

Answer:

Composition by mass in percentage.

Iron = 20.2% - Fe → 56
Oxygen = 23.0% - O → 16
Sulphur = 11.5% - S → 32
Water = 45.3% - H₂O → 18

You get the Empirical formula Assuming their percentage is the mass respectively.

	Fe	O	S	H ₂ O
Mass	20.2	23	11.5	45.3
Molar mass	56	16	32	18
mass = $\frac{\text{Mass}}{\text{mm}}$	$\frac{20.2}{56}$	$\frac{23}{16}$	$\frac{11.5}{32}$	$\frac{45.3}{18}$
divide by least	$\frac{0.3607}{0.3594}$	$\frac{1.4375}{0.3594}$	$\frac{0.3594}{0.3594}$	$\frac{2.5167}{0.3594}$

RFM = 278
↓ (E.F)_n = RFM.

$$(\text{FeSO}_4 \cdot 7\text{H}_2\text{O})_n = 278$$

$$\{56 + 32 + 64 + (18 \times 7)\}_n = 278$$

$$\frac{278n}{278} = \frac{278}{278}$$
$$n = 1$$

Formula for Hydrated salt is.

