Lead chromate molybdate sulfate red

This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.

Substance identity

EC / List no.: 235-759-9

CAS no.: 12656-85-8

Mol. formula: CrMoO12Pb3S

Hazard classification & labelling

Danger! According to the **harmonised classification and labelling** (ATP01) approved by the European Union, this substance may cause cancer, may damage the unborn child and is suspected of damaging fertility, is very toxic to aquatic life, is very toxic to aquatic life with long lasting effects and may cause damage to organs through prolonged or repeated exposure.

Additionally, the classification provided by companies to ECHA in **REACH registrations** identifies that this substance may damage fertility or the unborn child, may cause an allergic skin reaction and may cause allergy or asthma symptoms or breathing difficulties if inhaled.

Properties of concern

C R Ss Sr

Regulatory activities

- Substance of very high concern (SVHC) and included in the candidate list for authorisation.
- Substance of very high concern requiring authorisation before it is used (Annex XIV of REACH).

About this substance

This substance is manufactured and/or imported in the European Economic Area in 1 000 - 10 000 tonnes per year.

This substance is used in articles, by professional workers (widespread uses), in formulation or re-packing, at industrial sites and in manufacturing.

Consumer Uses

ECHA has no public registered data indicating whether or in which chemical products the substance might be used. ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment.

Article service life

ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment. ECHA has no public registered data indicating whether or into which articles the substance might have been processed.

Widespread uses by professional workers

ECHA has no public registered data indicating whether or in which chemical products the substance might be used. ECHA has no public registered data on the types of manufacture using this substance. ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment.

Formulation or re-packing

ECHA has no public registered data indicating whether or in which chemical products the substance might be used. ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment.

Uses at industrial sites

ECHA has no public registered data indicating whether or in which chemical products the substance might be used. ECHA has no public registered data on the types of manufacture using this substance. ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment.

Manufacture

ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment.

The InfoCard summarises the non-confidential data on substances as held in the databases of the European Chemicals Agency (ECHA), including data provided by third parties. The InfoCard is automatically generated. Information requirements under different legislative frameworks may therefore not be up-to-date or complete. Substance manufacturers and importers are responsible for consulting official publications. This InfoCard is covered by the ECHA Legal Disclaimer.

ECHA EUROPEAN CHEMICALS AGENCY

about INFOCARD - Last updated: 02/06/2017

The Brief Profile summarizes the non-confidential data on substances as it is held in the databases of the European Chemicals Agency (ECHA), including data provided by third parties. The Brief Profile is automatically generated; note that it does not currently distinguish between harmonised classification and minimum classification; information requirements under different legislative frameworks may therefore not be fully up to date or complete. For accuracy reasons, substance manufacturers and imports have the responsibility to consult official sources, e.g. the electronic edition of the Official Journal of the European Union.
This Brief Profile is covered by the ECHA Legal Notice.

Lead chromate molybdate sulfate red

This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.

Brief Profile - Last updated: 12/01/2018

Substance Description

Substance identity

EC / List name: Lead chromate molybdate sulfate red

IUPAC name: tris(λ^2-lead(2+) ion) dioxochromiumbis(olate) dioxomolybdenumbis(olate) sulfate

