

## Lead sulfochromate yellow

This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.

### Substance identity

EC / List no.: 215-693-7

CAS no.: 1344-37-2

Mol. formula: CrH2O4Pb

### 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



### 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.



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 importers 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 sulfochromate yellow

This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.

Brief Profile - Last updated: 12/01/2018

### Substance Description

#### Substance identity

EC / List name:	Lead sulfochromate yellow	SMILES:	[PbH2+] [O-][Cr](O-)(=O)=O
IUPAC name:	lead(2+) ion dioxochromiumbis(olate)	InChI:	InChI=1S/Cr.4O.Pb.2H/q;2+1+2;; AuxInfo=1/0/N:2,3,4,5,6,1,7,8/A:6Pb2+2CrO0O-O/rB;2,2;2,2;2/1C:0,-1,54,0;4,62,-1,54,0;4,62,0,0;4,62,-3,08,0,6,16,-1,54,0;3,08,-1,54,0;
Other names:		Type of substance:	Mono constituent substance
EC / List no.:	215-693-7	Origin:	Inorganic
CAS no.:	1344-37-2	Registered compositions:	7
Index number:	082-009-00-X	Of which contain:	0 impurities relevant for classification 0 additives relevant for classification
Molecular formula:	CrH2O4Pb	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 930 C&L notifications submitted to ECHA

Aquatic Acute 1	H400	<input checked="" type="checkbox"/>
STOT RE 2	H373	<input checked="" type="checkbox"/>
Carc. 1B	H350	<input checked="" type="checkbox"/>
Repr. 1A	H360Df	<input checked="" type="checkbox"/>
Aquatic Chronic 1	H410	<input checked="" type="checkbox"/>
Skin Sens. 1	H317	<input type="checkbox"/>
Resp. Sens. 1	H334	<input type="checkbox"/>
Not Classified		<input type="checkbox"/>
Carc. 2	H351	<input type="checkbox"/>
Repr. 2	H361	<input type="checkbox"/>

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

- Harmonised Classification  
 REACH registration dossiers notifications  
 CLP notifications

#### Properties of concern



#### 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	

##### 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 03-Dec-2015
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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 tableting, 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, non-industrial spraying, mixing in open batch processes, industrial spraying, production of mixtures or articles by tableting, compression, extrusion or pelletisation, calendaring 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 tableting, 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, calendaring 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 tableting, 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, Sortileweg 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 Yellow 34
- chromic acid, lead (+2) salt
- Lead Sulfochromate Yellow
- Lead Sulfochromate yellow 1344-37-2
- lead sulfochromate yellow, C.I. Pigment Yellow 34; [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.]
- lead sulphochromate yellow
- lead(2+) ion dioxochromiumbis(olate)
- LEAD-SULFOCHROMATE-YELLOW-
- PIGMENT YELLOW 34
- [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.]

### Regulatory processes names

- C.I. Pigment Yellow 34 (This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.)
- Lead sulfochromate yellow
- Lead sulfochromate yellow (-)
- Lead sulfochromate yellow (C.I. Pigment Yellow 34) (-)
- lead sulfochromate yellow (This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.)
- [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.] (This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77603.)

