

NYRSTAR LEACH PRODUCT

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	: NYRSTAR LEACH PRODUCT
Synonyms	: Leach residues, zinc ore, lead-contg (Hot Leach); NLP (Nyrstar Leach Product), BLP (Balén Leach Product), ALP (Auby Leach Product), BuLP (Budel Leach Product); NYRSTAR-BLP (NYRSTAR LEACH PRODUCT); Zinc Material; Leach residues, zinc ore, lead-contg.
Registration number REACH	: 01-2119474886-19-0001 (Nyrstar Belgium NV/SA) 01-2119474886-19-0010 (Nyrstar Budel BV) 01-2119474886-19-0005 (Nyrstar France SAS)
Product type REACH	: Substance/UVCB
CAS number	: 91053-49-5 69012-70-0
EC index number	: 082-001-00-6
EC number	: 293-314-4 273-766-9

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified uses

The substance is defined as intermediate under Regulation (EC) No 1907/2006, not fulfilling the definition of strictly controlled conditions for which consequently an Article 10 (full) registration is required

IU1: production of the intermediate - During the hydrometallurgical production of zinc and/or zinc-compounds, leach residue and/or gascleaning residues concentrate the Pb- and/or other compounds from the feed. This material is extracted and isolated for further processing.

IU2: Handling and storage of the intermediate: Handling and temporary storage in bulk take place after production and before further processing of the intermediate

IU3: use of the intermediate - The material is unloaded, blended with other, primary and/or secondary materials, and loaded in smelting furnaces (ISA, Blast, convertor, ...) or similar, or in hydrometallurgical steps for further processing and extraction of non-ferrous metals (Pb, Ag, ...) and/or their compounds.

For more detailed information regarding the Identified Uses and the associated Exposure Scenarios: see attached annex

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Nyrstar Belgium N.V. on behalf of Nyrstar Sales & Marketing A.G.

Zinkstraat 1

B-2490 Balen

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Nyrstar France S.A.S. on behalf of Nyrstar Sales & Marketing A.G.

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F-59950 Aubry

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Manufacturer of the product

Nyrstar Sales & Marketing SA

1 Rue de Jargonnant

CH-1207 Geneva

infoSDS@nyrstar.com

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :

+32 14 58 45 45 (BIG)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Carc.	category 1A	H350i: May cause cancer by inhalation.
Repr.	category 1A	H360Df: May damage the unborn child if swallowed. Suspected of damaging fertility if swallowed.
Lact.	-	H362: May cause harm to breast-fed children.
STOT RE	category 1	H372: Causes damage to organs (blood circulation, central nervous system, kidneys) through prolonged or repeated exposure if swallowed.
Acute Tox.	category 4	H332: Harmful if inhaled.
Acute Tox.	category 4	H302: Harmful if swallowed.
Eye Dam.	category 1	H318: Causes serious eye damage.
Skin Irrit.	category 2	H315: Causes skin irritation.
Aquatic Acute	category 1	H400: Very toxic to aquatic life.
Aquatic Chronic	category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2. Label elements



Signal word

Danger

H-statements

H350i	May cause cancer by inhalation.
H360Df	May damage the unborn child if swallowed. Suspected of damaging fertility if swallowed.
H362	May cause harm to breast-fed children.
H372	Causes damage to organs (blood circulation, central nervous system, kidneys) through prolonged or repeated exposure if swallowed.
H302 + H332	Harmful if swallowed or if inhaled.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H410	Very toxic to aquatic life with long lasting effects.

P-statements

P280	Wear protective gloves, protective clothing and eye protection/face protection.
P260	Do not breathe dust.
P263	Avoid contact during pregnancy and while nursing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.

Supplemental information

Restricted to professional users.

2.3. Other hazards

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances

SECTION 3: Composition/information on ingredients

3.1. Substances

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark	M-factors and ATE
Leach residues, zinc ore, lead-contg. 01-2119474886-19	91053-49-5 69012-70-0 293-314-4 273-766-9	C>99%	Carc. 1A; H350i Repr. 1A; H360Df Lact. ; H362 STOT RE 1; H372 Acute Tox. 4; H332 Acute Tox. 4; H302 Eye Dam. 1; H318 Skin Irrit. 2; H315 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Repr. 2; H361f: C≥2,5%, (CLP Annex VI (ATP 0)) STOT RE 2; H373: C≥0,5%, (CLP Annex VI (ATP 0))	(1)(2)(6)(10)	UVCB	M: 1 (Acute, BIG) M: 1 (Chronic, BIG)