Other names

EC / List no.: 235-759-9

CAS no.: 12656-85-8

Index number: 082-010-00-5

Molecular formula: CrMoO12Pb3S

SMILES: [Pb++].[Pb++].[Pb++].[O-]S([O-])(=O)=O.[O-][Cr]([O-])(=O)=O.[O-][Mo]([O-])(=O)=O

InChI: InChI=1S/Cr.Mo.H2O4S.8O.3Pb/c;;1-5(2,3)4;;;;;;;;;;/h;;(H2,1,2,3,4);;;;;;;;;;/q;;;;;;;4*-1;3*+2/p-2 AuxInfo=1/1/N:7;14;3,4,5,6,2;8;10;15;16;9;11;17;18;1 2;13/E;;;(1,2,3,4);;;;;;;;;;;/CRV;;;5.6;;;;;;;;;;;/rA:18Pb+2SOOO-O-CrOO-OO-Pb+2Pb+2MoOOO-O-/rB:;d2;d2;s2;s2;;d7;s7;d7;s7;;;;d14;d14;s14;s14;/rC:;5.28,0,0;3.74,0,0;6.82,0,0;5.28,-1.54,0;5.28,1.54,0;12.32,0,0;12.32,1.54,0;13.86,0,0;12.32,-1.54,0;10.78,0,0;0,-5.9537,0;2.09,-5.9537,0;7.3837,-5.9537,0;8.1537,-4.62,0;6.6137,-7.2874,0;8.7174,-6.7237,0;6.05,-5.1837,0;

Type of substance: Mono constituent substance

Origin: Inorganic

Registered compositions: 6

Of which contain: 0 impurities relevant for classification

0 additives relevant for classification

Substance Listed: EINECS (European INventory of Existing Commercial chemical Substances) List

Hazard classification & labelling

Danger! According to the **harmonised classification and labelling** (ATP01) approved by the European Union, this substance may cause cancer, may damage the unborn child and is suspected of damaging fertility, is very toxic to aquatic life, is very toxic to aquatic life with long lasting effects and may cause damage to organs through prolonged or repeated exposure.

Additionally, the classification provided by companies to ECHA in **REACH registrations** identifies that this substance may damage fertility or the unborn child, may cause an allergic skin reaction and may cause allergy or asthma symptoms or breathing difficulties if inhaled.

Breakdown of all 330 C&L notifications submitted to ECHA

Repr. 1A	H360Df	✓
Aquatic Chronic 1	H410	✓
Carc. 1B	H350	✓
Aquatic Acute 1	H400	✓
STOT RE 2	H373	✓
Not Classified		
Carc. 2	H351	
Skin Sens. 1	H317	
Resp. Sens. 1	H334	

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

✓ Harmonised Classification
REACH registration dossiers notifications
CLP notifications

Properties of concern

C R Ss Sr

Regulatory activities

Registration, Evaluation, Authorisation & Restriction of Chemicals (REACH)

Registration

Pre-registration: Substance pre-registered under REACH.

Registration: This substance has 7 active registrations under REACH, 1 Joint Submission(s) and 0 Individual Submission(s).

Evaluation

Dossier Evaluation:

Substance Evaluation:

Authorisation

Candidate List: Substance of very high concern (SVHC) and included in the candidate list for authorisation.

Annex XIV (Authorisation List): Substance of very high concern requiring authorisation before it is used (Annex XIV of REACH).

Restriction

Annex XVII (Restriction List):

Classification Labelling & Packaging (CLP)

Harmonised C&L: A European Union Harmonised Classification & Labelling has been assigned to this substance.

Notification: Classification & Labelling has been notified by industry to ECHA for this substance.

Biocidal Products Regulation (BPR)

Active Substance:

Biocidal Products:

Prior Informed Consent (PIC)

Annex I:

Annex V:

About this substance

General

This substance is manufactured and/or imported in the European Economic Area in 1 000 - 10 000 tonnes per year.

This substance is used in articles, by professional workers (widespread uses), in formulation or re-packing, at industrial sites and in manufacturing.

Consumer Uses

ECHA has no public registered data indicating whether or in which chemical products the substance might be used.

ECHA has no public registered data on the routes by which this substance is most likely to be released to the environment.

Article service life

This substance is used in the following activities or processes at workplace: production of mixtures or articles by tabletting, compression, extrusion or pelletisation, the low energy manipulation of substances bound in materials or articles, high energy work-up of substances bound in materials or articles (e.g. hot rolling/forming, grinding, mechanical cutting, drilling or sanding) and hot work operations with metals (e.g. welding, soldering, gouging, brazing, flame cutting).

