

**WAC 296-62-07443 Appendix B—Substance technical guidelines for cadmium.** (1) Cadmium metal.

(a) Physical and chemical data.

(i) Substance identification.

Chemical name: Cadmium.

Formula: Cd.

Molecular Weight: 112.4.

Chemical Abstracts Service (CAS) Registry No.: 7740-43-9.

Other identifiers: RETCS EU9800000; EPA D006; DOT 2570 53.

Synonyms: Colloidal Cadmium: Kadmium (German): CI 77180.

(ii) Physical data.

Boiling point: (760 mm Hg): 765 degrees C.

Melting point: 321 degrees C.

Specific gravity: (H<sub>2</sub>O=@ 20°C): 8.64.

Solubility: Insoluble in water; soluble in dilute nitric acid and in sulfuric acid.

Appearance: Soft, blue-white, malleable, lustrous metal or grayish-white powder.

(b) Fire, explosion, and reactivity data.

(i) Fire.

Fire and explosion hazards: The finely divided metal is pyrophoric, that is the dust is a severe fire hazard and moderate explosion hazard when exposed to heat or flame. Burning material reacts violently with extinguishing agents such as water, foam, carbon dioxide, and halons.

Flash point: Flammable (dust).

Extinguishing media: Dry sand, dry dolomite, dry graphite, or sodium chloride.

(ii) Reactivity.

Conditions contributing to instability: Stable when kept in sealed containers under normal temperatures and pressure, but dust may ignite upon contact with air. Metal tarnishes in moist air.

(iii) Incompatibilities: Ammonium nitrate, fused: Reacts violently or explosively with cadmium dust below 20°C. Hydrozoic acid: Violent explosion occurs after thirty minutes. Acids: Reacts violently, forms hydrogen gas. Oxidizing agents or metals: Strong reaction with cadmium dust. Nitryl fluoride at slightly elevated temperature: Glowing or white incandescence occurs. Selenium: Reacts exothermically. Ammonia: Corrosive reaction. Sulfur dioxide: Corrosive reaction. Fire extinguishing agents (water, foam, carbon dioxide, and halons): Reacts violently. Tellurium: Incandescent reaction in hydrogen atmosphere.

(iv) Hazardous decomposition products: The heated metal rapidly forms highly toxic, brownish fumes of oxides of cadmium.

(c) Spill, leak, and disposal procedures.

(i) Steps to be taken if the materials is released or spilled. Do not touch spilled material. Stop leak if you can do it without risk. Do not get water inside container. For large spills, dike spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

(ii) The Superfund Amendments and Reauthorization Act of 1986 Section 304 requires that a release equal to or greater than the reportable quantity for this substance (one pound) must be immediately reported to the local emergency planning committee, the state emergency response commission, and the National Response Center (800) 424-8802; in Washington, DC metropolitan area (202) 426-2675.

(2) Cadmium oxide.

(a) Physical and chemical data.

(i) Substance identification.

Chemical name: Cadmium oxide.

Formula: CdO.

Molecular Weight: 128.4.

CAS No.: 1306-19-0.

Other identifiers: RTECS EV1929500.

Synonyms: Kadmu tlenek (Polish).

(ii) Physical data.

Boiling point (760 mm Hg): 950 degrees C decomposes.

Melting point: 1500°C.

Specific gravity: (H<sub>2</sub>O=1@20°C): 7.0.

Solubility: Insoluble in water; soluble in acids and alkalines.

Appearance: Red or brown crystals.

(b) Fire, explosion, and reactivity data.

(i) Fire.

Fire and explosion hazards: Negligible fire hazard when exposed to heat or flame.

Flash point: Nonflammable.

Extinguishing media: Dry chemical, carbon dioxide, water spray or foam.

(ii) Reactivity.

Conditions contributing to instability: Stable under normal temperatures and pressures.

(iii) Incompatibilities: Magnesium may reduce CdO<sub>2</sub> explosively on heating.

(iv) Hazardous decomposition products: Toxic fumes of cadmium.

(c) Spill, leak, and disposal procedures.

(i) Steps to be taken if the material is released or spilled. Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For small dry spills, use a clean shovel to place material into clean, dry container and then cover. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

(ii) The Superfund Amendments and Reauthorization Act of 1986 Section 304 requires that a release equal to or greater than the reportable quantity for this substance (one pound) must be immediately reported to the local emergency planning committee, the state emergency response commission, and the National Response Center (800) 424-8802; in Washington, DC metropolitan area (202) 426-2675.

(3) Cadmium sulfide.

