



>>Entry Name: Iron(III) oxide (Fe₂O₃)

ENTRY UNDER REVIEW

Synonym(s): Ferric oxide. Red iron oxide. Red ferric oxide. C.I. Pigment red 101. C.I. Pigment red 102

CAS Registry Number: 1309-37-1

Fe₂O₃

Molecular Formula: Fe₂O₃

Molecular Weight: 159.692

Accurate Mass: 159.854623

Percentage Composition: Fe 69.94%; O 30.06%

Source/Synthesis: Thin film prep. on SiO₂ from Fe(OEt)₃ in EtOH

Use/Importance: Commercially available. Used in metallurgy, computer memory, gas purification, magnetic tapes and magnets. Pigment, polishing and grinding agent, mordant, catalyst and feed additive

Physical Description: Dark red powder

Solubility: Insol. H₂O

Other Data: Synthetic iron (III) oxide is available in a range of hues including yellows, browns, reds, and blacks under numerous synonyms

Aldrich: 31005-0

Fluka: 44956

>>Derivative: Monohydrate

Synonym(s): Iron oxide yellow

CAS Registry Number: 12168-55-7

Use/Importance: Used in paints; rubber products; plastics

Physical Description: Resistant to alkali. Precipitated pigment with fine particle size. Intensely yellow in colour

>>Derivative: Dihydrate

CAS Registry Number: 50811-63-7

Molecular Formula: Fe₂H₄O₅

Molecular Weight: 195.723

Accurate Mass: 195.875753

Percentage Composition: Fe 57.07%; H 2.06%; O 40.87%

>>Derivative: Trihydrate

CAS Registry Number: 58799-87-4

>>Derivative: Hydrate

CAS Registry Number: 12259-21-1

Physical Description: Red-brown amorphous powder

Solubility: Sol. acid; insol. H₂O

>>Variant: α-form

Synonym(s): Haematite. Hematite

CAS Registry Number: 1317-60-8

Extra CAS Registry Numbers(s): 12191-78-5

Molecular Formula: Fe₂O₃

Molecular Weight: 159.692

Accurate Mass: 159.854623

Percentage Composition: Fe 69.94%; O 30.06%

Source/Synthesis: Mineral

Use/Importance: Most abundant iron ore

Physical Description: Red-brown solid; steel grey to black cryst.

Melting Point: Mp 1565°

Solubility: Insol. H₂O; sol. HCl, H₂SO₄

Other Data: Paramagnetic. Also occurs in a pseudomorphic form as Martite

>>Variant: β-form