

Composition output: PM: Slimes and sludges (4) version 'G4 Slimes & sludges - Cluster 3 - 140318' (Tier 1)

Tier 1: Classification based on speciation of elements

Metal speciation/metal mineralogy can be assessed from sequential extraction/metal analysis and mineralogical analysis (XRD and microscopes equipped with EDS (Energy Dispersive Spectrometry) and WDS (Wavelength Dispersive Spectrometry) analyzers. The determination of the speciation requires in-depth knowledge of metal particularities. The classification is based on elemental and speciation data and worst-case 100% dissolution assumption.

In case of classification, [further refinement \(f.e. TDP data\) can be obtained from the consortia for the major drivers.](#)



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Input values:

Element	Conc.% (user input)	Conc.% (ref sample)	Distr.% (ref sample)	Species / Class. entry	Source
Ag	0.300	66.000	100.00	Ag compounds (e.g. AgCl, AgI, AgBr)	self classification EPMF
Al	0.800	20.000	100.00	Al massive/Al compounds	not classified
As	0.080	10.000	100.00	As ₂ O ₃ / AsO ₃	Annex VI
Au	0.000	81.000	100.00	Au compounds	not classified
Ba	0.000	40.000	100.00	BaO ₂	Annex VI + self classification for ENV
Be	0.000	0.000	100.00	beryllium compounds with the exception of aluminium beryllium silicates, and with those specified elsewhere in Annex VI	Annex VI
Bi	0.700	15.000	100.00	Bi	not classified
C	0.400	0.000	100.00	inorganic C and C compounds	not classified
Ca	0.800	0.000	100.00	CaO	self classification IMA
Cd	0.000	10.000	100.00	CdCl ₂	Annex VI
Ce	1.000	0.000	100.00	Ce compounds	self classification
Cl	13.600	25.000	100.00	Cl / Cl compounds	not classified
Co	0.000	40.000	100.00	CoCl ₂	1st ATP
Cr	0.000	20.000	100.00	Cr ₂ O ₃	self classification
Cu	33.000	45.000	100.00	Copper oxychloride	self classification
F	0.000	0.000	100.00	F	not classified
Fe	7.700	45.000	100.00	Fe/Fe compounds (e.g. FeS ₂)	not classified

Hg	0.000	0.000	100.00	inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in Annex VI	Annex VI
Ir	0.000	0.000	100.00	Ir/Ir compounds	not classified
La	0.000	0.000	100.00	LaCl3	self classification (ECHA dissemination website)
Li	0.000	0.000	100.00	Li	Annex VI
Mg	0.300	0.000	100.00	Mg/Mg compounds	not classified
Mn	0.000	0.000	100.00	MnO2	Annex VI
Mo	0.000	0.000	100.00	MoO3	1st ATP
N	0.000	15.000	100.00	NH3	Annex VI
Na	5.000	0.000	100.00	Na (other not classified compounds/species)	not classified
Nb	0.000	0.000	100.00	Nb/Nb compounds	not classified
Ni	0.600	20.000	100.00	NiCl2	
O	0.000	0.000	100.00	O	not classified
Os	0.000	0.000	100.00	Os/Os compounds	not classified
P	0.000	0.000	100.00	P/PO4	not classified
Pb	0.200	35.000	100.00	lead compounds with the exception of those specified elsewhere in Annex VI	Annex VI + self classification for carcinogenicity
Pd	0.030	20.000	100.00	Pd compounds (e.g. [Pd(NH3)4](OH)2)	self classification EPMF
Pt	0.010	20.000	100.00	Pt compounds with the exception of Pt compounds specified in Annex VI	self classification EPMF
Re	0.000	0.000	100.00	Re compounds	not classified
Rh	0.000	20.000	100.00	Rh compounds	self classification
Ru	0.000	20.000	100.00	Ru compounds	self classification
S	2.400	0.000	100.00	H2SO4	Annex VI
Sb	0.000	10.000	100.00	Sb2O3	Annex VI
Se	0.000	35.000	100.00	Selenium compounds except cadmium sulphoselenide	Annex VI
Si	1.300	5.000	100.00	SiO2 non-crystalline	not classified
Sn	0.300	10.000	100.00	Sn compounds	self classification
Ta	0.000	0.000	100.00	Ta/Ta compounds	self classification
Te	0.070	35.000	100.00	Te compounds (self classification)	self classification
Ti	0.000	0.000	100.00	Ti (other not classified compounds, TiO2)	not classified
Tl	0.000	0.000	100.00	thallium compounds, with the exception of those specified elsewhere in Annex VI	Annex VI
V	0.000	0.000	100.00	V	not classified
W	0.000	0.000	100.00	W	not classified
Zn	0.800	10.000	100.00	ZnO	Annex VI
Zr	0.000	0.000	100.00	Zr/Zr compounds	not classified

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Intermediate calculations Tier 1 human health

