

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.

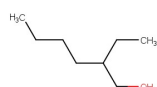
2-ethylhexan-1-ol

Brief Profile - Last updated: 22/01/2021



Substance Description

Substance identity



EC / List name:

IUPAC name: 2-ethylhexan-1-ol

Substance names and other identifiers

SMILES: CCCCC(CC)CO

InChI: InChI=1/C8H18O/c1-3-5-6-8(4-2)7-9/h8-9H,3-7H2,1-2H3

Type of substance: Mono constituent substance

Origin: Organic

Registered compositions: 23

Of which contain: 0 impurities relevant for classification

0 additives relevant for classification

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

EC / List no.: 203-234-3

CAS no.: 104-76-7

Index number:

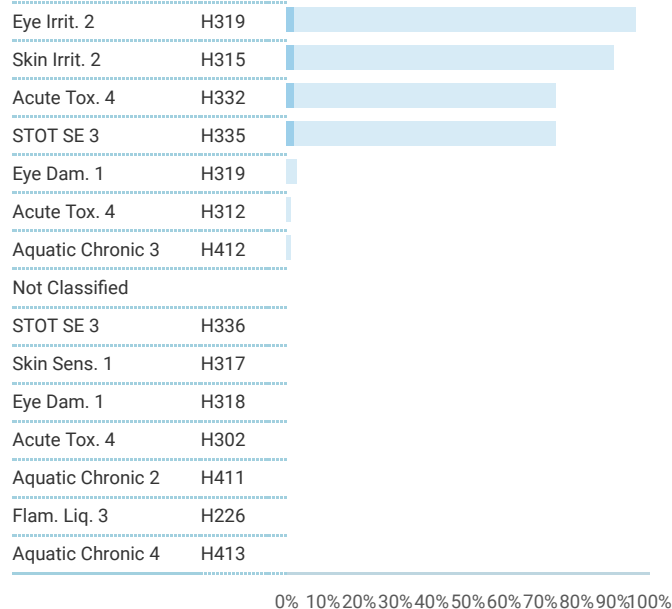
Molecular formula: C8H18O

Hazard classification & labelling

Warning! According to the classification provided by companies to ECHA in **REACH registrations** this substance causes serious eye irritation, is harmful if inhaled, causes skin irritation and may cause respiratory irritation.



Breakdown of all 3743 C&L notifications submitted to ECHA



- ✓ Harmonised Classification
- REACH registration dossiers notifications
- CLP notifications

Regulatory context

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

Registration

Pre-registration: Substance pre-registered under REACH.

Registration: This substance has 40 active registrations under REACH, 1 Joint Submission(s) and 1 Individual Submission(s).

Evaluation

Dossier Evaluation: Registration dossiers submitted to ECHA for this substance have been evaluated under REACH.

Substance Evaluation: Substance included in the Community Rolling Action Plan (CoRAP).

Authorisation

Candidate List:

Annex XIV (Authorisation List):

Restriction

Annex XVII (Restriction List):

Persistent Organic Pollutants Regulation (POPs)

List of substances
subject to the POPs
Regulation:

List of substances
proposed as POPs:

Classification Labelling & Packaging (CLP)

Harmonised C&L:

Seveso Annex I:

Notified C&L: 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:

European Union Observatory for Nanomaterials (EUON)

EUON:

About this substance

General

This substance has not been registered under the REACH Regulation, therefore as yet ECHA has not received any data about this substance from registration dossiers.

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

Consumer Uses

This substance is used in the following products: fuels, biocides (e.g. disinfectants, pest control products), lubricants and greases, plant protection products and inks and toners.

Other release to the environment of this substance is likely to occur from: outdoor use as processing aid, indoor use in close systems with minimal release (e.g. cooling liquids in refrigerators, oil-based electric heaters), outdoor use in close systems with minimal release (e.g. hydraulic liquids in automotive suspension, lubricants in motor oil and break fluids) and indoor use (e.g. machine wash liquids/detergents, automotive care products, paints and coating or adhesives, fragrances and air fresheners).

Article service life

ECHA has no public registered data on the use of this substance in activities or processes at the workplace.

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

This substance is used in the following products: lubricants and greases, coating products, fuels, hydraulic fluids, biocides (e.g. disinfectants, pest control products), fillers, putties, plasters, modelling clay, washing & cleaning products, heat transfer fluids, plant protection products, inks and toners, pH regulators and water treatment products and laboratory chemicals.

This substance is used in the following areas: agriculture, forestry and fishing, printing and recorded media reproduction, health services and scientific research and development. This substance is used for the manufacture of: chemicals.

