

# GUIDE 166 RADIOACTIVE MATERIALS - CORROSIVE (URANIUM HEXAFLUORIDE/WATER-REACTIVE)

## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Low radiation hazard to people. **Chemical hazard greatly exceeds radiation hazard.**
- Substance reacts with water and water vapor in air to form **toxic and corrosive hydrogen fluoride gas, hydrofluoric acid**, and an extremely irritating and corrosive, white-colored, water-soluble residue.
- **Toxic; may be fatal if inhaled, ingested, or absorbed through skin.**
- Direct contact with substance and gas may cause burns to skin, eyes, or respiratory tract.
- Runoff from control of cargo fire may cause low-level pollution.

### FIRE OR EXPLOSION

- Substance does not burn.
- The material may react violently with fuels.
- Product will decompose to produce toxic and/or corrosive fumes.
- Containers in protective overpacks (horizontal cylindrical shape with short legs for tie-downs), are identified with AF, B(U)F or H(U) on shipping papers or by markings on the overpacks. They are designed and evaluated to withstand severe conditions including total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes.
- Bare filled cylinders, identified with UN2978 as part of the marking (may also be marked H(U) or H(M)), may rupture in heat of engulfing fire; bare empty (except for residue) cylinders will not rupture in fires.
- Radioactivity does not change flammability or other properties of materials.

## 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.
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- Stay upwind, uphill and/or upstream.
- Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

### 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 for at least 25 meters (75 feet) in all directions.

#### Spill

- See [Table 1 - Initial Isolation and Protective Action Distances](#).

#### Fire

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

**EMERGENCY RESPONSE**

**FIRE**

- DO NOT USE WATER OR FOAM ON MATERIAL ITSELF.
- If it can be done safely, move undamaged containers away from the area around the fire.

**Small Fire**

- Dry chemical or CO<sub>2</sub>.

**Large Fire**

- Dry chemical, CO<sub>2</sub>, or withdraw from area and let fire burn.
- Only use water if the package is intact.
- DO NOT GET WATER on spilled substance or inside containers.
- ALWAYS stay away from tanks in direct contact with flames.
- Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.

**SPILL OR LEAK**

- Do not touch damaged packages or spilled material.
- **DO NOT GET WATER** on spilled substance or inside containers.
- Without fire or smoke, leak will be evident by visible and irritating vapors and residue forming at the point of release.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Residue buildup may self-seal small leaks.
- Dike far ahead of spill to collect runoff water.

**FIRST AID**

Refer to the "General First Aid" section.

**Specific First Aid:**

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- **In case of skin contact with hydrogen fluoride gas and/or Hydrofluoric acid**, if calcium gluconate gel is available, rinse 5 minutes, then apply gel. Otherwise, continue rinsing until medical treatment is available.
- Do not delay care and transport of a seriously injured person.



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