(a) Physical and chemical data.

(i) Substance identification.

Chemical name: Cadmium sulfide.

Formula: CdS.

Molecular weight: 144.5.

CAS No. 1306-23-6.

Other identifiers: RTECS EV3150000.

Synonyms: Aurora yellow; Cadmium Golden 366; Cadmium Lemon Yellow 527; Cadmium Orange; Cadmium Primrose 819; Cadmium Sulphide; Cadmium Yellow; Cadmium Yellow 000; Cadmium Yellow Conc. Deep; Cadmium Yellow Conc. Golden; Cadmium Yellow Conc. Lemon; Cadmium Yellow Conc. Primrose; Cadmium Yellow Oz. Dark; Cadmium Yellow Primrose 47-1400; Cadmium Yellow 10G Conc.; Cadmium Yellow 892; Cadmopur Golden Yellow N;

Cadmopur Yellow; Capsebon; C.I. 77199; C.I. Pigment Orange 20; CI Pigment Yellow 37; Ferro Lemon Yellow; Ferro Orange Yellow; Ferro Yellow; Greenockite; NCI-C02711.

(ii) Physical data.

Boiling point (760 mm. Hg): sublimes in N<sub>2</sub> at 980°C.

Melting point: 1750 degrees C (100 atm).

Specific gravity: (H<sub>2</sub>O=1@ 20°C): 4.82.

Solubility: Slightly soluble in water; soluble in acid.

Appearance: Light yellow or yellow-orange crystals.

(b) Fire, explosion, and reactivity data.

(i) Fire.

Fire and explosion hazards: Negligible fire hazard when exposed to heat or flame.

Flash point: Nonflammable.

Extinguishing media: Dry chemical, carbon dioxide, water spray or foam.

(ii) Reactivity. Conditions contributing to instability: Generally nonreactive under normal conditions. Reacts with acids to form toxic hydrogen sulfide gas.

(iii) Incompatibilities: Reacts vigorously with iodine monochloride.

(iv) Hazardous decomposition products: Toxic fumes of cadmium and sulfur oxides.

(c) Spill, leak, and disposal procedures.

(i) Steps to be taken if the material is released or spilled. Do not touch spilled material. Stop leak if you can do it without risk. For small, dry spills, with a clean shovel place material into clean, dry container and cover. Move containers from spill area.

(ii) For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard and deny entry.

(4) Cadmium chloride.

(a) Physical and chemical data.

(i) Substance identification.

Chemical name: Cadmium chloride.

Formula: CdCl<sub>2</sub>.

Molecular weight: 183.3.

CAS No. 10108-64-2.

Other identifiers: RTECS EY0175000.

Synonyms: Caddy; Cadmium dichloride; NA 2570 (DOT); UI-CAD; dichlorocadmium.

(ii) Physical data.

Boiling point (760 mm Hg): 960 degrees C.

Melting point: 568 degrees C.

Specific gravity: (H<sub>2</sub>O=1 @ 20°C): 4.05.

Solubility: Soluble in water (140 g/100 cc); soluble in acetone.

Appearance: Small, white crystals.

(b) Fire, explosion, and reactivity data.

(i) Fire.

Fire and explosion hazards: Negligible fire and negligible explosion hazard in dust form when exposed to heat or flame.

Flash point: Nonflammable.

Extinguishing media: Dry chemical, carbon dioxide, water spray, or foam.

(ii) Reactivity. Conditions contributing to instability: Generally stable under normal temperatures and pressures.

(iii) Incompatibilities: Bromine trifluoride [trifluoride] rapidly attacks cadmium chloride. A mixture of potassium and cadmium chloride may produce a strong explosion on impact.

(iv) Hazardous decomposition products: Thermal decomposition may release toxic fumes of hydrogen chloride, chloride, chlorine or oxides of cadmium.

(c) Spill, leak, and disposal procedures.

(i) Steps to be taken if the material is released or spilled. Do not touch spilled material. Stop leak if you can do it without risk. For small, dry spills, with a clean shovel place material into clean, dry container and cover. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard and deny entry.

(ii) The Superfund Amendments and Reauthorization Act of 1986 Section 304 requires that a release equal to or greater than the reportable quantity for this substance (one hundred pounds) must be immediately reported to the local emergency planning committee, the state emergency response commission, and the National Response Center (800) 424-8802; in Washington, DC Metropolitan area (202) 426-2675.

[Statutory Authority: Chapter 49.17 RCW. WSR 93-07-044 (Order 93-01), § 296-62-07443, filed 3/13/93, effective 4/27/93.]