## Trade names

- Bleisulfchromatgelb
- BRUFASOL Yellow 16015
- BRUFASOL Yellow 16017
- BRUFASOL Yellow 16018
- BRUFASOL Yellow 16019
- BRUFASOL Yellow 1727M
- BRUFASOL Yellow 311M
- BRUFASOL Yellow 311MS
- BRUFASOL Yellow 4711 MS
- BRUFASOL Yellow 835 M
- BRUFASOL Yellow 83S3
- BRUFASOL Yellow 860 M
- BRUFASOL Yellow 86S5
- C 103
- C 103 (pigment)
- C.I. 77600
- C.I. 77603
- C.I. Pigment Yellow 34 (9CI)
- C.P. Chrome Yellow Light 1066
- C.P. Chrome Yellow Light 1074
- C.P. Chrome Yellow Medium 1074
- C.P. Chrome Yellow Medium 1085
- C.P. Chrome Yellow Medium 1298
- Chromastral Green HM
- Chromastral Green M
- Chromastral Green Y
- Chrome Fast Green C.P.
- Chrome orange
- Chrome yellow
- Chrome Yellow 10G
- Chrome Yellow 4G
- Chrome Yellow 4GL Light
- Chrome Yellow 500LSG
- Chrome Yellow 5G
- Chrome Yellow 5GF
- Chrome Yellow 62E
- Chrome Yellow 6GL Primrose
- Chrome Yellow A 241
- Chrome Yellow G
- Chrome Yellow GL Medium
- Chrome Yellow Lemon
- Chrome Yellow LF AA
- Chrome yellow light
- Chrome Yellow Light Y 434D
- Chrome yellow medium
- Chrome Yellow Medium Y 469D
- Chrome yellow middle
- Chrome Yellow NEO 5GS
- Chrome Yellow Pigment GMN 35
- Chrome Yellow Primrose
- Chromium yellow
- Dainichi Chrome Yellow 30G
- Dainichi Chrome Yellow 5G
- Dark chrome yellow
- DCC Krolor Yellow KY 781
- DCC Krolor Yellow KY 787
- DCC Krolor Yellow KY 788
- DCC Krolor Yellow KY 795
- DCC Krolor Yellow KY 895
- DCC Yellow 1000
- DCC Yellow 1002
- DCC Yellow 1003
- DCC Yellow 1004
- DCC Yellow 1009
- DCC Yellow 1012
- DCC Yellow 1013
- DCC Yellow 1014
- DCC Yellow 1016
- DCC Yellow 1018
- DCC Yellow 1019
- DCC Yellow 1025
- DCC Yellow 1026
- DCC Yellow 1027
- DCC Yellow 1028
- DCC Yellow 1031
- DCC Yellow 1032
- DCC Yellow 1034
- DCC Yellow 1036
- DCC Yellow 1037
- DCC Yellow 1077
- DCC Yellow 1080
- DCC Yellow 1091
- DCC Yellow 2603
- DCC Yellow 2603R
- DCC Yellow 4019
- DCC Yellow 4020
- DCC Yellow 4034
- DCC Yellow 5003
- DCC Yellow 5012
- DCC Yellow 5020
- DCC Yellow 5021
- DCC Yellow 5022
- DCC Yellow 5026
- DCC Yellow 5035
- DCC Yellow 5036
- DCC Yellow 5037
- DCC Yellow 9160
- DCC Yellow 9259
- DCC Yellow Y 935
- DCC Yellow Y 936
- DCC Yellow Y-933-LD
- DCC Yellow Y-934-LD
- DCC Yellow Y-958-LD
- DCC Yellow Y-969-LD
- Duromineral® Gelb
- Duromineral® Yellow
- Dynatarn Yellow 34
- HEUCOTRON T-Yellow 8064
- HEUCOTRON T-Yellow 8064K
- HEUCOTRON T-Yellow 8070
- Krolor Yellow KY 788D
- KZh 2
- KZh 3
- Lead sulfchromate yellow
- Lemon Chrome A 3G
- Lemon Chrome C 4G
- Light chrome yellow
- Medium chrome yellow
- Middle chrome
- Middle Chrome BHG
- Pigment Yellow 34
- Primrose chrome
- Primrose yellow

- Pure Lemon Chrome 24882
- Pure Lemon Chrome 3GN
- Pure Lemon Chrome HL 3G
- Pure Lemon Chrome L 3G
- Pure Lemon Chrome L 3GS
- Pure Middle Chrome 24883
- Pure Middle Chrome LG
- Pure Primrose Chrome 24880
- Pure Primrose Chrome 24881
- Pure Primrose Chrome L 10G
- Pure Primrose Chrome L 6G
- Renol Chrome Yellow Y 2G
- Renol Chrome Yellow Y 2RS
- Resino Yellow NSR 107
- RW34S
- RW37C
- RW37D
- RW37G
- RW37H
- RW37U
- RW38D
- RW38F
- RW38H
- RW38S
- Supra Lemon Chrome 4G
- Supra Lemon Chrome H 4G
- Supra Middle Chrome G
- Supra Primrose Chrome 6G
- Vynamon Yellow 6GN
- Vynamon Yellow CRN