Release to the environment of this substance can occur from industrial use: formulation of mixtures, formulation in materials, in the production of articles, industrial abrasion processing with low release rate (e.g. cutting of textile, cutting, machining or grinding of metal) and industrial abrasion processing with high release rate (e.g. sanding operations or paint stripping by shot-blasting). Other release to the environment of this substance is likely to occur from: outdoor use in long-life materials with low release rate (e.g. metal, wooden and plastic construction and building materials), indoor use in long-life materials with low release rate (e.g. flooring, furniture, toys, construction materials, curtains, foot-wear, leather products, paper and cardboard products, electronic equipment), outdoor use in long-life materials with high release rate (e.g. tyres, treated wooden products, treated textile and fabric, brake pads in trucks or cars, sanding of buildings (bridges, facades) or vehicles (ships)) and indoor use in long-life materials with high release rate (e.g. release from fabrics, textiles during washing, removal of indoor paints).

This substance can be found in complex articles, with no release intended: vehicles and machinery, mechanical appliances and electrical/electronic products (e.g. computers, cameras, lamps, refrigerators, washing machines). This substance can be found in products with material based on: plastic (e.g. food packaging and storage, toys, mobile phones), stone, plaster, cement, glass or ceramic (e.g. dishes, pots/pans, food storage containers, construction and isolation material), rubber (e.g. tyres, shoes, toys), wood (e.g. floors, furniture, toys) and metal (e.g. cutlery, pots, toys, jewellery).

Widespread uses by professional workers

This substance is used in the following products: coating products, polymers and textile treatment products and dyes.

This substance is used in the following areas: building & construction work. This substance is used for the manufacture of: plastic products.

This substance is used in the following activities or processes at workplace: transfer of substance into small containers, transfer of chemicals, mixing in open batch processes, industrial spraying, production of mixtures or articles by tabletting, compression, extrusion or pelletisation, non-industrial spraying, calendering operations, roller or brushing applications, treatment of articles by dipping and pouring, hand mixing with intimate contact only with personal protective equipment available, high energy work-up of substances bound in materials or articles (e.g. hot rolling/forming, grinding, mechanical cutting, drilling or sanding), the low energy manipulation of substances bound in materials or articles, closed, continuous processes with occasional controlled exposure and closed batch processing in synthesis or formulation.

Release to the environment of this substance can occur from industrial use: in the production of articles, formulation of mixtures and formulation in materials. Other release to the environment of this substance is likely to occur from: indoor use, outdoor use in long-life materials with low release rate (e.g. metal, wooden and plastic construction and building materials), indoor use in long-life materials with low release rate (e.g. flooring, furniture, toys, construction materials, curtains, foot-wear, leather products, paper and cardboard products, electronic equipment) and outdoor use resulting in inclusion into or onto a materials (e.g. binding agent in paints and coatings or adhesives).

Formulation or re-packing

This substance is used in the following products: polymers, coating products and textile treatment products and dyes.

This substance is used in the following activities or processes at workplace: transfer of chemicals, transfer of substance into small containers, mixing in open batch processes, production of mixtures or articles by tabletting, compression, extrusion or pelletisation, laboratory work, closed, continuous processes with occasional controlled exposure, closed batch processing in synthesis or formulation, roller or brushing applications, the low energy manipulation of substances bound in materials or articles, closed processes with no likelihood of exposure, industrial spraying and hand mixing with intimate contact only with personal protective equipment available.

Release to the environment of this substance can occur from industrial use: formulation in materials and formulation of mixtures.

Uses at industrial sites

This substance is used in the following products: coating products, polymers and textile treatment products and dyes.

This substance is used in the following areas: building & construction work. This substance is used for the manufacture of: plastic products, fabricated metal products and machinery and vehicles.

This substance is used in the following activities or processes at workplace: industrial spraying, non-industrial spraying, calendering operations, roller or brushing applications, treatment of articles by dipping and pouring, hand mixing with intimate contact only with personal protective equipment available, transfer of substance into small containers, mixing in open batch processes, production of mixtures or articles by tabletting, compression, extrusion or pelletisation, high energy work-up of substances bound in materials or articles (e.g. hot rolling/forming, grinding, mechanical cutting, drilling or sanding), transfer of chemicals, closed batch processing in synthesis or formulation, the low energy manipulation of substances bound in materials or articles, closed, continuous processes with occasional controlled exposure and laboratory work.

