Cadmium sulphide

Substance identity

EC / List no.: 215-147-8

CAS no.: 1306-23-6

Mol. formula: CdS

Hazard classification & labelling

Danger! According to the **harmonised classification and labelling** (CLP00) approved by the European Union, this substance may cause cancer, causes damage to organs through prolonged or repeated exposure, is harmful if swallowed, is suspected of causing genetic defects, is suspected of damaging fertility and the unborn child and may cause long lasting harmful effects to aquatic life.

Properties of concern

C

Regulatory activities

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

Some uses of this substance are restricted under Annex XVII of REACH.

About this substance

This substance is manufactured and/or imported in the European Economic Area in 10 - 100 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

Relativo al CADMIO che non dovrebbe essere negli imballaggi.

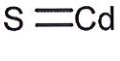
The Brief Profile summarizes the non-confidential data on substances as it is held in the databases of the European Chemicals Agency (ECHA), including data provided by third parties. The Brief Profile is automatically generated; note that it does not currently distinguish between harmonised classification 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.

Cadmium sulphide

Brief Profile - Last updated: 08/07/2017

Substance Description

Substance identity



EC / List name: Cadmium sulphide

IUPAC name: cadmium(2+) ion sulfanediide

Other names

EC / List no.:	215-147-8
CAS no.:	1306-23-6
Index number:	048-010-00-4
Molecular formula:	CdS

SMILES:	[S--].[Cd++]
InChI:	InChI=1S/Cd.S/q+2;-2 AuxInfo=1/0/N:1;2/rA:2Cd+2S-2/rB:;/rC:;3.4907,0,0;
Type of substance:	Mono constituent substance
Origin:	Inorganic
Registered compositions:	5
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** (CLP00) approved by the European Union, this substance may cause cancer, causes damage to organs through prolonged or repeated exposure, is harmful if swallowed, is suspected of causing genetic defects, is suspected of damaging fertility and the unborn child and may cause long lasting harmful effects to aquatic life.

Additionally, the classification provided by companies to ECHA in **CLP notifications** identifies that this substance is very toxic to aquatic life with long lasting effects, is very toxic to aquatic life and is suspected of damaging fertility or the unborn child.

Breakdown of all 177 C&L notifications submitted to ECHA

Carc. 1B	H350	✓
STOT RE 1	H372	✓
Acute Tox. 4	H302	✓
Muta. 2	H341	✓
Repr. 2	H361fd	✓
Aquatic Chronic 4	H413	✓
Aquatic Chronic 1	H410	
Aquatic Acute 1	H400	

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

✓ Harmonised Classification
REACH registration dossiers notifications
CLP notifications

Properties of concern

C

Regulatory activities

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

Registration

Pre-registration:	Substance pre-registered under REACH.
Registration:	This substance has 5 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):	

Restriction

Annex XVII (Restriction List):	Some uses of this substance are restricted under Annex XVII of REACH.

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:	This substance is subject to the Prior Informed Consent regulation and to export notification procedure from 31-Jan-2005
Annex V:	

About this substance

General

This substance is manufactured and/or imported in the European Economic Area in 10 - 100 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: potentially closed industrial processing with minerals/metals at elevated temperature (e.g. smelters, furnaces, refineries, coke ovens), production of mixtures or articles by tabletting, compression, extrusion or pelletisation, the low energy manipulation of substances bound in materials or articles and high energy work-up of substances bound in materials or articles (e.g. hot rolling/forming, grinding, mechanical cutting, drilling or sanding).

Release to the environment of this substance can occur from industrial use: formulation of mixtures, in the production of articles, manufacturing of the substance, formulation in materials and as an intermediate step in further manufacturing of another substance (use of intermediates). 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) and 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).

This substance can be found in complex articles, with no release intended: electrical batteries and accumulators 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: stone, plaster, cement, glass or ceramic (e.g. dishes, pots/pans, food storage containers, construction and isolation material).

