

Current CLP Environmental Classification of Copper and Copper Compounds**

Chemical Formula	CAS#	EC#	Hazardous to aquatic environment Annex VI	ATP 2 with RWC	M-factor Acute Toxicity	M-factor Chronic Toxicity	Comment
Copper compounds in general	-	-		Acute 1, Chronic 2	10	NR	In general water solubility too high to affect environmental classification therefore given same classification as copper sulphate as worst case
Except those listed below:							
Copper (II) oxide	1317-38-0	215-269-1	-	Acute 1, Chronic 3	1	NR	The solubility of copper oxide in water at 20°C was tested at a range of pH. The following results were obtained: pH 6: 0.000394 g/l pH 5.1 - 5.5: > 0.23 g/l pH 9: 0.00001 g/l Solubility increase with decreasing pH
Copper sulphide	1317-40-4	215-271-2	-	Not classified	-	-	The solubility of copper sulphide in water at 20°C was tested at pH 6. The following results were obtained at 1mg/l: After 7 days: 5.7 µg/l After 28 days: 14.5 µg/l
Proposed copper classification for comparison							
Cu massive	7440-50-8	213-159-6		Not Classified	1	NR	
Cu powder	7440-50-8	213-159-6		Acute 1, Chronic 2	1	NR	
*Copper compounds already on Annex VI e.g.							
Copper (II) chloride	7758-89-6	231-842-9	Acute Chronic Cat. 1	Acute 1, Chronic 2	10	1	
Copper (I) oxide	1317-39-1	215-270-7	Acute Chronic Cat. 1	Acute 1, Chronic 2	10	1	All tests were carried out at 20.0 ± 0.5°C. Under acidic conditions (pH 4) the test material neutralised acidic solutions a solubility of 28.6 g l ⁻¹ was achieved by continuous acidification but this was not realistically measurable. Under ambient pHs (6.5 – 6.6) a solubility of 6.39 × 10 ⁻⁴ g l ⁻¹ was reported. Under basic conditions (pH 9.7 – 9.8) the solubility was reported to be <5.39 × 10 ⁻⁴ g l ⁻¹ .
Copper sulphate	7758-98-7	231-847-6	Acute Chronic Cat. 1	Acute 1, Chronic 2	10	1	Data given for copper sulphate pentahydrate. Water solubility 22 g/100g water at 25°C.

NR = not relevant, M-factors are only applicable to the concentration of a substance classified as hazardous to the aquatic environment for categories Acute 1 and Chronic 1

*For Annex VI substances - Acute and chronic M factors based on 'without Removal from Water Column' (RWC) and reflect official classification.

**With regard to DSD classification: Copper compounds in general will be classified R50 (with RWC). Copper compounds already on Annex VI are classified R50/53.