Other names

- C.I. Pigment Yellow 34

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
<input checked="" type="checkbox"/> Physical state at 20°C and 1013 hPa Solid (100%) [2]		Studies with data <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Key study 2	Data waiving <input type="checkbox"/> No data available no waivers	
<input checked="" type="checkbox"/> Form Powder (100%) [2]				
<input checked="" type="checkbox"/> Odour Odourless (100%) [2]				
<input checked="" type="checkbox"/> Substance type Other (100%) [2]				
Melting/freezing point				
Study results	2 studies submitted 2 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input checked="" type="checkbox"/> Melting / freezing point 800 °C [2]		Studies with data <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Key study 2	Data waiving <input type="checkbox"/> No data available no waivers	
Boiling point				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted		Studies with data <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Other 2	Data waiving <input type="checkbox"/> No data available	
Density				
Study results	4 studies submitted 2 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input checked="" type="checkbox"/> Density 6 g/cm <sup>3</sup> [2]		Studies with data <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Key study 2 Supporting study 2	Data waiving <input type="checkbox"/> No data available no waivers	
Vapour pressure				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted		Studies with data <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Other 2	Data waiving <input type="checkbox"/> No data available	

Partition coefficient				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
		Other	2	

Water solubility				
Study results	3 studies submitted 1 study processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input checked="" type="checkbox"/> Water solubility (mass/vol.) 3 - 500 µg/L @ 22 °C and pH 6 - 8 [7]				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
Key study	3	no waivers		

Solubility in organic solvents / fat solubility				
<input type="checkbox"/> 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
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
		Other	3	

Flash point				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
		Sci. unjustified	2	
		Other	1	

Auto flammability				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
		Other	2	

Flammability				
Study results	1 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
Supporting study	2	Sci. unjustified	2	

Explosiveness				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
		Sci. unjustified	1	
		Other	1	

Oxidising				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available	
Key study	1	Other	1	

Oxidation reduction potential				
<input type="checkbox"/> Data not provided by the registrant				

pH				
<input type="checkbox"/> Data not provided by the registrant				

Dissociation constant				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving Sci. unjustified 2	<input type="checkbox"/> No data available

Viscosity				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving Not feasible 2	<input type="checkbox"/> No data available

**Environmental fate and pathways**

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<input type="checkbox"/> Phototransformation in air				<input type="checkbox"/> Data not provided by the registrant
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Hydrolysis				
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> Study data not processed for brief profile				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving Sci. unjustified 2	<input type="checkbox"/> No data available

<input type="checkbox"/> Phototransformation in water				<input type="checkbox"/> Data not provided by the registrant
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<input type="checkbox"/> Phototransformation in soil				<input type="checkbox"/> 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
<input type="checkbox"/> No automatically processable data submitted				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving Not feasible 2	<input type="checkbox"/> No data available

<input type="checkbox"/> Biodegradation in water & sediment - simulation tests				<input type="checkbox"/> 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
<input type="checkbox"/> Study data not processed for brief profile				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving Not feasible 2	<input type="checkbox"/> 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
<input type="checkbox"/> Study data not processed for brief profile				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving no waivers	<input type="checkbox"/> No data available
Key study			3	
Supporting study			4	
Other			3	

<input type="checkbox"/> Bioaccumulation: terrestrial				<input type="checkbox"/> Data not provided by the registrant
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Adsorption/desorption				
Study results	8 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
<input type="checkbox"/> No automatically processable data submitted				
Studies with data		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving no waivers	<input type="checkbox"/> No data available
Key study			4	
Other			4	