Reason for revision: 1; 2; 3; 4; 5; 7; 8; 9; 10; 11; 12; 14; 15; 16

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lead(II)sulphate	7446-14-2 231-198-9	C<35%	Repr. 1A; H360Df Acute Tox. 4; H332 Acute Tox. 4; H302 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Repr. 2; H361f: C≥2,5%, (CLP Annex VI (ATP 0)) STOT RE 2; H373: C≥0,5%, (CLP Annex VI (ATP 0))	(1)(2)(10)	Component UVCB	M: 1 (Acute, BIG)
diiron zinc tetraoxide	12063-19-3 235-052-5	C<35%			Component UVCB	
calcium sulfate 01-2119444918-26	7778-18-9 231-900-3	C<14%		(2)	Component UVCB	
zinc sulphate (anhydrous)	7733-02-0 231-793-3	C<10%	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(10)	Component UVCB	M: 1 (Acute, ECHA (registration dossier)) M: 1 (Chronic, ECHA (registration dossier))
silica, precipitated	112926-00-8	C<28%		(2)	Component UVCB	
barium sulfate	7727-43-7 231-784-4	C<1.2%		(2)	Component UVCB	
copper sulphate	7758-98-7 231-847-6	C<1%	Acute Tox. 4; H302 Eye Dam. 1; H318 Skin Irrit. 2; H315 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)(6)(10)	Component UVCB	M: 10 (Acute, BIG) M: 1 (Chronic, BIG)
cadmium sulphate	10124-36-4 233-331-6	C<1%	Carc. 1B; H350 Muta. 1B; H340 Repr. 1B; H360FD Acute Tox. 2; H330 Acute Tox. 3; H301 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Carc. 1B; H350: C≥0,01%, (CLP Annex VI (ATP 0)) STOT RE 1; H372: C≥7%, (CLP Annex VI (ATP 0)) STOT RE 2; H373: 0,1%≤C<7%, (CLP Annex VI (ATP 0))	(1)(2)(4)(10)	Component UVCB	M: 10 (Acute, ECHA) M: 10 (Chronic, ECHA)
manganese sulphate	7785-87-7 232-089-9	C<1%	STOT RE 2; H373 Eye Dam. 1; H318 Aquatic Chronic 2; H411	(1)(2)(6)	Component UVCB	
iron arsenate	10102-49-5 233-274-7	C<1%	Carc. 1A; H350 Acute Tox. 3; H331 Acute Tox. 3; H301 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)(10)	Component UVCB	M: 1 (Acute, BIG)
zinc sulphide	1314-98-3 215-251-3	C<4%			Component UVCB	
sulfur	7704-34-9 231-722-6	C<3%	Skin Irrit. 2; H315	(1)(10)	Component UVCB	
magnesium sulphate	7487-88-9 231-298-2	C<1%			Component UVCB	
aluminium oxide	1344-28-1 215-691-6	C<1%		(2)	Component UVCB	
iron sulphide	1317-37-9 215-268-6	C<1%		(2)	Component UVCB	
tin oxide	1332-29-2 215-569-2	C<1%		(2)	Component UVCB	
Iron hydroxide	11113-66-9 234-345-0	C<1%			Component UVCB	
calcium dihydroxide	1305-62-0 215-137-3	C<6%	Eye Dam. 1; H318 Skin Irrit. 2; H315 STOT SE 3; H335	(1)(2)	Component UVCB	
silver massive: [particle diameter ≥ 1 mm]	7440-22-4 231-131-3	C<0.06%	Repr. 2; H361f STOT RE 2; H373	(1)(2)(10)	Component UVCB	

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- (1) For H- and EUH-statements in full: see section 16
(2) Substance with a Community workplace exposure limit
(4) Enumerated in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No. 1907/2006)
(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

After inhalation:

Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.

After ingestion:

Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

4.2. Most important symptoms and effects, both acute and delayed

4.2.1 Acute symptoms

After inhalation:

AFTER INHALATION OF FUME: FOLLOWING SYMPTOMS MAY APPEAR LATER: Metal fume fever. Feeling of weakness. Body temperature rise. Headache. Nausea. Vomiting. Metal taste. Muscular pain. Rapid respiration. Respiratory difficulties. Possible oedema of the upper respiratory tract. Risk of lung oedema. Respiratory collapse.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Corrosion of the eye tissue. Inflammation/damage of the eye tissue.

After ingestion:

AFTER INGESTION OF HIGH QUANTITIES: Metal taste. Dry/sore throat. Nausea. Vomiting. Abdominal pain. Feeling of weakness. Headache.

4.2.2 Delayed symptoms

No effects known.

4.3. Indication of any immediate medical attention and special treatment needed

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Adapt extinguishing media to the environment for surrounding fires.

5.1.2 Unsuitable extinguishing media:

Not applicable.

5.2. Special hazards arising from the substance or mixture

On heating (>1000°C): release of toxic and corrosive gases/vapours (lead oxides, sulphur oxides, zinc oxides).

5.3. Advice for firefighters

5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Face shield (EN ISO 16321). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Dust cloud production: dust-tight suit (EN 13982). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Prevent dust cloud formation. No naked flames. Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

6.1.1 Protective equipment for non-emergency personnel

See section 8.2

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6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Face shield (EN ISO 16321). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Dust cloud production: dust-tight suit (EN 13982).

Suitable protective clothing

See section 8.2

6.2. Environmental precautions

Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Prevent dust cloud formation. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See section 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Avoid raising dust. Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Do not discharge the waste into the drain. Avoid dehydration. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: -15 °C - 35 °C. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, oxidizing agents, (strong) acids.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

EU

Arsenic acid and its salts, as well as inorganic arsenic compounds	Time-weighted average exposure limit 8 h (Binding occupational exposure limit value)	0.01 mg/m ³ (1)
Cadmium and its inorganic compounds	Time-weighted average exposure limit 8 h (Binding occupational exposure limit value)	0.001 mg/m ³ (2)
Calcium dihydroxide	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1 mg/m ³ (3)
	Short time value (Indicative occupational exposure limit value)	4 mg/m ³ (3)
Inorganic lead and its compounds	Time-weighted average exposure limit 8 h (Binding occupational exposure limit value)	0.03 mg/m ³ (1)
Manganese and inorganic manganese compounds (as manganese)	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	0.05 mg/m ³ (3)
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	0.2 mg/m ³ (1)
Silver, metallic	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	0.1 mg/m ³
Tin (inorganic compounds as Sn)	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	2 mg/m ³ (4)

(1) (1): Inhalable fraction

(2) (10): Inhalable fraction. Limit value 0,004 mg/m³ until 11 July 2027. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine.

