CLIP, Chemical Laboratory Information Profile

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

Iron(III) Oxide Fe_2O_3 CAS No.: 1309-37-1

Synonyms: Iron oxide, Ferric oxide, Rouge, Hematite, Iron ore

Physical Properties

Red-colored solid
Vapor pressure at 20 °C: negligible
Melting point: 1565 °C

Exposure Limits

OSHA PEL: 10 mg/m^3, as Fe
ACGIH TLV: 5 mg/m^3, as Fe

Hazardous Characteristics

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin	Sensitizer?	Self-reactive?	Incompatible with:
1	0	0	0	No	No	Aluminum, magnesium, hydrogen peroxide, carbon monoxide*

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

***Reactivity Hazards**

Reaction with aluminum, magnesium, and other group II and III metals can be vigorously exothermic (thermite reaction). Iron(III) oxide catalyzes the decomposition of hydrogen peroxide; the reaction can be explosive if the concentration of hydrogen peroxide is greater than 3%.

Reaction with carbon monoxide, when heated, has produced iron pentacarbonyl, a toxic, flammable, explosive gas.

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?	No	Identified as a reproductive toxin in Frazier and Hage, *Reproductive Hazards of the Workplace*?	Declines in semen parameters among welders

Typical symptoms of acute exposures:

Under typical conditions of use in the lab, overexposure to iron(III) oxide is not foreseeable.

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

Respiratory system.

Storage Requirements

With other chemicals in a cool, dry, well-ventilated general storage location.

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 *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/m^3—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

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