<input type="checkbox"/> Henrys law constant (H)				<input type="checkbox"/> Data not provided by the registrant
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<input type="checkbox"/> Distribution modelling				<input type="checkbox"/> Data not provided by the registrant
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**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)	
<b>[R]</b> 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		Hazard for Air	
Freshwater	2.7 - 100 µg/L (4)	Air	No hazard identified (3)
Intermittent releases (freshwater)	2.7 - 1 000 µg/L (4)	Hazard for Terrestrial Organism	
Marine water	270 - 10 000 ng/L (4)	Soil	35 - 166 000 µg/kg soil dw (2)
Intermittent releases (marine water)	-	Hazard for Predators	
Sewage treatment plant (STP)	100 - 1 000 000 µg/L (3)	Secondary poisoning	500 - 17 000 µg/kg food (2)
Sediment (freshwater)	700 - 174 000 µg/kg sediment dw (2)		
Sediment (marine water)	700 - 17 400 µg/kg sediment dw (2)		

Short-term toxicity to fish				
Study results	3 studies submitted 3 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed

<b>[P/R]</b> Results	Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available
LC50 (4 days) 100 - 10 000 mg/L [3]	Key study	3	no waivers	
NOEC (4 days) 100 - 10 000 mg/L [3]				

Long-term toxicity to fish				
Study results	3 studies submitted 1 study processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed

<b>[P/R]</b> Results	Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available
NOEC (1.129 years) 1 - 3.95 mg/L [3]	Key study	3	no waivers	
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	Summaries	0 summaries submitted 0 summaries processed

<b>[P/R]</b> Results	Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available
EC50 (48 h) 100 mg/L [2]	Key study	2	no waivers	
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	Summaries	0 summaries submitted 0 summaries processed

<b>[P/R]</b> Results	Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available
NOEC (21 days) 700 µg/L [1]	Key study	3	no waivers	
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	Summaries	0 summaries submitted 0 summaries processed

<b>[P/R]</b> Results	Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available
EC50 (72 h) 100 mg/L [2]	Key study	2	no waivers	
NOEC (72 h) 100 mg/L [2]	Supporting study	2		
EC10 (72 h) 100 mg/L [2]				

Toxicity to aquatic plants other than algae	
	<input type="checkbox"/> Data not provided by the registrant

Toxicity to microorganisms				
Study results	4 studies submitted 4 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed

<b>[P/R]</b> Results	Studies with data	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Data waiving	<input type="checkbox"/> No data available
EC50 (30 min) 10 g/L [4]	Weight of evidence	4	no waivers	
EC10 (30 min) 10 g/L [4]				

Sediment toxicity									
Study results	4 studies submitted 2 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed					
<p><b>[P/R] Results</b>            LC50 (28 days) 19 - 28 mg/L [4]            LC50 (10 days) 4B - 65 mg/L [4]</p>									
<p>Studies with data</p> <table border="1"> <tr> <td>△</td> <td>0</td> <td>0</td> <td>0</td> <td>4</td> </tr> </table>		△	0	0	0	4	<p>Data waiving no waivers</p>		
△	0	0	0	4					
<p>Key study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>4</td> </tr> </table>						4	<p>△ No data available</p>		
				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	Summaries	0 summaries submitted 0 summaries processed					
<p>△ No automatically processable data submitted</p>									
<p>Studies with data</p> <table border="1"> <tr> <td>△</td> <td>0</td> <td>0</td> <td>0</td> <td>3</td> </tr> </table>		△	0	0	0	3	<p>Data waiving no waivers</p>		
△	0	0	0	3					
<p>Key study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> </table>						3	<p>△ No data available</p>		
				3					

Toxicity to terrestrial arthropods									
Study results	3 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed					
<p>△ No automatically processable data submitted</p>									
<p>Studies with data</p> <table border="1"> <tr> <td>△</td> <td>0</td> <td>0</td> <td>0</td> <td>3</td> </tr> </table>		△	0	0	0	3	<p>Data waiving no waivers</p>		
△	0	0	0	3					
<p>Key study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> </table>						3	<p>△ No data available</p>		
				3					

Toxicity to terrestrial plants									
Study results	4 studies submitted 1 study processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed					
<p><b>[P/R] Results</b>            NOEC (14 days) 350 - 3 500 µg/kg soil dw [2]            EC50 (14 days) 1.8 - 7.4 mg/kg soil dw [3]</p>									
<p>Studies with data</p> <table border="1"> <tr> <td>△</td> <td>0</td> <td>0</td> <td>0</td> <td>3</td> </tr> </table>		△	0	0	0	3	<p>Data waiving no waivers</p>		
△	0	0	0	3					
<p>Key study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> </table>						3	<p>△ No data available</p>		
				3					
<p>Supporting study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>1</td> </tr> </table>						1			
				1					