(3) (2): Respirable fraction

(4) (Sn)

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Belgium

Aluminium (métal et composés insolubles)	Time-weighted average exposure limit 8 h	1 mg/m ³ (1)
Argent (métal)	Time-weighted average exposure limit 8 h	0.1 mg/m ³
Arsenic, acide arsénique et ses sels, ainsi que ses composés inorganiques (en As)	Time-weighted average exposure limit 8 h	0.01 mg/m ³
Baryum (sulfate de) (sans fibres d'amiante et	Time-weighted average exposure limit 8 h	5 mg/m ³
Cadmium et ses composés (en Cd)	Time-weighted average exposure limit 8 h	0.002 mg/m ³ (2)
Cadmium et ses composés (en Cd) <i>shall apply from 2027-07-12</i>	Time-weighted average exposure limit 8 h	0.001 mg/m ³ (3)
Cadmium et ses composés (en Cd) <i>shall apply until 2027-07-11</i>	Time-weighted average exposure limit 8 h	0.004 mg/m ³ (3)
Calcium (dihydroxyde de)	Time-weighted average exposure limit 8 h	1 mg/m ³ (1)
	Short time value	4 mg/m ³ (1)
Calcium (sulfate de) (anhydrate, hemihydrate, dihydrate, gypse)	Time-weighted average exposure limit 8 h	10 mg/m ³
Etain (oxyde et composés inorganiques de; sauf SnH ₄ , en Sn)	Time-weighted average exposure limit 8 h	2 mg/m ³
Manganèse et ses composés (en Mn)	Time-weighted average exposure limit 8 h	0.05 mg/m ³ (1)
	Time-weighted average exposure limit 8 h	0.2 mg/m ³ (4)
Plomb et ses composés inorganiques, mesurée en tant que Pb (non spécifié ailleurs)	Time-weighted average exposure limit 8 h	0.03 mg/m ³
Silices amorphes : précipités (gel de silice)	Time-weighted average exposure limit 8 h	10 mg/m ³

(1) Fraction alvéolaire

(2) particules alvéolaires

(3) particules inhalables

(4) fraction inhalable

The Netherlands

Cadmium en anorganische cadmiumverbindingen (als Cd) <i>shall apply until 2027-07-10</i>	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.00086 ppm (1)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.004 mg/m ³ (1)
Calcium-dihydroxide	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.33 ppm (2)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	1 mg/m ³ (2)
	Short time value (Public occupational exposure limit value)	1.3 ppm (2)
	Short time value (Public occupational exposure limit value)	4 mg/m ³ (2)
In water onoplosbare zouten van arseenzuur (als As)	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	9E-5 ppm (3)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.28 µg/m ³ (3)
Koper en anorganische koperverbindingen	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.1 mg/m ³ (4)
Lood en anorganische loodverbindingen	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.0035 ppm (4)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.03 mg/m ³ (4)
	<i>Als biologische grenswaarde op grond van artikel 4.16, eerste lid, van het besluit, wordt voor lood vastgesteld: 30 µg Pb/100 ml bloed.</i>	
Mangaan en anorganische mangaan-verbindingen (als mangaan)	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.022 ppm (5)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.088 ppm (6)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.05 mg/m ³ (5)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.2 mg/m ³ (6)
Tin (anorganische verbindingen als Sn)	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.41 ppm (7)
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	2 mg/m ³ (7)
Zilver, metallisch	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.022 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	0.1 mg/m ³

(1) als Cd

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- (2) respirabel
(3) als As
(4) inhaleerbaar
(5) respirabel, als mangaan
(6) inhaleerbaar, als mangaan
(7) als Sn

France

Aluminium (trioxyde de di-)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 mg/m ³
Argent (métallique)	Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	0.1 mg/m ³
Cadmium et ses composés inorganiques <i>shall apply from 2027-07-12</i>	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	0.001 mg/m ³ (1)
Cadmium et ses composés inorganiques <i>shall apply until 2027-07-11</i>	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	0.004 mg/m ³ (1)
Calcium (hydroxyde de)	Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	1 mg/m ³ (2)
	Short time value (VRI: Valeur réglementaire indicative)	4 mg/m ³ (2)
Calcium (sulfate de)	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 mg/m ³
Manganèse et ses composés exprimé en manganèse	Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	0.05 mg/m ³ (2)
	Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	0.20 mg/m ³ (3)
Plomb et ses composés inorganiques, en Pb (fraction inhalable)	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	0.03 mg/m ³ (3)

(1) Fraction inhalable. Fraction alvéolaire si une surveillance biologique organisée par le médecin du travail permet de s'assurer du respect d'une valeur biologique maximale de 2 µg Cd/g de créatinine dans les urines.