Release to the environment of this substance can occur from industrial use: in the production of articles. Other release to the environment of this substance is likely to occur from: indoor use, outdoor use in long-life materials with low release rate (e.g. metal, wooden and plastic construction and building materials), indoor use in long-life materials with low release rate (e.g. flooring, furniture, toys, construction materials, curtains, foot-wear, leather products, paper and cardboard products, electronic equipment) and outdoor use resulting in inclusion into or onto a materials (e.g. binding agent in paints and coatings or adhesives).

Manufacture

This substance is used in the following activities or processes at workplace: closed processes with no likelihood of exposure, closed, continuous processes with occasional controlled exposure, closed batch processing in synthesis or formulation, transfer of chemicals at dedicated facilities, transfer of substance into small containers, potentially closed industrial processing with minerals/metals at elevated temperature (e.g. smelters, furnaces, refineries, coke ovens), high energy work-up of substances bound in materials or articles (e.g. hot rolling/forming, grinding, mechanical cutting, drilling or sanding) and open transfer and processing with minerals/metals at elevated temperature.

Release to the environment of this substance can occur from industrial use: manufacturing of the substance.

Precautionary Measures and safe use

ECHA has no data from registration dossiers on the precautionary measures for using this substance. Guidance on the safe use of the substance provided by manufacturers and importers of this substance.

Registrants/suppliers

Active

- Bruchsaler Farbenfabrik GmbH & Co. KG, Talstrasse 37 76646 Bruchsal Baden-Württemberg Germany
- DCC Maastricht B.V. OR, Sortieweg 39 6219 NT Maastricht Netherlands
- Ferro Performance Pigments Spain,S.L., Vitoria 19 01400 Llodio Alaba Spain
- Habich GmbH, Weitenegg 5 A-3652 Leiben Austria
- Heubach GmbH, Heubachstr. 7 38685 Langelsheim Niedersachsen Germany
- Poliversal, Av. Fontes Pereira de Melo, 31, 2º A 1050-117 Lisboa Portugal
- REACh ChemAdvice GmbH, Am Marktplatz 5 65779 Kelkheim (Taunus) Germany

Inactive

- BASF Pigment GmbH, Carl-Bosch Str. 38 67056 Ludwigshafen am Rhein Rheinland-Pfalz Germany

Other names

IUPAC names

- -
- C.I. Pigment Red 104
- Lead Chromate Molybdate Sulfate Red
- Lead Chromate Molybdate Sulfate Red 12656-85-5
- lead chromate molybdate sulfate red; C.I. Pigment Red 104; [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.]
- lead chromate molybdate sulphate red
- LEAD-CHROMATE-MOLYBDATE-SULFATE-RED
- Pigment Red 104
- tris(λ^2-lead(2+) ion) dioxochromiumbis(olate) dioxomolybdenumbis(olate) sulfate
- [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.]

Regulatory processes names

- C.I. Pigment Red 104 (This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.)
- Lead chromate molybdate sulfate red
- Lead chromate molybdate sulfate red (-)
- lead chromate molybdate sulfate red (This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.)
- Lead chromate molybdate sulphate red (C.I. Pigment Red 104) (-)
- [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.] (This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.)