Widespread uses by professional workers

This substance is used in the following products: laboratory chemicals, perfumes and fragrances and cosmetics and personal care products. This substance has an industrial use resulting in manufacture of another substance (use of intermediates).

This substance is used in the following areas: formulation of mixtures and/or re-packaging and scientific research and development.

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, batch processing in synthesis or formulation with opportunity for exposure, mixing in open batch processes, transfer of chemicals at dedicated facilities, transfer of substance into small containers and laboratory work.

Release to the environment of this substance can occur from industrial use: manufacturing of the substance, formulation of mixtures, in processing aids at industrial sites, as an intermediate step in further manufacturing of another substance (use of intermediates) and as processing aid. Other release to the environment of this substance is likely to occur from: indoor use as processing aid and outdoor use as processing aid.

Formulation or re-packing

This substance is used in the following products: pH regulators and water treatment products, laboratory chemicals, cosmetics and personal care products, coating products, fillers, putties, plasters, modelling clay, finger paints, lubricants and greases, perfumes and fragrances, pharmaceuticals and semiconductors. This substance has an industrial use resulting in manufacture of another substance (use of intermediates).

This substance is used in the following activities or processes at workplace: closed batch processing in synthesis or formulation, closed, continuous processes with occasional controlled exposure, 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), batch processing in synthesis or formulation with opportunity for exposure, mixing in open batch processes, laboratory work, closed processes with no likelihood of exposure, production of mixtures or articles by tabletting, compression, extrusion or pelletisation, treatment of articles by dipping and pouring, lubrication at high energy conditions and in partly open process, 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 handling of solid inorganic substances (e.g. ores and raw metal oxides, packaging/mixing/blending and weighing of metal powders).

Release to the environment of this substance can occur from industrial use: formulation of mixtures, manufacturing of the substance, in the production of articles, as an intermediate step in further manufacturing of another substance (use of intermediates), formulation in materials, in processing aids at industrial sites and as processing aid. Other release to the environment of this substance is likely to occur from: indoor use as processing aid and outdoor use as processing aid.

Uses at industrial sites

This substance is used in the following products: pH regulators and water treatment products, laboratory chemicals, semiconductors, fillers, putties, plasters, modelling clay, cosmetics and personal care products, photo-chemicals, adsorbents, coating products, finger paints, lubricants and greases, perfumes and fragrances, pharmaceuticals and extraction agents. This substance has an industrial use resulting in manufacture of another substance (use of intermediates).

This substance is used in the following areas: formulation of mixtures and/or re-packaging, scientific research and development and municipal supply (e.g. electricity, steam, gas, water) and sewage treatment. This substance is used for the manufacture of: chemicals, mineral products (e.g. plasters, cement) and electrical, electronic and optical equipment.

This substance is used in the following activities or processes at workplace: transfer of chemicals at dedicated facilities, closed batch processing in synthesis or formulation, transfer of substance into small containers, closed, continuous processes with occasional controlled exposure, closed processes with no likelihood of exposure, mixing in open batch processes, batch processing in synthesis or formulation with opportunity for exposure, potentially closed industrial processing with minerals/metals at elevated temperature (e.g. smelters, furnaces, refineries, coke ovens), production of mixtures or articles by tabletting, compression, extrusion or pelletisation, laboratory work, high energy work-up of substances bound in materials or articles (e.g. hot rolling/forming, grinding, mechanical cutting, drilling or sanding), treatment of articles by dipping and pouring, lubrication at high energy conditions and in partly open process, the low energy manipulation of substances bound in materials or articles and handling of solid inorganic substances (e.g. ores and raw metal oxides, packaging/mixing/blending and weighing of metal powders).

Release to the environment of this substance can occur from industrial use: as an intermediate step in further manufacturing of another substance (use of intermediates), in the production of articles, formulation of mixtures, manufacturing of the substance, formulation in materials, in processing aids at industrial sites and as processing aid. Other release to the environment of this substance is likely to occur from: indoor use as processing aid and outdoor use as processing aid.