Toxicity to soil microorganisms									
Study results	3 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed					
<p>△ No automatically processable data submitted</p>									
<p>Studies with data</p> <table border="1"> <tr> <td>△</td> <td>0</td> <td>0</td> <td>0</td> <td>3</td> </tr> </table>		△	0	0	0	3	<p>Data waiving no waivers</p>		
△	0	0	0	3					
<p>Key study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> </table>						3	<p>△ No data available</p>		
				3					

Toxicity to birds									
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed					
<p>△ No automatically processable data submitted</p>									
<p>Studies with data</p> <table border="1"> <tr> <td>△</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> </tr> </table>		△	0	0	0	2	<p>Data waiving Other</p>		
△	0	0	0	2					
<p>Key study</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>2</td> </tr> </table>						2	<p>△ No data available</p>		
				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		
<p>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.</p>					
Data for WORKERS			Data for the GENERAL POPULATION		
INHALATION Exposure	Threshold	Most sensitive study	INHALATION Exposure	Threshold	Most sensitive study
Long-term:	(DMEL) 66.7 ng/m³	carcinogenicity	Long-term:	-	-
Acute /short term:	No hazard identified		Acute /short term:	-	-
Long-term:	High hazard (no threshold derived)		Long-term:	-	-
Acute /short term:	No hazard identified		Acute /short term:	-	-
DERMAL Exposure	Threshold	Most sensitive study	DERMAL Exposure	Threshold	Most sensitive study
Long-term:			Long-term:	-	-
Acute /short term:			Acute /short term:	-	-
Long-term:	(DMEL) 5 mg/kg bw/day	developmental toxicity / teratogenicity	Long-term:	-	-
Acute /short term:	No hazard identified		Acute /short term:	-	-
Long-term:	Medium hazard (no threshold derived)		Long-term:	-	-
Acute /short term:	No hazard identified		Acute /short term:	-	-
EYE Exposure			ORAL Exposure	Threshold	Most sensitive study
No hazard identified			Long-term:	-	-
			Acute /short term:	-	-
			EYE Exposure		

Toxicokinetics, metabolism, and distribution																					
Study results	Type of Study provided	Summaries	0 summaries submitted 9 summaries processed																		
	Study data: basic toxicokinetics	⚠ No data available																			
⚠ Study data not processed for brief profile	<table border="1"> <tr> <td>Studies with data</td> <td>⚠</td> <td>📄</td> <td>📄</td> <td>📄</td> <td>📄</td> </tr> <tr> <td>Key study</td> <td>7</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Studies with data	⚠	📄	📄	📄	📄	Key study	7					Other	2					Data waiving no waivers	
Studies with data	⚠	📄	📄	📄	📄																
Key study	7																				
Other	2																				
	Study data: dermal absorption																				
⚠ Study data not processed for brief profile	<table border="1"> <tr> <td>Studies with data</td> <td>⚠</td> <td>📄</td> <td>📄</td> <td>📄</td> <td>📄</td> </tr> <tr> <td>Key study</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Studies with data	⚠	📄	📄	📄	📄	Key study						Other						Data waiving no waivers	
Studies with data	⚠	📄	📄	📄	📄																
Key study																					
Other																					

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	
<b>P/R</b> Results LD50 10 000 mg/kg bw (rat) [4]	Studies with data: 4 Key study: 4	Data waiving no waivers	
inhalation 2 studies submitted 0 studies processed	inhalation	⚠ No automatically processable data submitted	
⚠ No automatically processable data submitted	Studies with data: 2 Key study: 2	Data waiving Sci. unjustified	2
dermal 2 studies submitted 0 studies processed	dermal	⚠ No automatically processable data submitted	
⚠ No automatically processable data submitted	Studies with data: 2 Key study: 2	Data waiving Sci. unjustified	2
other routes 0 studies submitted 0 studies processed	other routes	⚠ No data available	
⚠ No data available	Studies with data: 0 Key study: 0	Data waiving no waivers	