Trade names

- Bleichromatmolybdatsulfatrot
- BRUFASOL 140 LSL
- BRUFASOL orange 120 LM
- BRUFASOL orange 130 M
- BRUFASOL orange 91S4 M
- BRUFASOL orange 91SJ M
- BRUFASOL orange SWM
- BRUFASOL red 150 LM
- BRUFASOL red 155 LSL
- BRUFASOL red 585 HS
- BRUFASOL red 93S5 M
- BRUFASOL rot 160 L
- BRUFASOL rot 94S6 M
- C.I. Pigment Red 104 (9CI)
- C.I.77605
- Chrome Vermilion
- DCC Krolor Orange KO 786
- DCC Krolor Orange KO 789
- DCC Krolor Orange KO 886
- DCC Krolor Orange KO 889
- DCC Krolor Orange KO 906
- DCC Orange 0900
- DCC Orange 0901
- DCC Orange 1605
- DCC Orange 1606
- DCC Orange 1607
- DCC Orange 1608
- DCC Orange 1610
- DCC Orange 1612
- DCC Orange 1613
- DCC Orange 1615
- DCC Orange 1622
- DCC Orange 1623
- DCC Orange 1624
- DCC Orange 1625
- DCC Orange 5606
- DCC Orange 5610
- DCC Orange 5612
- DCC Orange YE-937-LD
- DCC Orange YE-941-LD
- DCC Orange YE-998-LD
- Durominerał® Orange
- Dynaterm red 104
- HEUCOTRON T-Orange 8010
- HEUCOTRON T-Orange 8025
- Krolor Orange RKO 786D
- Lead chromate molybdate sulfate red
- Mineral Fire Red 5DDS
- Mineral Fire Red 5GGS
- Mineral Fire Red 5GS
- Molybdate Orange
- Molybdate Orange Y 786D
- Molybdate Orange YE 421D
- Molybdate Orange YE 698D
- Molybdate Red
- Molybdate Red AA 3
- Molybden Red
- Molybdenum orange
- Molybdenum Red
- Renol Molybdate Red RGS
- RW70
- RW71B
- RW71H
- RW72C
- RW72F
- RW72P
- RW73D
- RW73M
- Vynamon Scarlet BY
- Vynamon Scarlet Y

Other names

- C.I. Pigment Red 104

Scientific properties

Physical and chemical properties

This section provides physicochemical information compiled from all automatically processable data from REACH registration dossiers that is available to ECHA at the time of generation. The quality and correctness of the information remains the responsibility of the data submitter. The Agency thus cannot guarantee the correctness of the information displayed.

Appearance/physical state / colour

Study results: 2 studies submitted, 2 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

C Physical state at 20°C and 1013 hPa
Solid (100%) [2]

C Form
Powder (100%) [2]

C Odour
Odourless (100%) [2]

C Substance type
Inorganic (100%) [2]

Studies with data				
Key study	2			

Data waiving: no waivers

No data available

Melting/freezing point

Study results: 3 studies submitted, 1 study processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

R Melting / freezing point
800 °C [1]

Studies with data				
Key study				1
Supporting study				1

Data waiving: Other 1

No data available

Boiling point

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

No automatically processable data submitted

Studies with data

Data waiving: Other 2

No data available

Density

Study results: 6 studies submitted, 2 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

R Density
5.4 - 6.3 g/cm³ @ 20 °C [2]

Studies with data				
Key study	2			
Supporting study				4

Data waiving: no waivers

No data available

Vapour pressure

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

No automatically processable data submitted

Studies with data

Data waiving: Other 2

No data available

Partition coefficient

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

No automatically processable data submitted

Studies with data

Data waiving: Other 2

No data available

Water solubility

Study results: 6 studies submitted, 2 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

R Water solubility (mass/vol.)
3 - 500 µg/L @ 20 - 22 °C and pH 5 - 8 [8]

Studies with data				
Key study	2			
Supporting study	4			

Data waiving: no waivers

No data available

Solubility in organic solvents / fat solubility

Data not provided by the registrant

Surface tension

Study results: 3 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

No automatically processable data submitted

Studies with data

Data waiving: Other 3

No data available

Flash point

Study results: 3 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
					Sci. unjustified	2
					Other	1

⚠ No data available

Auto flammability

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
					Other	2

⚠ No data available

Flammability

Study results: 4 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
Supporting study	2				Sci. unjustified	2

⚠ No data available

Explosiveness

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
					Sci. unjustified	1
					Other	1

⚠ No data available

Oxidising

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
Key study	1				Other	1

⚠ No data available

Oxidation reduction potential

⚠ Data not provided by the registrant

pH

⚠ Data not provided by the registrant

Dissociation constant

Study results: 3 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
					Sci. unjustified	3

⚠ No data available

Viscosity

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

Studies with data					Data waiving	
					Not feasible	2

⚠ No data available

Environmental fate and pathways

This section provides environmental fate and pathways information compiled from all automatically processable data from REACH registration dossiers that is available to ECHA at the time of generation. The quality and correctness of the information remains the responsibility of the data submitter. The Agency thus cannot guarantee the correctness of the information displayed.