Manufacture

This substance is used in the following activities or processes at workplace: closed, continuous processes with occasional controlled exposure, transfer of chemicals, closed batch processing in synthesis or formulation, transfer of substance into small containers, potentially closed industrial processing with minerals/metals at elevated temperature (e.g. smelters, furnaces, refineries, coke ovens), closed processes with no likelihood of exposure, handling of solid inorganic substances (e.g. ores and raw metal oxides, packaging/mixing/blending and weighing of metal powders), laboratory work, batch processing in synthesis or formulation with opportunity for exposure, mixing in open batch processes, production of mixtures or articles by tabletting, compression, extrusion or pelletisation, treatment of articles by dipping and pouring, lubrication at high energy conditions and in partly open process, the low energy manipulation of substances bound in materials or articles 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, formulation of mixtures, in the production of articles, as an intermediate step in further manufacturing of another substance (use of intermediates), in processing aids at industrial sites, as processing aid and formulation in materials. Other release to the environment of this substance is likely to occur from: indoor use as processing aid and outdoor use as processing aid.

Precautionary Measures and safe use

Precautions for using this substance have been recommended by its registrants under REACH, as follows:

Prevention statements

When handling this substance: do not eat, drink or smoke when using this product; use personal protective equipment as required.; avoid release to the environment.

Response statements

In case of incident: If exposed or concerned: get medical advice/attention. Collect spillage.

Disposal statements

The substance must be disposed in accordance with local/regional/national/international regulation.

Guidance on the safe use of the substance provided by manufacturers and importers of this substance.

Registrants/suppliers

Active

- Fintex Chemie s.r.o., Národní 365/43 110 00 Praha 1 - Staré město Czech Republic
- Flaurea Chemicals SA, Quai des usines 12 7800 Ath Hainaut Belgium
- Huntsman Pigments (UK) Ltd, Liverpool Road East ST7 3AA Kidsgrove Staffordshire United Kingdom
- I.C.B. srl, via San Giuliano 4 30173 Venice Italy
- James M. Brown Limited, Napier Street Fenton ST4 4NX Stoke-on-Trent Staffordshire United Kingdom

Inactive

- 5N Plus GmbH, Oderlandstrasse 104 15890 Eisenhüttenstadt Brandenburg Germany
- 5N PV GmbH, Oderlandstrasse 104 15890 Eisenhüttenstadt Brandenburg Germany
- UMCO Umwelt Consult GmbH, Georg-Wilhelm-Straße 187 21107 Hamburg Germany

Other names

IUPAC names

- -
- cadmium sulfide
- Cadmium sulphide
- cadmium(2+) ion sulfanediide
- cadmium(II)sulfide
- cadmium(II)sulphide
- CdS
- sulfanylidenecadmium

Regulatory processes names

- Cadmium sulphide

Trade names

Other names

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		Type of Study provided			Summaries
	2 studies submitted 2 studies processed	Studies with data: Key study 2	Data waiving: no waivers		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]

⚠ No data available

Melting/freezing point

Study results		Type of Study provided			Summaries
	2 studies submitted 0 studies processed	Studies with data: Key study 2	Data waiving: no waivers		0 summaries submitted 0 summaries processed

⚠ No automatically processable data submitted

⚠ No data available

Boiling point

Study results		Type of Study provided			Summaries
	2 studies submitted 0 studies processed	Studies with data	Data waiving: Sci. unjustified	2	0 summaries submitted 0 summaries processed

⚠ No automatically processable data submitted

⚠ No data available

Density

Study results		Type of Study provided			Summaries
	2 studies submitted 2 studies processed	Studies with data: Key study 2	Data waiving: no waivers		0 summaries submitted 0 summaries processed

R Density
4.81 g/cm³ @ 22 °C [2]

