



>>Entry Name: **Iron(II) chloride (FeCl₂)**

Synonym(s): Ferrous chloride. Iron dichloride

CAS Registry Number: 7758-94-3

Extra CAS Registry Numbers(s): 23838-02-0

FeCl₂

Molecular Formula: Cl₂Fe

Molecular Weight: 126.752

Accurate Mass: 125.872643

Percentage Composition: Cl 55.94%; Fe 44.06%

state

Source/Synthesis: Synth. from (1) Fe + HCl, (2) FeCl₃ + H₂, H₂S or PhCl, (3) thermal dec.of FeCl₃

Use/Importance: Synthetic precursor; mordant; catalyst for numerous processes

Physical Description: White cryst. when pure. Hygroscopic

Melting Point: Mp 676°

Boiling Point: Bp 1012°

Solubility: Sol. H₂O; insol. Et₂O; sl. sol. C₆H₆

Other Data: Antiferromagnetic below 23.5K. $\mu_{\text{eff}} = 5.87\mu_{\text{B}}$ (300K)

Hazard & Toxicity: Mild irritant

Aldrich: 45093-6

Fluka: 44938

>>Variant: Mineral-form

Synonym(s): Lawrencite

CAS Registry Number: 14639-84-0

Molecular Formula: Cl₂Fe

Molecular Weight: 126.752

Accurate Mass: 125.872643

Percentage Composition: Cl 55.94%; Fe 44.06%

Source/Synthesis: Occurs as inclusions in native iron and in iron meteorites

Physical Description: Green to brown solid

>>Derivative: Dihydrate

>>Derivative: Tetrahydrate

References:

Gmelin Handbook Inorg. Chem., Syst. No. 59, 1929, B1, 184, (bibl, rev)

Schoonmaker, R.F. *et al.*, *J. Chem. Phys.*, 1958, **29**, 116, (*synth*)

Inorg. Synth., 1960, **6**, 172; 1973, **14**, 101, (*synth*)

Colton, R. *et al.*, *Halides of the First Row Transition Metals*, Wiley, N.Y., 1969, 283, (*bibl, rev*)

Vettier, C. *et al.*, *J. Phys. Chem. Solids*, 1975, **36**, 401, (*struct*)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **3**, 1641, (*synth*)

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