(2) La valeur limite concerne la fraction alvéolaire

(3) La valeur limite concerne la fraction inhalable

Germany

Aluminium und seine schwerlöslichen Verbindungen	Time-weighted average exposure limit 8 h (MAK)	0.05 mg/m ³ (1)
	Time-weighted average exposure limit 8 h (MAK)	0.5 mg/m ³ (2)
Bariumsulfat	Time-weighted average exposure limit 8 h (MAK)	0.3 mg/m ³ (3)
	Time-weighted average exposure limit 8 h (MAK)	4 mg/m ³ (4)
	<i>ausgenommen sind ultrafeine Partikel; siehe Abschnitt V h vgl. Abschn. V f)</i>	
	<i>vgl. Abschn. V f) und g)</i>	
Blei und anorganischen Bleiverbindungen	Time-weighted average exposure limit 8 h (TRGS 505)	30 µg/m ³ (5)
Cadmium und anorganische Cadmium Verbindungen	Time-weighted average exposure limit 8 h (TRGS 900)	0.002 mg/m ³ (6)
	<i>Der AGW gilt nur für den E-Staub und deckt die nicht-krebserzeugende Wirkung (Nierentoxizität) ab. Die krebserzeugende Wirkung und der entsprechende Eintrag für den Astaub in der TRGS 910 sind zu berücksichtigen</i>	
	<i>Der Arbeitsplatzgrenzwert bezieht sich auf den Elementgehalt des entsprechenden Metalls.</i>	
Calciumdihydroxid	Time-weighted average exposure limit 8 h (TRGS 900)	1 mg/m ³ (7)
Calciumsulfat: Anhydrit (alveolengängige Fraktion)	<i>vgl. Abschn. IIb</i>	
Calciumsulfat: Anhydrit	Time-weighted average exposure limit 8 h (MAK)	4 mg/m ³ (4)
	<i>vgl. Abschn. V f) und g)</i>	
Kieselsäuren, amorphe	Time-weighted average exposure limit 8 h (TRGS 900)	1 mg/m ³ (8)
	<i>Kolloidale amorphe Kieselsäure (7631-86-9) einschließlich pyrogener Kieselsäure und im Nassverfahren hergestellter Kieselsäure (Fällungskieselsäure, Kieselgel).</i>	
Kupfer und seine Verbindungen	Time-weighted average exposure limit 8 h (TRGS 900)	0.045 mg/m ³ (9)
	Time-weighted average exposure limit 8 h (TRGS 900)	0.2 mg/m ³ (10)
	<i>Der Arbeitsplatzgrenzwert bezieht sich auf den Elementgehalt des entsprechenden Metalls.</i>	
Mangan und seine anorganischen Verbindungen	Time-weighted average exposure limit 8 h (TRGS 900)	0.02 mg/m ³ (9)
	Time-weighted average exposure limit 8 h (TRGS 900)	0.2 mg/m ³ (8)
	<i>Der Arbeitsplatzgrenzwert bezieht sich auf den Elementgehalt des entsprechenden Metalls.</i>	
	<i>Für Permanganate gilt Spitzenbegrenzung, Überschreitungsfaktor 1(II).</i>	
Silber	Time-weighted average exposure limit 8 h (TRGS 900)	0.1 mg/m ³ (11)
Zink und seine anorganischen Verbindungen	Time-weighted average exposure limit 8 h (MAK)	0.1 mg/m ³ (12)
	Time-weighted average exposure limit 8 h (MAK)	2 mg/m ³ (13)
Zinn(IV)-Verbindungen, anorganische	Time-weighted average exposure limit 8 h (TRGS 900)	2 mg/m ³ (4)
	<i>Der Arbeitsplatzgrenzwert bezieht sich auf den Elementgehalt des entsprechenden Metalls.</i>	
	<i>Eine Begründung für die Ableitung eines gesundheitsbasierten AGW liegt nicht vor.</i>	

(1) Alveolengängige Fraktion; UF: II(8)

(2) Einatembare Fraktion; UF: II(8)

(3) Alveolengängige Fraktion, multipliziert mit der Materialdichte; UF: II(8)

(4) Einatembare Fraktion

(5) Die Richtlinie (RL) 2004/37/EG legt einen bindenden Luftgrenzwert von 30 µg Blei/m³ fest, der gemäß § 7 Absatz 8 Nummer 2 der

Reason for revision: 1; 2; 3; 4; 5; 7; 8; 9; 10; 11; 12; 14; 15; 16

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GefStoffV einzuhalten ist. Dieser Wert ist nicht gesundheitsbasiert. Es besteht zudem keine Korrelation zwischen Luftmesswerten und Wirkungsdaten. Entsprechend besteht auch kein unmittelbarer Zusammenhang zwischen dem Luftgrenzwert und dem BGW.

- (6) Einatembare Fraktion; UF: 8 (II)
- (7) Einatembare Fraktion; UF: 2 (I)
- (8) Einatembare Fraktion; UF: 8 (II)
- (9) Alveolengängige Fraktion; UF: 8 (II)
- (10) Einatembare Fraktion; UF: 4 (II)
- (11) Einatembare Fraktion; UF: 8 (II)
- (12) Alveolengängige Fraktion; UF: I(4)
- (13) Einatembare Fraktion; UF: I(2); Zinkchlorid: Kurzzeitkategorie I(1)

Austria

Aluminium (als Metall) Aluminiumoxid und Aluminiumhydroxid	Tagesmittelwert (MAK)	10 mg/m ³ (1)
	Tagesmittelwert (MAK)	5 mg/m ³ (2)
	Kurzzeitwert 60(Miw) 2x	10 mg/m ³ (2)
	Kurzzeitwert 60(Miw) 2x	20 mg/m ³ (1)
Aluminiumoxid-Rauch	Tagesmittelwert (MAK)	5 mg/m ³ (2)
	Kurzzeitwert 60(Miw) 2x (MAK)	10 mg/m ³ (2)
Cadmium und seine Verbindungen <i>shall apply from 2027-07-12</i>	Kurzzeitwert 15(Miw) 4x (TRK)	0.004 mg/m ³ (3)
	Tagesmittelwert (TRK)	0.001 mg/m ³ (3)
Cadmium und seine Verbindungen <i>shall apply until 2027-07-11</i>	Kurzzeitwert 15(Miw) 4x (TRK)	0.016 mg/m ³ (3)
	Tagesmittelwert (TRK)	0.004 mg/m ³ (3)
Calciumdihydroxid	Tagesmittelwert (MAK)	1 mg/m ³ (1)
	Kurzzeitwert 5(Mow) 8x (MAK)	4 mg/m ³ (1)
Calciumsulfat	Tagesmittelwert (MAK)	5 mg/m ³ (2)
	Kurzzeitwert 60(Miw) 2x (MAK)	10 mg/m ³ (2)
Kupfer und seine Verbindungen(als Rauch)	Tagesmittelwert (MAK)	0.1 mg/m ³ (4)
	Kurzzeitwert 15(Miw) 4x (MAK)	0.4 mg/m ³ (4)
Kupfer und seine Verbindungen	Tagesmittelwert (MAK)	1 mg/m ³ (5)
	Kurzzeitwert 15(Miw) 4x (MAK)	4 mg/m ³ (5)
Mangan und seine anorganischen Verbindungen einschließlich Trimangantetroxid	Tagesmittelwert (MAK)	0.05 mg/m ³ (6)
	Tagesmittelwert (MAK)	0.2 mg/m ³ (7)
	Kurzzeitwert 15(Miw) 4x (MAK)	0.4 mg/m ³ (6)
	Kurzzeitwert 15(Miw) 4x (MAK)	1.6 mg/m ³ (7)
Silber	Tagesmittelwert (MAK)	0.1 mg/m ³ (1)
	Kurzzeitwert 30(Miw) 1x (MAK)	0.1 mg/m ³ (1)

