

Iron oxide [Fe₂O₃]

This document provides a brief description of iron oxide [Fe₂O₃], its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS safety data sheet.

Identification

Product Name:	Iron oxide [Fe ₂ O ₃]
Chemical Name:	Iron (III) oxide
Synonym(s):	Anhydrous iron oxide C.I. Pigment Red 101 and 102 Diiron trioxide Ferric oxide Iron trioxide
CAS Number:	1309-37-1

Description

Overview:	Iron oxide [Fe ₂ O ₃] is an odorless red powder at ambient temperatures.
Uses:	Iron oxide [Fe ₂ O ₃] is sold by LANXESS primarily for use as a pigment in the manufacture of concrete roof tiles, flooring products, pavers and wall blocks, grouts, plaster and other construction products. Iron oxide [Fe ₂ O ₃] is also used as a pigment and/or UV blocking agent in paints and coatings, inks, plastics, rubber products and glass; as a polishing agent for glass, diamonds and precious metals; as a component in magnets; as a dental abrasive; and as a process regulator or catalyst in the manufacture of other chemicals.
Properties:	Melting Point: >1,832°F (1,000°C) Solubility in Water: Insoluble

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during maintenance and mixing operations and at unloading, storage and staging areas. A much lower potential for exposure exists in facilities using iron oxide [Fe₂O₃] in closed manufacturing processes by trained personnel.

Employee Training

Workers handling iron oxide [Fe₂O₃] should be trained to implement proper handling procedures. A NIOSH approved air-purifying particulate respirator is recommended if airborne concentrations are expected to exceed appropriate standards/guidelines. In addition, LANXESS recommends that safety glasses be worn when handling iron oxide [Fe₂O₃].

Consumer Exposure

LANXESS does not sell this product to the general public. Iron oxide [Fe₂O₃] occurs naturally in the environment. Consumers handling products manufactured with iron oxide [Fe₂O₃] as a pigment or UV blocker may be exposed to trace amounts of the inorganic chemical.

Short-Term Health Effects

Airborne iron oxide [Fe₂O₃] dust may cause eye and/or respiratory tract irritation from mechanical abrasion.

Long-Term Health Effects

Repeated exposure to iron oxide dust or fumes may cause metal fever, a flu-like illness with symptoms of metallic taste, fever, chill, aches, chest tightness and cough. Prolonged or repeated eye contact may cause permanent iron staining of the eyes. Inhalation of iron oxide fumes (e.g. from arc welding of steel) over an extended period (6-10 years) has been reported to result in pneumoconiosis, a benign lung condition with no known adverse health effects.

Physical Hazards

Iron oxide [Fe₂O₃] is stable under normal conditions of use. Avoid contact with sodium hypochlorite and carbon monoxide.

Potential Environmental Impact

Iron oxide [Fe₂O₃] is non-volatile, insoluble in water and naturally occurring. An accidental release (spill) would not be expected to pose a danger to the environment.

Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment and if the recommended safe use and handling procedures are followed, iron oxide [Fe₂O₃] is not expected to pose a significant risk to human health or the environment.

References

International Chemical Safety Card, International Programme on Chemical Safety (IPCS)

IUCLID Dataset - CAS 1309-37-1, European Chemicals Bureau, European Commission

Safety Data Sheet (SDS), BAYFERROX 725M, LANXESS Corporation

MedlinePlus Medical Encyclopedia, U.S. National Library of Medicine and the National Institutes of Health

NIOSH Pocket Guide to Chemical Hazards, Iron (III) Oxide, U.S. National Library of Medicine and the National Institutes of Health

ToxNet Hazardous Substance Data Bank, U.S. National Library of Medicine, National Institutes of Health and the U.S. Department of Health and Human Services

Contact Information

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Notices

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