Classification Entry	Concentration (%)	Classification Acute Toxicity - oral	Acute toxicity oral: Conc/ATEi	Classification Acute Toxicity - dermal	Acute toxicity dermal: Conc/ATEi	Classification Acute Toxicity - inhalation	Acute toxicity inh: Conc/ATEi	Classification Skin corrosion/irritation	Classification eye damage/eye irritation
H2SO4	7.34086387026352800							Cat. 1A	
Mg/Mg compounds	0.3000000000000000500								
ZnO	0.995766289385133200								
Cl / Cl compounds	13.600								
lead compounds with the exception of those specified elsewhere in Annex VI	0.2000	Cat. 4; H302	0.0004			Cat. 4; H332	0.133333333333		
Fe/Fe compounds (e.g. FeS2)	7.700								
Copper oxychloride	55.453356623548300	Cat. 4; H302	0.110906713247			Cat. 4; H332	36.9689044157		
Bi	0.69999999999999900								
Na (other not classified compounds/species)	4.99999999999999600								
inorganic C and C compounds	0.4000								
NiCl2	1.324853730427819600	Cat. 3; H301	0.0132485373043			Cat. 3; H331	2.64970746086	Cat. 2	
Ce compounds	1.00								
As2O3 / AsO3	0.1056250500520541600	Cat. 2; H300	0.0211250100104					Cat. 1B	
Al massive/Al compounds	0.8000								
CaO	1.119373222216677400							Cat. 2	Cat. 1
Sn compounds	0.3000								
Te compounds (self classification)	0.0700000000000000100		0.0007						
Ag compounds (e.g. AgCl, AgI, AgBr)	0.3000								
Pt compounds with the exception of Pt compounds specified iin Annex VI	0.01000								
Pd compounds (e.g. [Pd(NH3)4](OH)2)	0.03000		0.00006						Cat. 2
SiO2 non-crystalline	2.78107242042298700								

[illegible]

NiCl2	1.324853730427819600	Resp./Skin Sens. Cat. 1	Muta. Cat. 2	Cat. 1A			STOT RE Cat. 1***		Acute Chronic Cat. 1	0.0132485373043	0.0132485373043
Ce compounds	1.00								Chronic Cat. 4	0.01	0.01
As2O3 / AsO3	0.1056250500520541600			Cat. 1A					Acute Chronic Cat. 1	0.00105625050052	0.00105625050052
Al massive/Al compounds	0.8000									0.008	0.008
CaO	1.119373222216677400					STOT SE Cat. 3				0.0111937322222	0.0111937322222
Sn compounds	0.3000									0.003	0.003
Te compounds (self classification)	0.0700000000000000100									0.0007	0.0007
Ag compounds (e.g. AgCl, AgI, AgBr)	0.3000								Acute Chronic Cat. 1	3	0.3
Pt compounds with the exception of Pt compounds specified iin Annex VI	0.01000								Acute Chronic Cat. 1	0.001	0.001
Pd compounds (e.g. [Pd(NH3)4](OH)2)	0.03000	Skin Sens. Cat. 1							Acute Chronic Cat. 1	0.003	0.003
SiO2 non-crystalline	2.78107242042298700									0.0278107242042	0.0278107242042

CLP



Signal word: Danger

Endpoint	Classification	Major driver
Acute toxicity-oral	Cat. 4; H302	lead compounds with the exception of those specified elsewhere in Annex VI, Copper oxychloride, NiCl2, As2O3 / AsO3
Acute toxicity-dermal	Not classified	/
Acute toxicity-inhalation	Cat. 4; H332	lead compounds with the exception of those specified elsewhere in Annex VI, Copper oxychloride, NiCl2
Skin corrosion/irritation	Cat. 2; H315	H2SO4
Serious eye damage/eye irritation	Cat. 2; H319	CaO, H2SO4, As2O3 / AsO3, Pd compounds (e.g. [Pd(NH3)4](OH)2)
Respiratory or skin sensitisation	Resp./Skin Sens. Cat. 1; H334/H317	NiCl2
Germ cell mutagenicity	Cat. 2; H341	NiCl2
Carcinogenicity	Cat. 1A; H350	NiCl2
Reproductive toxicity	Not classified	/
Specific target organ toxicity - single exposure	Not classified	/
Specific target organ toxicity - repeated exposure	Cat. 2; H373	NiCl2

Aspiration hazard	Not classified	/
Hazardous to aquatic environment - ACUTE	Acute Cat. 1; H400	Copper oxychloride,Ag compounds (e.g. AgCl, AgI, AgBr)
Hazardous to aquatic environment - CHRONIC	Chronic Cat. 1; H410	Copper oxychloride,Ag compounds (e.g. AgCl, AgI, AgBr)

GHS (without EU SCL)



Signal word: Danger

Endpoint	Classification	Major driver
Acute toxicity-oral	Cat. 4; H302	lead compounds with the exception of those specified elsewhere in Annex VI,Copper oxychloride,NiCl ₂ ,As ₂ O ₃ / As ₂ O ₃
Acute toxicity-dermal	Not classified	/
Acute toxicity-inhalation	Cat. 4; H332	lead compounds with the exception of those specified elsewhere in Annex VI,Copper oxychloride,NiCl ₂
Skin corrosion/irritation	Cat. 1A; H314	H ₂ SO ₄
Serious eye damage/eye irritation	Cat. 1; H318	CaO,H ₂ SO ₄ ,As ₂ O ₃ / As ₂ O ₃
Respiratory or skin sensitisation	Resp./Skin Sens. Cat. 1; H334/H317	NiCl ₂
Germ cell mutagenicity	Cat. 2; H341	NiCl ₂
Carcinogenicity	Cat. 1A; H350	NiCl ₂
Reproductive toxicity	Not classified	/
Specific target organ toxicity - single exposure	Not classified	/
Specific target organ toxicity - repeated exposure	Cat. 2; H373	/
Aspiration hazard	Not classified	/
Hazardous to aquatic environment - ACUTE	Acute Cat. 1; H400	Copper oxychloride,Ag compounds (e.g. AgCl, AgI, AgBr)
Hazardous to aquatic environment - CHRONIC	Chronic Cat. 1; H410	Copper oxychloride,Ag compounds (e.g. AgCl, AgI, AgBr)

The MECLAS tool aims to reproduce the classification for complex metal mixtures. Although prepared with great care, flawless operation cannot be guaranteed. Users of the MECLAS tool need to be aware of this. By using the MECLAS tool, users accept full responsibility for their calculations. Neither Arche, Eurometaux or the data providers can take liability for (mis)use of the results.