

COMPOSITION

Name: Cement copper

Description: boundary composition of the substance

Degree of purity: 100% (w/w)

Table 1.2 Constituents

Constituent	Typical concentration	Concentration range	Remarks
copper EC no.: 231-159-6	49.2 % (w/w)	>10 - <80 % (w/w)	Refers to % element. Cu is mainly present as CuZn(OH) ₂ , CuO and Cu ₂ O
zinc EC no.: 231-175-3	14.9 % (w/w)	>5 - <20 % (w/w)	Refers to % element. Zn is mainly present as CuZn(OH) ₂ ; Ca(Zn(OH) ₂) ₂ ·2H ₂ O and ZnS
cadmium EC no.: 231-152-8	0.67 % (w/w)	>0.1 - <20 % (w/w)	Refers to % element. Cd maybe present in various alloy, intermetallic, oxide and sulfide mineralogical structures (assumed worst case = CdO).
calcium sulfate EC no.: 231-900-3	7 % (w/w)	>0 - <13.9 % (w/w)	
iron EC no.: 231-096-4	0.21 % (w/w)	>0.1 - <10 % (w/w)	refers to % element. Fe may be present as metal, alloy or in various intermetallic species/minerals and inclusions
lead equivalent EC no.: 231-100-4	0.33 % (w/w)	>0.1 - <10 % (w/w)	refers to % element. Pb may be present as various alloy and intermetallic compounds (assumed worst case: Pb compound)
nickel EC no.: 231-111-4	0.06 % (w/w)	>0 - <7 % (w/w)	refers to % element. Ni may be present as various intermetallic mineralogical structure (assumed worst case: Nickel Oxides). Nickel above 1% will trigger sensitisation classification
cobalt EC no.: 231-158-0	<0.01 % (w/w)	>0 - <10 % (w/w)	Refers to elemental %. Assumed as oxide (worst-case)

silicon EC no.: 231-130-8	0.14 % (w/w)	>0 - <3 % (w/w)	
arsenic EC no.: 231-148-6	<3.15 % (w/w)	>0.1 - <12 % (w/w)	Refers to % element. As is present as As-intermetallic compounds. Above 3.15% of arsenic content, the substance becomes skin corrosive category 1B
antimony EC no.: 231-146-5	0.03 % (w/w)	>0.01 - <5 % (w/w)	Refers to elemental %.
chlorine EC no.: 231-959-5	0.34 % (w/w)	>0.1 - <10 % (w/w)	Refers to elemental %.
Magnesium oxide EC no.: 215-171-9	1.46 % (w/w)	>0 - <3 % (w/w)	
manganese EC no.: 231-105-1	1.04 % (w/w)	>0 - <2 % (w/w)	

Name: Cement copper high grade

Description: legal entity composition of the substance

Degree of purity: 100% (w/w)

Table 1.2 Constituents

Constituent	Typical concentration	Concentration range	Remarks
copper EC no.: 231-159-6	49.2 % (w/w)	>10 - <80 % (w/w)	Refers to % element. Cu is mainly present as CuZn(OH) ₂ , CuO and CuO ₂
zinc EC no.: 231-175-3	14.9 % (w/w)	>5 - <20 % (w/w)	Refers to % element. Zn is mainly present as CuZn(OH) ₂ ; Ca(Zn(OH) ₃) ₂ ·2H ₂ O and ZnS
cadmium EC no.: 231-152-8	0.67 % (w/w)	>0.1 - <3.25 % (w/w)	Refers to % element. Cd maybe present in various alloy, intermetallic, oxide and sulfide mineralogical structures (assumed worst case = CdO). Cadmium above 3.25 will trigger Acute Inhalation category 3
calcium sulfate EC no.: 231-900-3	7 % (w/w)	>0 - <13.9 % (w/w)	
iron EC no.: 231-096-4	0.21 % (w/w)	>0.1 - <10 % (w/w)	refers to % element. Fe may be present as metal, alloy or in various intermetallic

			species/minerals and inclusions
lead equivalent EC no.: 231-100-4	0.33 % (w/w)	>0.1 - <2 % (w/w)	refers to % element. Pb may be present as various alloy and intermetallic compounds (assumed worst case: Pb compound)
nickel EC no.: 231-111-4	0.06 % (w/w)	>0 - <1 % (w/w)	refers to % element. Ni may be present as various intermetallic mineralogical structure (assumed worst case: Nickel Oxides). Nickel above 1% will trigger sensitisation classification
silicon EC no.: 231-130-8	0.14 % (w/w)	>0 - <3 % (w/w)	
arsenic EC no.: 231-148-6	<0.09 % (w/w)	>0 - <0.6 % (w/w)	Refers to % element. As is present as As-intermetallic compounds. Arsenic above 0.6% will trigger skin irritation, and above 3.15: skin corrosion
antimony EC no.: 231-146-5	0.03 % (w/w)	>0 - <5 % (w/w)	Refers to elemental %.
chlorine EC no.: 231-959-5	0.34 % (w/w)	>0.1 - <10 % (w/w)	Refers to elemental %.
Magnesium oxide EC no.: 215-171-9	1.46 % (w/w)	>0 - <3 % (w/w)	
Manganese oxide EC no.: 215-695-8	1.35 % (w/w)	>0 - <2 % (w/w)	