Phototransformation in air

⚠ Data not provided by the registrant

Hydrolysis

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

⚠ Study data not processed for brief profile

Studies with data					Data waiving	
					Sci. unjustified	2

⚠ No data available

Phototransformation in water — Data not provided by the registrant

Phototransformation in soil — Data not provided by the registrant

Biodegradation in water - screening tests

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

No automatically processable data submitted

Studies with data					Data waiving	
					Not feasible	2

No data available

Biodegradation in water & sediment - simulation tests — Data not provided by the registrant

Biodegradation in soil

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

Study data not processed for brief profile

Studies with data					Data waiving	
					Not feasible	2

No data available

Bioaccumulation: aquatic / sediment

Study results: 10 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

Study data not processed for brief profile

Studies with data					Data waiving
					no waivers
Key study				3	
Supporting study				4	
Other				3	

No data available

Bioaccumulation: terrestrial — Data not provided by the registrant

Adsorption/desorption

Study results: 8 studies submitted, 0 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

No automatically processable data submitted

Studies with data					Data waiving
					no waivers
Key study				4	
Other				4	

No data available

Henrys law constant (H) — Data not provided by the registrant

Distribution modelling — Data not provided by the registrant

Ecotoxicological information

This section provides ecotoxicological information compiled from all automatically processable data from REACH registration dossiers that is available to ECHA at the time of generation. The quality and correctness of the information remains the responsibility of the data submitter. The Agency thus cannot guarantee the correctness of the information displayed.

Predicted No-Effect Concentration (PNEC)

R Summaries

4 summaries submitted
4 summaries processed

The Predicted No-Effect Concentration (PNEC) value is the concentration of a substance below which adverse effects in the environment are not expected to occur. Please note that when more than one summary is provided, PNEC values may refer to constituents of the substance and not to the substance as a whole. More detailed information is available in the dossiers.

Hazard for Aquatic Organisms	
Freshwater	2.7 - 100 µg/L (4)
Intermittent releases (freshwater)	2.7 - 1 000 µg/L (4)
Marine water	270 - 10 000 ng/L (4)
Intermittent releases (marine water)	-
Sewage treatment plant (STP)	100 - 1 000 000 µg/L (4)
Sediment (freshwater)	700 - 174 000 µg/kg sediment dw (2)
Sediment (marine water)	700 - 17 400 µg/kg sediment dw (2)

Hazard for Air	
Air	No hazard identified (3)
Hazard for Terrestrial Organism	
Soil	35 - 166 000 µg/kg soil dw (2)
Hazard for Predators	
Secondary poisoning	500 - 17 000 µg/kg food (2)

Short-term toxicity to fish

Study results: 2 studies submitted, 2 studies processed

Type of Study provided

Studies with data				
Key study	2			

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
LC50 (4 days) 2.5 g/L [2]
NOEC (4 days) 1 g/L [2]

Long-term toxicity to fish

Study results: 3 studies submitted, 1 study processed

Type of Study provided

Studies with data				
Key study				3

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
NOEC (1.129 years) 1 - 3.95 mg/L [3]
NOEC (60 days) 1 mg/L [2]

Short-term toxicity to aquatic invertebrates

Study results: 2 studies submitted, 2 studies processed

Type of Study provided

Studies with data				
Key study	2			

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
EC50 (48 h) 100 mg/L [2]
EC0 (48 h) 100 mg/L [2]

Long-term toxicity to aquatic invertebrates

Study results: 3 studies submitted, 3 studies processed

Type of Study provided

Studies with data				
Key study				3

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
NOEC (21 days) 700 µg/L [1]
LC50 (21 days) 300 - 2 000 µg/L [4]

Toxicity to aquatic algae and cyanobacteria

Study results: 4 studies submitted, 2 studies processed

Type of Study provided

Studies with data				
Key study	2			
Supporting study	2			

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
EC50 (72 h) 100 mg/L [2]
NOEC (72 h) 1 - 100 mg/L [3]
EC10 (72 h) 6.89 mg/L [2]

