

CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

Potassium Dichromate

Synonym: Potassium bichromate

**CAS No.: 7778-50-9****Physical Properties**

Red-orange hygroscopic crystals
 Vapor pressure at 20 °C: negligible
 Melting point: 398 °C
 Boiling point: (decomposes) 500 °C

Exposure Limits

OSHA PEL: NE
 ACGIH TLV: NE

Hazardous Characteristics

| Overall toxicity | Flammability | Destructive to skin/eye | Absorbed through skin? | Sensitizer? | Self-reactive? | Incompatible with: |
|------------------|--------------|-------------------------|------------------------|-------------|----------------|---|
| 4 | 0 | 3 | No | Yes | No | Combustible materials and other reducing agents.* |

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe.

***Reactivity Hazards**

Potassium dichromate is a very strong oxidizing agent; it attacks almost all oxidizable materials including finely divided metals, often violently and with fire and/or explosive results. In the presence of acetic acid, the reaction is sometimes delayed for a time, and when it does take place, the reaction can be uncontrollable. See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9? Yes

Identified as a reproductive toxin in Frazier and Hage, *Reproductive Hazards of the Workplace*. Insufficient information

Typical symptoms of acute exposures:

Potassium dichromate is corrosive to the eyes, skin, and respiratory and gastro-intestinal tracts. In the eyes, pain, severe burns, conjunctivitis. On the skin, dermatitis, ulcerated sores, including perforation of the nasal septum. If inhaled, sore throat, labored breathing, shortness of breath.

Principal target organ(s) or system(s):

Eyes, skin, respiratory system, gastro-intestinal tract, kidneys.

Storage Requirements

Store separately, away from reducing agents in a cool, dry, well-ventilated and locked location.

Additional Remarks

The cleaning solution known as "chromic acid", a mixture of concentrated sulfuric acid and potassium dichromate, has been a causative factor in many laboratory accidents. Except in unusual circumstances where adequate precautions can be maintained, its use should be discontinued. Symptoms of lung edema are not manifest immediately in victims who have inhaled potassium dichromate dust or solution mist; some hours may elapse first; physical effort can exaggerate these symptoms. Rest is essential for persons exposed to excess dust or mist.

Notes**ReadMe**

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed*. For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

Reproductive Toxins

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at <http://www.sis.nlm.nih.gov> and click on "Toxicology search".

Note that some of the data in DART/ETIC have not been peer-reviewed. See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*; Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

Abbreviations

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m³—milligrams per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

Prepared by: Jay A. Young

Date of preparation: April 17, 2003