Right to Know Hazardous Substance Fact Sheet

Emergency Responders Quick Reference

Common Name: **ZIRCONIUM**

Synonyms: None
CAS No: 7440-67-7
Molecular Formula: Zr
RTK Substance No: 2047
Description: Soft, gray to gold solid, bluish-black powder, or grayish-white platelet or flake

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
2 - Health **4 - Fire** **1 - Reactivity** **DOT#:** UN 1358 UN 2008 **ERG Guide #:** 170/135 **Hazard Class:** 4.1/4.2 (Flammable solid/ spontaneously combustible)	**Zirconium** powder, dust or granule is HIGHLY FLAMMABLE and can EXPLODE SPONTANEOUSLY IN AIR. Use dry chemicals appropriate for extinguishing metal fires (such as dry lime, soda ash and graphite). USE WATER with care as **Zirconium** re-ignites in the presence of WATER and burns more violently. DO NOT USE CO_2 or HALOGEN extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE. CONTAINERS MAY EXPLODE IN FIRE. Use water spray to keep fire-exposed containers cool. DO NOT get water inside containers.	**Zirconium** reacts violently or explosively with BORAX; CARBON TETRACHLORIDE and ALKALI METAL HYDROXIDES (such as POTASSIUM HYDROXIDE and SODIUM HYDROXIDE) when heated, and also reacts violently with COPPER OXIDE and LEAD OXIDE. Dusts of pure **Zirconium** will ignite or explode when in contact with WATER. Forms explosive mixtures with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); PHOSPHORUS; OXYGEN; LEAD; POTASSIUM NITRATE; POTASSIUM CHLORATE; SODIUM BORATE; SULFATES; MOLYBDATES; CHROMATES; and DICHROMATES. **Zirconium** is incompatible with BORON; CARBON; NITROGEN; and PLATINUM.

SPILL/LEAKS

Isolation Distance:
Solids: 25 meters (75 feet)
Large Spill: 50 meters (160 feet)
Fire: 800 meters (1/2 mile)

Collect powdered material in the most convenient and safe manner and deposit in sealed containers.

Use only non-sparking tools and equipment, especially when opening and closing containers of **Zirconium**.

PHYSICAL PROPERTIES

Odor Threshold:	Odorless
Flash Point:	Spontaneously combustible powder, dust or granule
Auto Ignition Temp:	392°F (200°C)
Vapor Pressure:	0 mm Hg at 68°F (20°C)
Specific Gravity:	6.5 (water = 1)
Water Solubility:	Insoluble
Boiling Point:	6,471°F (3,577°C)
Melting Point:	3,375°F (1,857°C)
Ionization Potential:	6.6 eV
Molecular Weight:	91.2

EXPOSURE LIMITS

OSHA:	5 mg/m^3, 8-hr TWA
NIOSH:	5 mg/m^3, 10-hr TWA; 10 mg/m^3, STEL
ACGIH:	5 mg/ m^3, 8-hr TWA; 10 mg/m^3, STEL
IDLH LEVEL:	25 mg/m^3

PROTECTIVE EQUIPMENT

Gloves:	No information
Coveralls:	DuPont Tyvek® or equivalent
Boots:	No information
Respirator:	>5 mg/m^3 - full facepiece APR with High efficiency filter <25 mg/m^3 - Supplied air

HEALTH EFFECTS

Eyes:	Irritation
Skin:	Skin allergy with small nodules with repeated contact
Inhalation:	Lung irritation with coughing and/or shortness of breath

FIRST AID AND DECONTAMINATION

Remove the person from exposure.
Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.
Remove contaminated clothing and wash contaminated skin with soap and water.
Begin artificial respiration if breathing has stopped and CPR if necessary.
Transfer to a medical facility.