Irritation / corrosion			
Study results	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
Study data: skin	Study data: skin	⚠ No data available	
⚠ Study data not processed for brief profile	Studies with data: 2 Key study: 2	Data waiving no waivers	
Study data: eye	Study data: eye	⚠ Study data not processed for brief profile	
⚠ Study data not processed for brief profile	Studies with data: 4 Key study: 4	Data waiving no waivers	

Sensitisation			
Study results	Type of Study provided	Summaries	0 summaries submitted 0 summaries processed
Study data: skin	Study data: skin	⚠ No data available	
⚠ Study data not processed for brief profile	Studies with data: 1 Key study: 1	Data waiving Sci. unjustified	1
Study data: respiratory	Study data: respiratory	⚠ Study data not processed for brief profile	
⚠ Study data not processed for brief profile	Studies with data: 0 Key study: 0	Data waiving no waivers	

**Repeated dose toxicity**

Study results	Type of Study provided	Summaries																					
<p>△ No automatically processable data submitted</p>	<p>Study data: oral</p> <table border="1"> <tr> <td>Studies with data</td> <td>△</td> <td>📄</td> <td>📊</td> <td>📑</td> <td>🔍</td> <td>Data waiving no waivers</td> </tr> <tr> <td>Key study</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Supporting study</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers	Key study	4						Supporting study	4						<p>0 summaries submitted 0 summaries processed</p> <p>△ No data available</p>
Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers																	
Key study	4																						
Supporting study	4																						
	<p>Study data: Inhalation</p> <table border="1"> <tr> <td>Studies with data</td> <td>△</td> <td>📄</td> <td>📊</td> <td>📑</td> <td>🔍</td> <td>Data waiving no waivers</td> </tr> </table>	Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers															
Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers																	
	<p>Study data: dermal</p> <table border="1"> <tr> <td>Studies with data</td> <td>△</td> <td>📄</td> <td>📊</td> <td>📑</td> <td>🔍</td> <td>Data waiving no waivers</td> </tr> </table>	Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers															
Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers																	

**Genetic toxicity**

Study results	Type of Study provided	Summaries																					
<p>△ Study data not processed for brief profile</p>	<p>Study data: in vitro</p> <table border="1"> <tr> <td>Studies with data</td> <td>△</td> <td>📄</td> <td>📊</td> <td>📑</td> <td>🔍</td> <td>Data waiving no waivers</td> </tr> <tr> <td>Key study</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td>12</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers	Key study	6						Other	12						<p>3 summaries submitted 0 summaries processed</p> <p>△ No data available</p>
Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers																	
Key study	6																						
Other	12																						
	<p>Study data: in vivo</p> <table border="1"> <tr> <td>Studies with data</td> <td>△</td> <td>📄</td> <td>📊</td> <td>📑</td> <td>🔍</td> <td>Data waiving no waivers</td> </tr> <tr> <td>Key study</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers	Key study	2													
Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers																	
Key study	2																						

**Carcinogenicity**

Study results	Type of Study provided	Summaries																												
<p>12 studies submitted 0 studies processed</p> <p>△ Study data not processed for brief profile</p>	<table border="1"> <tr> <td>Studies with data</td> <td>△</td> <td>📄</td> <td>📊</td> <td>📑</td> <td>🔍</td> <td>Data waiving no waivers</td> </tr> <tr> <td>Key study</td> <td>4</td> <td></td> <td></td> <td></td> <td>2</td> <td></td> </tr> <tr> <td>Supporting study</td> <td>2</td> <td></td> <td></td> <td></td> <td>2</td> <td></td> </tr> <tr> <td>Other</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers	Key study	4				2		Supporting study	2				2		Other	2						<p>0 summaries submitted 0 summaries processed</p> <p>△ No data available</p>
Studies with data	△	📄	📊	📑	🔍	Data waiving no waivers																								
Key study	4				2																									
Supporting study	2				2																									
Other	2																													