Toxicity to aquatic plants other than algae

⚠ Data not provided by the registrant

Toxicity to microorganisms

Study results: 4 studies submitted, 4 studies processed

Type of Study provided

Studies with data				
Weight of evidence	4			

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
EC50 (30 min) 10 g/L [4]
EC10 (30 min) 390 - 6 390 mg/L [4]

Sediment toxicity

Study results: 4 studies submitted, 2 studies processed

Type of Study provided

Studies with data				
Key study				4

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

P/R Results
LC50 (28 days) 19 - 28 mg/L [4]
LC50 (10 days) 48 - 65 mg/L [4]

Endocrine disrupter testing in aquatic vertebrates – in vivo

⚠ Data not provided by the registrant

Toxicity to terrestrial macroorganisms except arthropods

Study results: 3 studies submitted, 0 studies processed

Type of Study provided

Studies with data				
Key study				3

Summaries: 0 summaries submitted, 0 summaries processed

Data waiving: no waivers

⚠ No data available

⚠ No automatically processable data submitted

Toxicity to terrestrial arthropods

Study results: 3 studies submitted, 0 studies processed

⚠ No automatically processable data submitted

Type of Study provided

Studies with data				
Key study				3

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Toxicity to terrestrial plants

Study results: 4 studies submitted, 1 study processed

P/R Results

NOEC (14 days) 350 - 3 500 µg/kg soil dw [2]

EC50 (14 days) 1.8 - 7.4 mg/kg soil dw [3]

Type of Study provided

Studies with data				
Key study				3
Supporting study				1

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Toxicity to soil microorganisms

Study results: 3 studies submitted, 0 studies processed

⚠ No automatically processable data submitted

Type of Study provided

Studies with data				
Key study				3

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Toxicity to birds

Study results: 2 studies submitted, 0 studies processed

⚠ No automatically processable data submitted

Type of Study provided

Studies with data				

Data waiving: Other 2

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Toxicity to mammals ⚠ Data not provided by the registrant

Toxicological information

This section provides toxicological information compiled from all automatically processable data from REACH registration dossiers that is available to ECHA at the time of generation. The quality and correctness of the information remains the responsibility of the data submitter. The Agency thus cannot guarantee the correctness of the information displayed.

Derived No- or Minimal Effect Level (DN(M)EL)

M/C Summaries: 2 summaries submitted, 2 summaries processed

The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole. More detailed information is available in the dossiers.

Data for WORKERS

INHALATION Exposure	Threshold	Most sensitive study
Long-term:	(DMEL) 66.7 ng/m³	carcinogenicity
Acute /short term:	No hazard identified	
Long-term:	High hazard (no threshold derived)	
Acute /short term:	No hazard identified	

DERMAL Exposure	Threshold	Most sensitive study
Long-term:	(DMEL) 5 mg/kg bw/day	developmental toxicity / teratogenicity
Acute /short term:	No hazard identified	
Long-term:	Medium hazard (no threshold derived)	
Acute /short term:	No hazard identified	

EYE Exposure

No hazard identified

Data for the GENERAL POPULATION

INHALATION Exposure	Threshold	Most sensitive study
Long-term:	-	-
Acute /short term:	-	-
Long-term:	-	-
Acute /short term:	-	-

DERMAL Exposure	Threshold	Most sensitive study
Long-term:	-	-
Acute /short term:	-	-
Long-term:	-	-
Acute /short term:	-	-

ORAL Exposure	Threshold	Most sensitive study
Long-term:	-	-
Acute /short term:	-	-

EYE Exposure

-

Toxicokinetics, metabolism, and distribution

Study results	Type of Study provided	Summaries
		0 summaries submitted 0 summaries processed
Study data: basic toxicokinetics — 0 studies submitted, 0 studies processed	Study data: basic toxicokinetics	⚠ No data available
⚠ Study data not processed for brief profile	Studies with data: Key study 7; Other 2 — Data waiving: no waivers	
Study data: dermal absorption — 0 studies submitted, 0 studies processed	Study data: dermal absorption	
⚠ Study data not processed for brief profile	Studies with data — Data waiving: no waivers	