⚠ 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: 4 studies submitted, 2 studies processed

Type of Study provided

Summaries: 0 summaries submitted, 0 summaries processed

R **Water solubility (mass/vol.)**
0.6 ng/L @ 20 °C [2]

Studies with data					Data waiving
Key study	1		2		no waivers
Weight of evidence	1				

⚠ No data available

Solubility in organic solvents / fat solubility

⚠ Data not provided by the registrant

Surface tension

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

Flash 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

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: 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

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	
					Other	2

⚠ 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	
					Other	2

⚠ No data available

Oxidation reduction potential

⚠ Data not provided by the registrant

pH

⚠ Data not provided by the registrant

Dissociation constant

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

Viscosity

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

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

⚠ Study data not processed for brief profile

Type of Study provided

Studies with data				

Data waiving	
Sci. unjustified	2

Summaries: 0 summaries submitted, 0 summaries processed

⚠ 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

⚠ 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

Biodegradation in water & sediment - simulation tests

⚠ Data not provided by the registrant

Biodegradation in soil

Study results: 2 studies submitted, 0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Studies with data				

Data waiving	
Other	2

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Bioaccumulation: aquatic / sediment

Study results: 38 studies submitted, 0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Studies with data				
Key study				2
Supporting study				28
Weight of evidence	2			6

Data waiving
no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Bioaccumulation: terrestrial

Study results: 56 studies submitted, 0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Studies with data				
Key study				30
Supporting study				26

Data waiving
no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Adsorption/desorption

Study results: 2 studies submitted, 0 studies processed

Type of Study provided

Studies with data				

Data waiving

Sci. unjustified	2

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No automatically processable data submitted

⚠ 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: 2 summaries submitted, 2 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	190 ng/L (2)
Intermittent releases (freshwater)	-
Marine water	1.14 µg/L (2)
Intermittent releases (marine water)	-
Sewage treatment plant (STP)	20 µg/L (2)
Sediment (freshwater)	1.8 mg/kg sediment dw (2)
Sediment (marine water)	640 µg/kg sediment dw (2)

Hazard for Air	
Air	-
Hazard for Terrestrial Organism	
Soil	900 µg/kg soil dw (2)
Hazard for Predators	
Secondary poisoning	160 µg/kg food (2)

Short-term toxicity to fish

Study results: 14 studies submitted, 14 studies processed

P/R Results
LC50 (24 days) 34 - 2 300 µg/L [4]
LC50 (4 days) 748 - 6 470 µg/L [10]

Type of Study provided

Studies with data				
Key study				14

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Long-term toxicity to fish

Study results: 40 studies submitted, 32 studies processed

P/R Results
NOEC (2.959 years) 900 - 6 400 ng/L [8]
NOEC (4.2 months) 1.1 µg/L [2]
NOEC (3.333 months) 4.1 - 8.1 µg/L [4]
NOEC (84 days) 12 µg/L [2]
NOEC (65 days) 1.1 µg/L [2]

Type of Study provided

Studies with data				
Key study				32
Supporting study				8

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Short-term toxicity to aquatic invertebrates

Study results: 17 studies submitted, 17 studies processed

P/R Results
EC50 (24 h) 1.9 mg/L [2]
LC50 (48 days) 110 - 750 µg/L [5]
LC50 (4 days) 5 - 1 820 µg/L [4]
LC50 (72 h) 8.88 µg/L [2]
LC50 (60 h) 15.8 µg/L [2]

Type of Study provided

Studies with data				
Key study				17

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Long-term toxicity to aquatic invertebrates

Study results: 130 studies submitted, 98 studies processed

P/R Results
NOEC (9 months) 50 - 100 µg/L [4]
NOEC (6 months) 320 µg/L [2]
NOEC (3 months) 100 µg/L [2]
NOEC (60 days) 100 - 160 µg/L [6]
NOEC (35 days) 100 - 106 µg/L [6]