- (1) Einatembare Fraktion
- (2) Alveolengängige Fraktion
- (3) Einatembare Fraktion; als Cd berechnet
- (4) Alveolengängige Fraktion; als Cu berechnet
- (5) Einatembare Fraktion; als Cu berechnet
- (6) Alveolengängige Fraktion; als Mn berechnet
- (7) Einatembare Fraktion; als Mn berechnet

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UK

Aluminium metal	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	10 mg/m ³ (1)
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m ³ (2)
Aluminium oxides	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	10 mg/m ³ (1)
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m ³ (2)
Arsenic and compounds except arsine (as As)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.1 mg/m ³
Barium sulphate	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	10 mg/m ³ (1)
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m ³ (2)
Cadmium compounds except cadmium oxide fume, cadmium sulphide and cadmium sulphide pigments (as Cd)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.025 mg/m ³
Calcium hydroxide	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1 mg/m ³ (3)
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	5 mg/m ³ (4)
	Short time value (Workplace exposure limit (EH40/2005))	4 mg/m ³ (3)
Copper and compounds: dusts and mists (as Cu)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1 mg/m ³
	Short time value (Workplace exposure limit (EH40/2005))	2 mg/m ³
Iron salts (as Fe)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1 mg/m ³
	Short time value (Workplace exposure limit (EH40/2005))	2 mg/m ³
Lead other than lead alkyls	Time-weighted average exposure limit 8 h (Occupational exposure limit (Control of lead at work))	0.15 mg/m ³
Manganese and its inorganic compounds (as Mn)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.05 mg/m ³ (3)
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.2 mg/m ³ (4)
Silica, amorphous	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	2.4 mg/m ³ (2)
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	6 mg/m ³ (1)
Silver, metallic	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.1 mg/m ³
Tin compounds, inorganic, except SnH ₄ (as Sn)	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	2 mg/m ³
	Short time value (Workplace exposure limit (EH40/2005))	4 mg/m ³

(1) Inhalable dust

(2) Respirable dust

(3) Respirable fraction

(4) Inhalable fraction

USA (TLV-ACGIH)

Aluminium metal and insoluble compounds	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	1 mg/m ³ (1)
Arsenic and inorganic compounds, as As	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.01 mg/m ³
Barium sulfate	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	5 mg/m ³ (2)
Cadmium and compounds, as Cd	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.002 mg/m ³ (1)
	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.01 mg/m ³
Calcium hydroxide	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	5 mg/m ³
Calcium sulfate	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	10 mg/m ³ (3)
Lead and inorganic compounds, as Pb	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.05 mg/m ³
Manganese, elemental and inorganic compounds, as Mn	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.02 mg/m ³ (1)
	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.1 mg/m ³ (3)
Silver, and compounds: Metal, dust and fume	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.1 mg/m ³
Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	2 mg/m ³ (3)

(1) (R): Respirable fraction

(2) I,E: Inhalable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica

(3) (I): Inhalable fraction

b) National biological limit values

If limit values are applicable and available these will be listed below.

Belgium

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Plomb et ses composés inorganiques (Lood)	sang	30 µg/100ml	A partir du 1er janvier 2029, la valeur limite biologique contraignante est de 15 µg Pb/100 ml de sang. Il est recommandé que la plombémie des travailleuses en âge de procréer ne dépasse pas la valeur biologique de référence de 4,5 µg Pb/100 ml de sang.
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Germany

Blei, anorganischen Bleiverbindungen und bleihaltigen Gemischen (Blei)	Vollblut: keine beschränkung im fließgleichgewicht	150 µg/l	Dieser Wert gilt nicht für Beschäftigte im gebärfähigen Alter. Die Regelungen des Mutterschutzgesetzes bleiben unberührt. Beschäftigungsbeschränkungen sind in Abschnitt 7, Verwendungsverbote in Abschnitt 6 aufgeführt.
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USA (BEI-ACGIH)

Cadmium and inorganic compounds (Cadmium)	Blood: not critical	5 µg/L	Background
Cadmium and inorganic compounds (Cadmium)	Urine: not critical	5 µg/g creatinine	Background
Lead and inorganic compounds (Lead)	Blood: not critical	200 µg/L	Persons applying this BEI® are encouraged to counsel female workers of child-bearing age about the risk of delivering a child with a PbB over the current CDC reference value.

