

## Global Structural Information

Formula

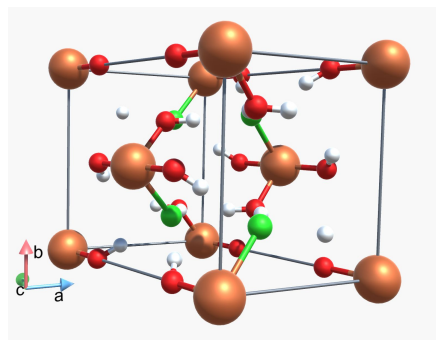
Mineral

Crystal System

Space Group

$\text{FeCl}_2(\text{H}_2\text{O})_4$  is Indium-like structured and crystallizes in the monoclinic  $P2_1/c$  space group. The structure is zero-dimensional and consists of two iron dichloride tetrahydrate molecules.

Dimensionality



Atom

**Fe(1)** is bonded in an octahedral geometry to two equivalent O(1), two equivalent O(2), and two equivalent Cl(1) atoms. Both Fe(1)–O(1) bond lengths are 2.08 Å. Both Fe(1)–O(2) bond lengths are 2.10 Å. Both Fe(1)–Cl(1) bond lengths are 2.53 Å.

Bond Length

There are **four inequivalent H sites**. In the first H site, H(1) is bonded in a single-bond geometry to one O(2) atom. The H(1)–O(2) bond length is 0.99 Å. In the second H site, H(2) is bonded in a **single-bond geometry** to one O(2) atom. The H(2)–O(2) bond length is 0.99 Å. In the third H site, H(3) is bonded in a single-bond geometry to one O(1) atom. The H(3)–O(1) bond length is 0.99 Å. In the fourth H site, H(4) is bonded in a single-bond geometry to one O(1) atom. The H(4)–O(1) bond length is 0.99 Å.

Bond type

There are two inequivalent **O sites**. In the first O site, O(1) is bonded in a **distorted water-like geometry** to one Fe(1), one H(3), and one H(4) atom. In the second O site, O(2) is bonded in a distorted water-like geometry to one Fe(1), one H(1), and one H(2) atom. Cl(1) is bonded in a distorted single-bond geometry to one Fe(1) atom.

## Local Compositional (atom/bond) Information