Type of Study provided

Studies with data				
Key study				102
Supporting study	2			26

Data waiving: no waivers

Summaries: 0 summaries submitted, 0 summaries processed

⚠ No data available

Toxicity to aquatic algae and cyanobacteria

Study results 24 studies submitted
18 studies processed

Type of Study provided

Studies with data				
Key study				18
Supporting study				6

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
EC50 (72 h) 18 - 120 µg/L [10]
NOEC (5 days) 63 µg/L [2]
NOEC (72 h) 2.4 µg/L [3]
NOEC (24 h) 850 - 27 000 ng/L [6]
LOEC (24 h) 1.9 µg/L [2]

Toxicity to aquatic plants other than algae

⚠ Data not provided by the registrant

Toxicity to microorganisms

Study results 2 studies submitted
2 studies processed

Type of Study provided

Studies with data				
Key study				2

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
NOEC (3 h) 200 - 32 600 µg/L [4]
LOEC (3 h) 800 - 100 000 µg/L [4]

Sediment toxicity

Study results 8 studies submitted
6 studies processed

Type of Study provided

Studies with data				
Supporting study				2
Weight of evidence				6

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
NOEC (1.074 years) 115 mg/kg sediment dw [2]
NOEC (28 days) 1 370 mg/kg sediment dw [2]
NOEC (72 h) 1 226.4 mg/kg sediment dw [2]

Toxicity to terrestrial macroorganisms except arthropods

Study results 14 studies submitted
6 studies processed

Type of Study provided

Studies with data				
Key study				6
Supporting study				8

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
NOEC (3.667 months) 10 mg/kg soil dw [4]
NOEC (84 days) 150 mg/kg soil dw [2]
NOEC (21 days) 10 mg/kg soil dw [2]

Toxicity to terrestrial arthropods

Study results 16 studies submitted
13 studies processed

Type of Study provided

Studies with data				
Key study				13
Supporting study				2
Other				1

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
NOEC (42 days) 22 - 320 mg/kg soil dw [6]
NOEC (35 days) 148 mg/kg soil dw [2]
NOEC (28 days) 25 - 80 mg/kg soil dw [8]

Toxicity to terrestrial plants

Study results 26 studies submitted
8 studies processed

Type of Study provided

Studies with data				
Key study				8
Supporting study				18

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
NOEC (3.333 months) 1.8 mg/kg soil dw [2]
NOEC (28 days) 7.1 - 29 mg/kg soil dw [4]
NOEC (10 days) 3.12 - 100 mg/kg soil dw [12]
NOEC (72 h) 20 mg/kg soil dw [2]

Toxicity to soil microorganisms

Study results 20 studies submitted
10 studies processed

Type of Study provided

Studies with data				
Key study				10
Supporting study				10

Data waiving
no waivers

Summaries 0 summaries submitted
0 summaries processed

⚠ No data available

P/R Results
NOEC (1.726 years) 150 mg/kg soil dw [2]
NOEC (1.573 years) 400 mg/kg soil dw [2]
NOEC (1.534 years) 55 - 3 000 mg/kg soil dw [6]
NOEC (1.342 years) 150 mg/kg soil dw [2]
NOEC (10.033 months) 150 mg/kg soil dw [2]

Toxicity to birds

Study results		Type of Study provided				Summaries	
8 studies submitted 8 studies processed						0 summaries submitted 0 summaries processed	
P/R Results		Studies with data				Data waiving	⚠ No data available
NOEC (3 months) 1.6 mg/kg diet [2]		Weight of evidence			8	no waivers	
NOEC (84 days) 10 mg/kg diet [4]							
NOEC (42 days) 38 mg/kg diet [2]							
NOEC (28 days) 12 mg/kg diet [2]							
LOEC (3 months) 15.2 mg/kg diet [2]							