c) National acceptable and tolerable concentrations

Germany

Arsenverbindungen, als Carc. 1A, Carc. 1B eingestuft	Die Konzentrationen beziehen sich auf den Elementgehalt des entsprechenden Metalls	
	Akzeptanzkonzentration (TRGS 910)	0.83 µg/m³ (1)
	Toleranzkonzentration (Risiko 4:1.000) (TRGS 910)	8.3 µg/m³ (2)
Cadmium und CdVerbindungen, als Carc.1A, Carc.1B eingestuft	Die Konzentrationen beziehen sich auf den Elementgehalt des entsprechenden Metalls	
	Die Toleranzkonzentration wurde gemäß Nummer 3.2.1 aufgrund einer nicht krebserzeugenden Wirkung festgelegt. Bei Überschreitung gelten die gleichen Maßnahmen wie bei Überschreitung des AGW.	
	Für Cadmium und Cadmium-Verbindungen ist ein AGW in der E-Staubfraktion fest-gelegt, siehe hierzu TRGS 900.	
	Akzeptanzkonzentration (TRGS 910)	0.9 µg/m³ (3)
	Toleranzkonzentration (Risiko 4:1.000) (TRGS 910)	2 µg/m³ (4)

(1) Einatembare Fraktion; Akzeptanzkonzentration assoziiert mit Risiko 4:10.000

(2) Einatembare Fraktion; UF: 8

(3) Alveolengängige Fraktion; Akzeptanzkonzentration assoziiert mit Risiko 4:10.000

(4) Alveolengängige Fraktion; UF: 8

Arsenverbindungen als Carc. 1A, Carc. 1B eingestuft	Akzeptanzkonzentration (TRGS 910)	14 µg/L Parameter: S Arsen(III), Arsen(V), Monomethylarsonsäure und Dimethylarsinsäure Untersuchungsmaterial: Urin	Expositionsende bzw. Schichtende Bei Anzeichen für eine erhöhte Exposition muss eine ernährungsbedingte Beeinflussung ausgeschlossen werden und entsprechend eine Arsen-Speziesanalytik erfolgen, insbesondere mit Blick auf den DMA-Anteil. In diesem Fall ist als Bewertungsgrundlage die aktuelle EKA der MAK-BAT-Kommission heranzuziehen: Parameter: S Arsen(+III), Arsen(+V), Monomethylarsonsäure, Äquivalenzwerte 11 µg/L bzw. 2,5 µg/L, Untersuchungsmaterial U, Probenahmezeitpunkt b.
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Arsenverbindungen als Carc. 1A, Carc. 1B eingestuft	Toleranzkonzentration (Risiko 4:1.000) (TRGS 910)	40 µg/L Parameter: S Arsen(III), Arsen(V), Monomethylarsonsäure und Dimethylarsinsäure Untersuchungsmaterial: Urin	Expositionsende bzw. Schichtende <i>Bei Anzeichen für eine erhöhte Exposition muss eine ernährungsbedingte Beeinflussung ausgeschlossen werden und entsprechend eine Arsen-Speziesanalytik erfolgen, insbesondere mit Blick auf den DMA-Anteil. In diesem Fall ist als Bewertungsgrundlage die aktuelle EKA der MAK-BAT-Kommission heranzuziehen:</i> Parameter: S Arsen(+III), Arsen(+V), Monomethylarsonsäure, Äquivalenzwerte 11 µg/L bzw. 2,5 µg/L, Untersuchungsmaterial U, Probenahmezeitpunkt b.
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8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 Threshold values

PNEC

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Compartments	Value	Remark
Fresh water	3.1 µg/l	
Marine water	3.5 µg/l	
STP	100 µg/l	
Fresh water sediment	174 mg/kg sediment dw	
Marine water sediment	164 mg/kg sediment dw	
Soil	212 mg/kg soil dw	
Oral	10.9 mg/kg food	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

a) Respiratory protection:

Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus (EN 136 + EN 137).

b) Hand protection:

Protective gloves against chemicals (EN 374), Gloves always need to be selected in consultation with the supplier after analysing the specific operating conditions. The glove thickness and breakthrough time can vary per manufacturer, type and model of glove. The technical information of the glove manufacturer always needs to be consulted to ensure the most suitable glove is chosen for each task. The table below serves as an indication and is in compliance with norm EN-420 and EN-374 and other norms, that can be concluded from the risk analysis of the specific operation conditions.

Materials	Measured breakthrough time	Thickness	Protection index	Remark
PVC	> 30 minutes	1.5 mm	Class 2	
butyl rubber	> 120 minutes	0.5 mm	Class 4	
viton	> 480 minutes	0.4 mm	Class 6	

c) Eye protection:

Face shield (EN ISO 16321). In case of dust production: protective goggles (EN ISO 16321).

d) Skin protection:

Dustproof clothing (EN 13982).

8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

NYRSTAR LEACH PRODUCT

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Solid
Colour	Brown
Odour	Odourless
Odour threshold	Not applicable
Melting point	Not applicable (decomposes) ; EU Method A.1
Boiling point	Not applicable (decomposes)
Flammability	Not classified as flammable
Explosion limits	Not applicable
Flash point	Not applicable (solid)
Auto-ignition temperature	Not applicable
Decomposition temperature	700 °C ; EU Method A.1
pH	< 2 ; ALP
	< 2 ; BLP
	5 ; BuLP
Kinematic viscosity	Not applicable (solid)
Dynamic viscosity	Not applicable (solid)
Solubility	Water ; < 0.1 g/100 ml ; OECD 105
Log Kow	Not applicable
Vapour pressure	Not applicable (solid)
Absolute density	3070 kg/m ³
	1800 kg/m ³ ; ALP
	1800 kg/m ³ ; BLP
	800 kg/m ³ - 1200 kg/m ³ ; BuLP
Relative density	3.07 ; 20 °C
	1.8 ; ALP
	1.8 ; BLP
	0.8 - 1.2 ; BuLP
Relative vapour density	Not applicable (solid)
Particle size	D50 ; < 20 µm

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Acid reaction. Not corrosive to metals.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Precautionary measures

Avoid raising dust. Keep away from naked flames/heat.

10.5. Incompatible materials

Oxidizing agents, (strong) acids.

10.6. Hazardous decomposition products

On heating (>1000°C): release of toxic and corrosive gases/vapours (lead oxides, sulphur oxides, zinc oxides).

