

Copper(II) sulfate pentahydrate



Copper sulfate pentahydrate - blue crystals with equal density 2,29 g/cm³. They are well soluble in water at 20°C – 32.2 g/100 g, at 100°C – 203.3 g/100 g. They are well soluble in methanol (16 g in 100 g of methanol at 20°C). They are not soluble in ethanol.

Copper sulfate pentahydrate heated at higher temperatures (above 150°C) undergoes complete dehydration.

Copper(II) sulfate pentahydrate is a poison - please be very careful !

CuSO₄ can be obtained in different ways according to the reaction equations:



Due to the highly toxic nitrogen oxides emitted during the reaction and the use of concentrated sulfuric acid, work should be carried out under an efficient fume cupboard.

Equipment:

- 100-250 cm³ beaker,
- Graduated cylinder for 25 cm³,
- Heating set,
- Stirring rod,
- Filtration kit or vacuum filtration kit (optional),
- Watch glass.

Reagents:

- Metallic copper shavings - 5 grams,
- Concentrated sulfuric acid, density 1.84 g/cm³ - 5 cm³,
- Nitric acid solution (1:1) – about 7M – 7.5 cm³,
- Water-ethanol solution (1:1)
- Distilled water.

