

Desulphurisation agent	RIIC [%]	Chemical equation
Iron(II) oxide <i>SBGx</i>	77.73	$\text{FeO} + \text{H}_2\text{S} \rightarrow \text{FeS}\downarrow + \text{H}_2\text{O}$
Iron(III) oxide <i>SBGx</i>	69.94	$\text{Fe}_2\text{O}_3 + 3\text{H}_2\text{S} \rightarrow 2\text{FeS}\downarrow + \text{S}\downarrow + 3\text{H}_2\text{O}$
Iron(II,III) oxide	72.36	$\text{Fe}_3\text{O}_4 + 4\text{H}_2\text{S} \rightarrow 3\text{FeS}\downarrow + \text{S}\downarrow + 4\text{H}_2\text{O}$
Iron(II) chloride	44.06	$\text{FeCl}_2 + \text{H}_2\text{S} \rightarrow \text{FeS}\downarrow + 2\text{HCl}^{\text{A}}$
Iron(III) chloride	34.43	$2\text{FeCl}_3 + 3\text{H}_2\text{S} \rightarrow 2\text{FeS}\downarrow + \text{S}\downarrow + 6\text{HCl}$
Iron(III) oxide-hydroxide	62.85	$2\text{FeO}(\text{OH}) + 3\text{H}_2\text{S} \rightarrow 2\text{FeS}\downarrow + \text{S}\downarrow + 4\text{H}_2\text{O}$
Iron(II) hydroxide	62.15	$\text{Fe}(\text{OH})_2 + \text{H}_2\text{S} \rightarrow \text{FeS}\downarrow + 2\text{H}_2\text{O}$
Iron(III) hydroxide	52.26	$2\text{Fe}(\text{OH})_3 + 3\text{H}_2\text{S} \rightarrow 2\text{FeS}\downarrow + \text{S}\downarrow + 6\text{H}_2\text{O}$
Iron(III) oxide trihydrate	52.26	$\text{Fe}_2\text{O}_3 \cdot 3\text{H}_2\text{O} + 3\text{H}_2\text{S} \rightarrow 2\text{FeS}\downarrow + \text{S}\downarrow + 6\text{H}_2\text{O}$

Also worth listing: Biological desulphurisation

O ₂ addition dosed correctly	O ₂	+ 2H ₂ S →	2S ↓ + 2H ₂ O
O ₂ addition overdosed	2O ₂	+ H ₂ S →	H₂SO₄ ^B

^A **Hydrogen chloride** or **Hydrochloric acid gas**

^B **Sulfuric acid**

Damage caused by hydrogen chloride using iron chloride