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

11.1.1 Test results

Acute toxicity

NYRSTAR LEACH PRODUCT

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	ATE		300 mg/kg bw - 2000 mg/kg bw			Calculated value	
Dermal	ATE		> 2000 mg/kg bw			Calculated value	

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Inhalation	ATE		1 mg/l - 5 mg/l			Calculated value	
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Conclusion

Harmful if swallowed.
Harmful if inhaled.
Not classified as acute toxic in contact with skin

Corrosion/irritation

NYRSTAR LEACH PRODUCT

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage					Calculated value	
Skin	Irritating					Calculated value	

Conclusion

Causes skin irritation.
Causes serious eye damage.
Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

NYRSTAR LEACH PRODUCT

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
In vitro	Not sensitizing					Calculated value	
Inhalation	Not sensitizing					Calculated value	

Conclusion

Not classified as sensitizing for skin
Not classified as sensitizing for inhalation

Specific target organ toxicity

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Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral			STOT RE cat.1				Calculated value	

Conclusion

Causes damage to organs (blood circulation, central nervous system, kidneys) through prolonged or repeated exposure if swallowed.
Not classified as sub-chronically toxic in contact with skin
Not classified as sub-chronically toxic if inhaled

Mutagenicity (in vitro)

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No (test)data on the mixture available

Mutagenicity (in vivo)

NYRSTAR LEACH PRODUCT

No (test)data on the mixture available

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

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Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Inhalation			category 1A				Calculated value	

Conclusion

May cause cancer by inhalation.

Reproductive toxicity

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Category	Parameter	Method	Value	Exposure time	Species	Effect/Organ	Value determination	Remark
Developmental toxicity (Oral)			category 1A				Calculated value	
Effects on fertility (Oral)			category 2				Calculated value	

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Effects on lactation			May cause harm to breast-fed children.				Literature study	
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Conclusion

May cause harm to breast-fed children.
Suspected of damaging fertility if swallowed.
May damage the unborn child if swallowed.

Aspiration hazard

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Not classified for aspiration toxicity

Toxicity other effects

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No (test)data on the mixture available

Chronic effects from short and long-term exposure

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Gastrointestinal complaints. Abdominal pain. Nausea. Loss of appetite. Loss of weight. Feeling of weakness. Paleness. Metal taste. Discolouration of the gums. Affection of the renal tissue. Change in urine output. Change in urine composition. Headache. Dizziness. Impairment of the nervous system. Brain affection. Excited/restless. Behavioural disturbances. Emotional instability. Sleeplessness. Impaired memory. Mental confusion. Delusions. Myasthenia. Coordination disorders. Disturbed motor response. Disturbed tactile sensibility. Tremor. Cramps/uncontrolled muscular contractions. Paralysis. Change in the haemogramme/blood composition. Possible premature birth.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

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	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	EC50		≤ 1 mg/l	96 h	Pisces			Estimated value
Acute toxicity crustacea	EC50		≤ 1 mg/l	48 h	Invertebrata			Estimated value
Toxicity algae and other aquatic plants	EC50		< 1 mg/l	72 h	Algae			Estimated value
Long-term toxicity fish	NOEC		≤ 0.1 mg/l	28 day(s)	Pisces			Estimated value
Long-term toxicity aquatic crustacea	NOEC		≤ 0.1 mg/l	21 day(s)	Invertebrata			Estimated value

Conclusion

Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Water

Biodegradability: not applicable

12.3. Bioaccumulative potential

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Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable			

Conclusion

Contains bioaccumulative component(s)

12.4. Mobility in soil

No (test)data on mobility of the component(s) available

12.5. Results of PBT and vPvB assessment

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

PMT conclusion

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The criteria of PMT and vPvM as listed in Annex I of Regulation (EC) No 1272/2008 do not apply to inorganic substances

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Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Water ecotoxicity pH

pH shift

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

01 03 07* (wastes from physical and chemical processing of metalliferous minerals: other wastes containing hazardous substances from physical and chemical processing of metalliferous minerals). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste.

Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Do not discharge into surface water (Directive 2000/60/EC, Council Decision 2455/2001/EC).

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number or ID number

UN number	3077
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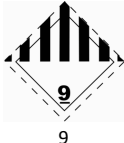
14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, solid, n.o.s. (lead(II) sulphate)
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14.3. Transport hazard class(es)

Hazard identification number	90
Class	9
Classification code	M7

14.4. Packing group

Packing group	III
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	
--	---

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg (gross mass).

Rail (RID)

14.1. UN number or ID number

UN number	3077
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NYRSTAR LEACH PRODUCT

14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, solid, n.o.s. (lead(II) sulphate)
----------------------	--

14.3. Transport hazard class(es)

Hazard identification number	90
Class	9
Classification code	M7

14.4. Packing group

Packing group	III
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	
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14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg (gross mass).

Inland waterways (ADN)

14.1. UN number or ID number

UN number/ID number	3077
---------------------	------

14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, solid, n.o.s. (lead(II) sulphate)
----------------------	--

14.3. Transport hazard class(es)

Class	9
Classification code	M7

14.4. Packing group

Packing group	III
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	
--	---

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg (gross mass).

Sea (IMDG/IMSBC)

14.1. UN number or ID number

UN number	3077
-----------	------

14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, solid, n.o.s. (lead(II) sulphate)
----------------------	--

14.3. Transport hazard class(es)

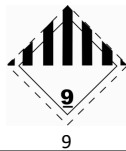
Class	9
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14.4. Packing group

Packing group	III
---------------	-----

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Labels



14.5. Environmental hazards

Marine pollutant

P

Environmentally hazardous substance mark



14.6. Special precautions for user

Special provisions

274

Special provisions

335

Special provisions

375

Special provisions

966

Special provisions

967

Special provisions

969

Limited quantities

Combination packagings: not more than 5 kg per inner packaging for solids. A package shall not weigh more than 30 kg (gross mass).