Acute toxicity

Study results	Type of Study provided	Summaries
		0 summaries submitted 0 summaries processed
oral — 4 studies submitted, 4 studies processed	oral	⚠ No data available
P/R Results LD50 10 000 mg/kg bw (rat) [4]	Studies with data: Key study 4 — Data waiving: no waivers	
inhalation — 2 studies submitted, 0 studies processed	inhalation	
⚠ No automatically processable data submitted	Studies with data — Data waiving: Sci. unjustified 2	
dermal — 2 studies submitted, 0 studies processed	dermal	
⚠ No automatically processable data submitted	Studies with data — Data waiving: Sci. unjustified 2	
other routes — 0 studies submitted, 0 studies processed	other routes	
⚠ No data available	Studies with data — Data waiving: no waivers	

Irritation / corrosion

Study results	Type of Study provided	Summaries
		0 summaries submitted 0 summaries processed
Study data: skin — 4 studies submitted, 0 studies processed	Study data: skin	⚠ No data available
⚠ Study data not processed for brief profile	Studies with data: Key study 4 — Data waiving: no waivers	
Study data: eye — 4 studies submitted, 0 studies processed	Study data: eye	
⚠ Study data not processed for brief profile	Studies with data: Key study 4 — Data waiving: no waivers	

Sensitisation

Study results

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

Study data: skin

2 studies submitted
6 studies processed

⚠ Study data not processed for brief profile

Studies with data				
Key study				1

Data waiving	
Sci. unjustified	1

⚠ No data available

Study data: respiratory

0 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Studies with data				

Data waiving

no waivers

Repeated dose toxicity

Study results

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

Study data: oral

12 studies submitted
0 studies processed

⚠ No automatically processable data submitted

Studies with data				
Key study	4			
Supporting study	8			

Data waiving

no waivers

⚠ No data available

Study data: inhalation

0 studies submitted
0 studies processed

⚠ No data available

Studies with data				

Data waiving

no waivers

Study data: dermal

6 studies submitted
0 studies processed

⚠ No data available

Studies with data				

Data waiving

no waivers

Genetic toxicity

Study results

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

Study data: in vitro

12 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Studies with data				
Key study	6			
Supporting study	2			
Other	4			

Data waiving

no waivers

⚠ No data available

Study data: in vivo

2 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Studies with data				
Key study	2			

Data waiving

no waivers

Carcinogenicity

Study results

10 studies submitted
0 studies processed

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

⚠ Study data not processed for brief profile

Studies with data				
Key study	6			2
Supporting study				2

Data waiving

no waivers

⚠ No data available

Toxicity to reproduction

Study results		Type of Study provided	Summaries	
				0 summaries submitted 0 summaries processed
Study data reproduction	5 studies submitted 0 studies processed	Study data: reproduction	⚠ No data available	
⚠ Study data not processed for brief profile				

Studies with data					Data waiving
					no waivers
Key study	2			2	
Supporting study				1	

Study data developmental	5 studies submitted 0 studies processed	Study data: developmental
⚠ Study data not processed for brief profile		

Studies with data					Data waiving	
Other	2				Sci. unjustified	2
					Other	1

Study data other studies	0 studies submitted 0 studies processed	Study data: other studies
⚠ Study data not processed for brief profile		

Studies with data					Data waiving
					no waivers

Neurotoxicity	⚠ Data not provided by the registrant

Immunotoxicity	⚠ Data not provided by the registrant

Endocrine disrupter mammalian screening - in vivo	⚠ Data not provided by the registrant

Legend

Type of study

- Experimental results
- Read across based on grouping of substance (category approach) or Read-across from supporting substance (structural analogue or surrogate)
- Estimated by calculation or (Q)SAR
- Experimental study planned, other or unspecified

Type of aggregation

- C — Concatenated distinct values
- R — Range of values
- P/R — Prioritisation (Eco)Toxicology AND Range of values
- M/C — Most Conservative of values

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