Title: Emergencies Involving Corrosives

Purpose:

To establish procedures and provide guidance to the Hazardous Materials Response Team when they respond to an incident involving corrosive materials that may or may not be leaking or spilled.

Policy:

This procedure will apply to all incidents where the Hazardous Materials Response Team responds to and determines or suspects that corrosive materials are involved. Used to achieve the following basic objectives:

1. Prevent corrosive materials from reacting with other materials.
2. Contain corrosive material spill to the smallest area possible.
3. Stop or control the discharge of corrosive materials from its container.
4. Assist in the neutralization and or cleanup of any product discharged.
5. Control or reduce vapor clouds from corrosive discharges.

It is the intent of this policy to comply with the requirements of OSHA 29 CFR 1910. 120 and EPA 40 CFR Part 311 for emergency response to actual or suspected discharges of hazardous materials.

Applicability:

This policy shall be utilized to guide selection, use of appropriate equipment, and procedures in performing hazardous materials identification and control measures at a leak or spill involving corrosive materials. The Hazardous Materials Group Supervisor is responsible for making sure the Incident Commander (IC) is aware of the hazards involved. The Hazardous Materials Response Team shall follow these guidelines in assuring the safety of the Hazardous Materials Response Team members, operations personnel, and the general public.

General Procedures:

1. Identify the material(s) involved and determine if the product would be reactive with other products. (Refer to Field Analysis of Unidentified Potentially Hazardous Materials Procedure)
2. Keep non-essential personnel away. (This includes non-essential emergency service personnel.)
3. Establish control zones including decontamination reduction zone (Isolate area and deny entry.).
4. Select and wear the proper respiratory protection and chemical protective clothing. Corrosive atmospheres may require Level A encapsulated body and skin protection.
5. Stay uphill/upwind and keep out of low areas.
6. Avoid exposure to smoke, fumes, vapors, dusts, or direct contact. Highly toxic fumes are often present. Corrosive vapors can react with moisture in eyes, on the skin, on mucous membranes, in the respiratory system and lungs causing severe and irreversible tissue damage and death.
7. Ventilate confined areas before entering. Consider the use of foam to suppress corrosive vapors. (The EPA has sponsored several research projects into the use of foams on chemical spills and various foams have been successfully used on chemical spills. Research specific foam prior to using on a chemical spill.)
8. Consider the need for additional resources and equipment. (Use chemical compatible diking material, absorbents, over-pack containers, and liquid transfer equipment. Also consider using private clean-up contractors, etc.)
9. If spilled material has entered storm drain or sewer system, notify appropriate authority. Consider downstream impact of contaminant. (Use of neutralizing agents such as soda ash and citric acid can be introduced into the sewer system with approval of utility.)
10. Determine and implement appropriate decontamination procedures for personnel and equipment. Make sure decontamination procedures are set up and ready prior to beginning any control operations.
11. Consult information resources like Cameo Chemicals, WISER, and CHEMTREC for product information and assistance.

Spill or Leak:

1. Avoid contact with the spilled material. Make sure the proper Personal Protection Equipment (PPE) is used for the hazards involved. Respiratory protective equipment should be protected against the possibility of exposure to corrosive vapors.
2. Extinguish all sources of ignition in the vicinity. Do not allow vehicles or other sources of ignition in the area. Corrosive can react with metals to generate highly flammable hydrogen gas.
3. Contact with water may cause the generation of large quantities of vapors and heat. Dilution of the material with water should only be considered after determining the ratio required in achieving a safe pH range, but it still may have other hazardous properties such as being toxic.
4. Do not get water inside container(s). Explosive reactions can take place.
5. Water spray can be used to absorb water miscible vapors, and water spray or explosion proof fans can be used to disperse vapors. Run-off must be contained for later analysis and possible disposal. Do not permit the run-off to enter storm, sewer, or water systems. Check compatibility of absorbent materials and spill control materials prior to using.
6. Keep combustibles (wood, paper, oil, etc.) away from spilled material.
7. If it can be done safely, attempt to close valves, plug, or otherwise reduce or stop the amount of leakage. Check compatibility of plugging materials prior to using them.
8. Dig trenches or build dikes ahead of the flow to contain the spill for later disposal or recovery.
9. Powder spills can be covered with a plastic sheet or tarp to minimize spreading.
10. Keep material out of storm, sewer, and water systems.
11. Do not attempt neutralization without consulting with the manufacturer, distributor, or other reliable source. Neutralization will more than likely cause the production of vapors and heat that can create additional problems. (Refer to neutralization protocol)
12. Consider use of foam eductor equipment to spread vapor suppression material and neutralization agents on to spills.

Fire Conditions:

1. Many corrosive chemicals react violently with water, liberating heat and toxic gases.
2. If it can be done safely, move undamaged containers away from the fire area.
3. Do not get water inside containers.
4. Use water to cool containers that are exposed to flames until well after the fire is out.