14.7. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78

Not applicable

MARPOL Annex V

In accordance with the International Maritime Organization's (IMO) amendments to MARPOL Annex V, with effect from 1 January 2013 onwards, this material is classified as harmful to the marine environment

IMSBC-code

Cargo group A and B – MHB (TX, CR)

Bulk Cargo Shipping Name

LEACH RESIDUE CONTAINING LEAD

Air (ICAO-TI/IATA-DGR)

14.1. UN number or ID number

UN number/ID number

3077

14.2. UN proper shipping name

Proper shipping name

environmentally hazardous substance, solid, n.o.s. (lead(II) sulphate)

14.3. Transport hazard class(es)

Class

9

14.4. Packing group

Packing group

III

Labels



14.5. Environmental hazards

Environmentally hazardous substance mark



14.6. Special precautions for user

Special provisions

A158

Special provisions

A179

Special provisions

A197

Special provisions

A215

Special provisions

A97

Passenger and cargo transport

Limited quantities: maximum net quantity per packaging

30 kg G

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
	Not applicable (inorganic)

Reason for revision: 1; 2; 3; 4; 5; 7; 8; 9; 10; 11; 12; 14; 15; 16

Publication date: 2010-02-10

Date of revision: 2026-10-04

Revision number: 0900

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Directive 2012/18/EU (Seveso III)

Threshold values under normal circumstances

Substance or category	Low tier (tonnes)	Top tier (tonnes)	Group	For this substance or mixture the summation rule has to be applied for:
E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1	100	200	None	Eco-toxicity

Prior informed consent (PIC)

Contains component(s) listed in Annex I of Regulation (EU) No 649/2012: Part 1 - List of chemicals subject to export notification procedure
European drinking water standards (98/83/EC and 2020/2184)

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Parameter	Parametric value	Note	Reference
Lead	10 µg/l		Listed in Annex I, Part D, of Directive (EU) 2020/2184 on the quality of water intended for human consumption.

REACH Candidate list

Contains component(s) included in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No 1907/2006)

REACH Annex XIV - Authorisation

Does not contain component(s) included in Annex XIV of Regulation (EC) No 1907/2006: list of substances subject to authorisation

REACH Annex XVII - Restriction

Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· Leach residues, zinc ore, lead-contg.	Substances which are classified as reproductive toxicant category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 5 or Appendix 6, respectively.	Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30: 1. Shall not be placed on the market, or used, — as substances, — as constituents of other substances, or, — in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: — either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or, — the relevant generic concentration limit specified in Part 3 of Annex I of Regulation (EC) No 1272/2008. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows: "Restricted to professional users". 2. By way of derogation, paragraph 1 shall not apply to: (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC; (b) cosmetic products as defined by Directive 76/768/EEC; (c) the following fuels and oil products: — motor fuels which are covered by Directive 98/70/EC, — mineral oil products intended for use as fuel in mobile or fixed combustion plants, — fuels sold in closed systems (e.g. liquid gas bottles); (d) artists' paints covered by Regulation (EC) No 1272/2008; (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date; (f) devices covered by Regulation (EU) 2017/745.
· Leach residues, zinc ore, lead-contg.	Substances falling within one or more of the following points: (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008: — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2 — serious eye damage category 1 or eye irritant category 2 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

Reason for revision: 1; 2; 3; 4; 5; 7; 8; 9; 10; 11; 12; 14; 15; 16

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(c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex.
The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.

National legislation Belgium

Agents cancérigènes, mutagènes et reprotoxiques et aux agents possédant des propriétés perturbant le système endocrinien (Code du bien-être au travail, Livre VI, titre 2)

cancérigène catégorie 1A ou 1B selon CLP, n.s.a.

reprotoxique catégorie 1A ou 1B selon CLP, n.s.a.

National legislation The Netherlands

Waterbezwaarlijkheid

Z (1); Algemene Beoordelingsmethodiek (ABM)

National legislation France

No data available

National legislation Germany

Lagerklasse (TRGS510)

6.1 D: Nichtbrennbare, akut toxische Kat. 3 / giftige oder chronisch wirkende Gefahrstoffe

WGK

3; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

National legislation Austria

No data available

National legislation United Kingdom

No data available

Other relevant data

No data available

15.2. Chemical safety assessment

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 3:

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H350i May cause cancer by inhalation.
H360Df May damage the unborn child. Suspected of damaging fertility.
H360Df May damage the unborn child if swallowed. Suspected of damaging fertility if swallowed.
H360FD May damage fertility. May damage the unborn child.
H362 May cause harm to breast-fed children.
H372 Causes damage to organs (blood circulation, central nervous system, kidneys) through prolonged or repeated exposure if swallowed.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs (brain, central nervous system) through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs (brain, central nervous system) through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs (nervous system) through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

Reason for revision: 1; 2; 3; 4; 5; 7; 8; 9; 10; 11; 12; 14; 15; 16

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(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
BEI	Biological Exposure Indices
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC10	Effect Concentration 10 %
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
GLP	Good Laboratory Practice
HS	Harmonized System of Nomenclature, a standardized international system for classifying goods under the Harmonized System Convention, as drawn up by the World Customs Organization Secretariat
LC0	Lethal Concentration 0 %
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
LOAEC/LOAEL	Lowest Observed Adverse Effect Concentration/Lowest Observed Adverse Effect Level
NOAEC/NOAEL	No Observed Adverse Effect Concentration/No Observed Adverse Effect Level
NOEC/NOEL	No Observed Effect Concentration/No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.