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
Systemic Effects		
Long-term:	(DNEL) 4 µg/m³	repeated dose toxicity
Acute /short term:	-	-
Local Effects		
Long-term:	(DNEL) 4 µg/m³	repeated dose toxicity
Acute /short term:	-	-

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

EYE Exposure

-

Data for the GENERAL POPULATION

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

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

ORAL Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 1 µg/kg bw/day	repeated dose toxicity
Acute /short term:	-	-

EYE Exposure

-

Toxicokinetics, metabolism, and distribution

Study results	Type of Study provided	Summaries
		0 summaries submitted 0 summaries processed
Study data not processed	0 studies submitted 0 studies processed	⚠ No data available
⚠ Study data not processed for brief profile	Study data: basic toxicokinetics	
	Studies with data: Key study 4	Data waiving: no waivers
Study data dermal absorption	0 studies submitted 0 studies processed	
⚠ Study data not processed for brief profile	Study data: dermal absorption	
	Studies with data	Data waiving: no waivers

Acute toxicity

Study results		Type of Study provided		Summaries	
					0 summaries submitted 0 summaries processed
oral	8 studies submitted 8 studies processed	**oral**		⚠ No data available	
P/R Results LD50 63 - 2 330 mg/kg bw (rat) [4] LD50 63 - 890 mg/kg bw (mouse) [4]		Studies with data: Weight of evidence: 8	Data waiving: no waivers		
M/C Interpretations of results Other [6]					
inhalation	38 studies submitted 24 studies processed	**inhalation**			
P/R Results LC50 (3 h) 4.6 - 8.4 mg/m³ air (rat) [4] LC50 (2 h) 4.5 - 132 mg/m³ air (rat) [8] LC50 (30 min) 8.63 mg/m³ air (rat) [2] LC50 (15 min) 9.02 mg/m³ air (mouse) [2] LC50 (2 h) 4.5 mg/m³ air (rabbit) [4]		Studies with data: Key study: 24; Supporting study: 14	Data waiving: no waivers		
M/C Interpretations of results Very toxic [4]					
dermal	2 studies submitted 0 studies processed	**dermal**			
⚠ No automatically processable data submitted		Studies with data	Data waiving: Exposure cons. 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	2 studies submitted 0 studies processed	**Study data: skin**		⚠ No data available	
⚠ Study data not processed for brief profile		Studies with data	Data waiving: Other 2		
Study data: eye	2 studies submitted 0 studies processed	**Study data: eye**			
⚠ Study data not processed for brief profile		Studies with data	Data waiving: Other 2		

Sensitisation

Study results		Type of Study provided		Summaries	
					0 summaries submitted 0 summaries processed
Study data: skin	2 studies submitted 0 studies processed	**Study data: skin**		⚠ No data available	
⚠ Study data not processed for brief profile		Studies with data	Data waiving: Other 2		
Study data: respiratory	2 studies submitted 0 studies processed	**Study data: respiratory**			
⚠ Study data not processed for brief profile		Studies with data	Data waiving: Other 2		

Repeated dose toxicity

Study results

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

No data available

Study data: oral

No data available

Studies with data	Data waiving
	no waivers

Study data: inhalation

No data available

Studies with data	Data waiving
	no waivers

Study data: dermal

No automatically processable data submitted

Studies with data	Data waiving	
	Exposure cons.	2

Genetic toxicity

Study results

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

No data available

Study data: in vitro

Study data not processed for brief profile

Studies with data	Data waiving
Key study 4	no waivers

Study data: in vivo

Study data not processed for brief profile

Studies with data	Data waiving
	no waivers

Carcinogenicity

Study results

8 studies submitted
0 studies processed

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

Study data not processed for brief profile

No data available

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

Toxicity to reproduction

Study results

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

Study data: reproduction

⚠ No data available

⚠ Study data not processed for brief profile

Studies with data					Data waiving
Key study				6	no waivers

Study data: developmental

⚠ Study data not processed for brief profile

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

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

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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