

# GUIDE 139 SUBSTANCES - WATER-REACTIVE (EMITTING FLAMMABLE AND TOXIC GASES)

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Produce flammable and toxic gases on contact with water.
- May ignite on contact with water or moist air.
- Some react vigorously or explosively on contact with water.
- May be ignited by heat, sparks or flames.
- May re-ignite after fire is extinguished.
- Some are transported in highly flammable liquids.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Highly toxic: contact with water produces toxic gas, may be fatal if inhaled.
- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce corrosive solutions on contact with water.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause environmental contamination.

## PUBLIC SAFETY

- **CALL 911. Then call emergency response telephone number on shipping paper.** If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Ventilate closed spaces before entering, but only if properly trained and equipped.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer **when there is NO RISK OF FIRE.**
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection.**

### EVACUATION

#### Immediate precautionary measure

- Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

#### Spill

- For **highlighted materials**: see Table 1 - Initial Isolation and Protective Action Distances.
- For non-highlighted materials: increase the immediate precautionary measure distance, in the downwind direction, as necessary.

#### Fire

- If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

## FIRE

- **DO NOT USE WATER OR FOAM. (FOAM MAY BE USED FOR CHLOROSILANES, SEE BELOW)**

**Small Fire**

- Dry chemical, soda ash, lime or sand.

**Large Fire**

- DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
- **FOR CHLOROSILANES, DO NOT USE WATER;** use alcohol-resistant foam; **DO NOT USE** dry chemicals, soda ash or lime on chlorosilane fires (large or small) as they may release large quantities of hydrogen gas that may explode.
- If it can be done safely, move undamaged containers away from the area around the fire.

**Fire Involving Tanks, Rail Tank Cars or Highway Tanks**

- Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- **ALWAYS** stay away from tanks in direct contact with flames.

## SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- **DO NOT GET WATER on spilled substance or inside containers.**
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- **FOR CHLOROSILANES,** use alcohol-resistant foam to reduce vapors.

**Small Spill**

- Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
- Dike for later disposal; do not apply water unless directed to do so.

**Powder Spill**

- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

## FIRST AID

Refer to the "General First Aid" section.

**Specific First Aid:**

- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.



In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the "ERAP" section.