That Exhibits an Autoignition Hazard

This procedure is applicable to all products having the following warning phrase in Section 6 of the Material Safety Data Sheet:

“Possible smoldering/autoignition hazard exists if product residue contacts combustible material for extended period of time. Contain and collect spillage with noncombustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations. Place in appropriate chemical waste container. Residual material should not be left to dry or evaporate. Spill cleanup materials and contaminated debris should be thoroughly soaked with water before discarding to avoid autoignition hazard.”

General

The products requiring these special procedures are certain amine-based developers used in the manufacture of semiconductors. All personnel must know and understand the properties, proper use and safety precautions for the specific product they are using. The Material Safety Data Sheet (MSDS) is the primary source of this information. Since these products can be toxic, flammable and corrosive to human tissue, the MSDS for the specific product being handled must be consulted for hazard clarification and required personal protective equipment.

The Problem

There have been several incidents reported where the materials used in the cleanup of a spill have started to smolder. The smoldering may lead to a fire situation. This procedure will discuss the proper handling of spills and how to prevent the used cleanup materials from smoldering. Smoldering can occur when a product spill is wiped up or absorbed using absorbent towels or other absorbent materials that are set aside for a period of time. The soaked absorbents may slowly begin to heat up and can reach temperatures in excess of 100°C, causing smoke fumes and vapors to be emitted. If the temperature continues to climb, the absorbent or any adjacent combustible material may ignite. In order to prevent autoignition, the following spill cleanup procedures are recommended.

Small Spills

- Small spills can be wiped up with paper towels or cloths, absorbed on vermiculite, floor absorbent or other absorbent material.
- Surfaces must be wiped clean and washed down with water.
- Residual should not be left to evaporate and dry.
- The cleanup materials should then be transferred to a fume hood or other ventilated area that will safely exhaust any fumes.
- All absorbents must be thoroughly soaked with water before proper disposal. If absorbents are allowed to dry, smoldering or fire may result.
- Paper towels or cloths used to absorb spilled material must be thoroughly soaked with water to rinse absorbed product. See “Water Rinse Procedure” on next page.
- Rinse-water, towels, cloths and absorbents must be disposed of as hazardous waste in accordance with regulatory requirements.
- Any other contaminated combustibles, such as cardboard boxes, should be disposed of in the same manner.



Large Spills

- Evacuate and secure area.
- Activate emergency system.
- Eliminate all ignition sources (flames, sparks, electrical).
- Don proper personal protective equipment.
- Stop spill by orienting container so leak site is not in the liquid.
- Divert and dike spill to prevent product from spreading and entering drains, sewers or groundwater.
- Pick up spilled product with a pump or vacuum transfer into clean recovery vessel.
- Absorb residual product and wipe area clean.
- Wash down area with water.
- Do not allow product to evaporate and dry.
- All absorbents must be thoroughly soaked with water before proper disposal. If absorbents are allowed to dry, smoldering or fire may result.
- All towels and wipes must be thoroughly rinsed before disposal.
- Rinse-water and absorbents must be disposed of as hazardous waste in accordance with regulatory requirements. See "Water Rinse Procedure."
- Notify appropriate authorities if product runoff occurs.

Water Rinse Procedure for Towels and Cloths Used in Cleanup

- Rinse contaminated towels and cloths with water. Rinse-water must be disposed of as hazardous waste.
- Wring towels and cloths to damp. Rinse-water must be disposed of as hazardous waste.
- Repeat the rinse and wring-out procedure again.
- Wet the materials a final time and place in appropriate closed disposal container.
- Dispose of in accordance with applicable regulatory requirements.

Emergency Response System

- Call: +1-800-523-9374 (Continental U.S. and Puerto Rico)
- Call: +1-610-481-7711 (other locations)
- 24 hours a day, 7 days a week
- For assistance involving Air Products and Chemicals, Inc. products

Product Safety Information

- For MSDS, Safetygrams, and Product Safety Information www.airproducts.com/productsafety

Technical Information Center

- Call: +1-800-752-1597 (U.S.)
- Call: +1-610-481-8565 (other locations)
- Fax: +1-610-481-8690
- E-mail: gasinfo@airproducts.com
- Monday–Friday, 8:00 a.m.–5:00 p.m. EST

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