This substance is used in the following activities or processes at workplace: transfer of chemicals, closed, continuous processes with occasional controlled exposure, closed batch processing in synthesis or formulation, closed processes with no likelihood of exposure, mixing in open batch processes, laboratory work, non-industrial spraying, treatment of articles by dipping and pouring, roller or brushing applications, heat / pressure transfer fluids in closed systems, hand mixing with intimate contact only with personal protective equipment available, transfer of substance into small containers, batch processing in synthesis or formulation with opportunity for exposure, in materials as fuel sources, with limited exposure to unburned product to be expected, greasing at high energy conditions and lubrication at high energy conditions and in partly open process.

Other release to the environment of this substance is likely to occur from: outdoor use as processing aid, indoor use (e.g. machine wash liquids/detergents, automotive care products, paints and coating or adhesives, fragrances and air fresheners), outdoor use in close systems with minimal release (e.g. hydraulic liquids in automotive suspension, lubricants in motor oil and break fluids) and indoor use in close systems with minimal release (e.g. cooling liquids in refrigerators, oil-based electric heaters).

Formulation or re-packing

This substance is used in the following products: lubricants and greases, fuels, coating products, inks and toners, plant protection products, fillers, putties, plasters, modelling clay, heat transfer fluids, metal working fluids, water treatment chemicals and oil and gas exploration or production products. 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: transfer of chemicals, laboratory work, closed batch processing in synthesis or formulation, transfer of substance into small containers, closed processes with no likelihood of exposure, closed, continuous processes with occasional controlled exposure, batch processing in synthesis or formulation with opportunity for exposure, mixing in open batch processes, production of mixtures or articles by tableting, compression, extrusion or pelletisation, roller or brushing applications and manual maintenance (cleaning and repair) of machinery.

Release to the environment of this substance can occur from industrial use: formulation of mixtures, in processing aids at industrial sites, manufacturing of the substance and formulation in materials.

Uses at industrial sites

This substance is used in the following products: coating products, lubricants and greases, hydraulic fluids, fillers, putties, plasters, modelling clay, heat transfer fluids, fuels, metal working fluids, oil and gas exploration or production products, inks and toners, pH regulators and water treatment products, laboratory chemicals and water treatment chemicals. This substance has an industrial use resulting in manufacture of another substance (use of intermediates).

This substance is used in the following areas: mining, printing and recorded media reproduction, health services and scientific research and development. This substance is used for the manufacture of: chemicals and plastic products.

This substance is used in the following activities or processes at workplace: transfer of chemicals, closed, continuous processes with occasional controlled exposure, closed batch processing in synthesis or formulation, closed processes with no likelihood of exposure, laboratory work, transfer of substance into small containers, batch processing in synthesis or formulation with opportunity for exposure, industrial spraying, mixing in open batch processes, roller or brushing applications, treatment of articles by dipping and pouring, production of mixtures or articles by tableting, compression, extrusion or pelletisation, heat / pressure transfer fluids in closed systems, in materials as fuel sources, with limited exposure to unburned product to be expected, lubrication at high energy conditions and in partly open process, greasing at high energy conditions and manual maintenance (cleaning and repair) of machinery.

Release to the environment of this substance can occur from industrial use: in processing aids at industrial sites, of substances in closed systems with minimal release, as an intermediate step in further manufacturing of another substance (use of intermediates), formulation of mixtures, manufacturing of the substance, in the production of articles, as processing aid and for thermoplastic manufacture.

Manufacture

This substance is used in the following activities or processes at workplace: transfer of chemicals, closed processes with no likelihood of exposure, closed, continuous processes with occasional controlled exposure, laboratory work, closed batch processing in synthesis or formulation, batch processing in synthesis or formulation with opportunity for exposure and transfer of substance into small containers.

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 and as an intermediate step in further manufacturing of another substance (use of intermediates).

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: wear protective gloves and/or clothing, and eye and/or face protection as specified by manufacturer/supplier; avoid breathing the dust, fume, gas, mist, vapours or spray.

Response statements

In case of incident: Call a poison center or doctor/physician if you feel unwell. If in eyes: rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

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

Registrants/suppliers

Active

- AAKO BV, Arnhemseweg 87 3832 GK Leusden Netherlands
- Afton Chemical S.P.R.L. (Woluwe), Alma Court Lenneke Marelaan, 8 B-1932 St-Stevens-Woluwe Belgium
- Arkema Arrmaz, 420 rue Estienne d'Orves 92700 Colombes Cedex France
- Ashland Services BV (0311), Noordweg 9 3336 LH Zwijndrecht Netherlands
- Baker Hughes Ltd, The Ark, 201 Talgarth Road Hammersmith W6 8BJ London United Kingdom
- BASF SE, Carl-Bosch-Str. 38 67056 Ludwigshafen am Rhein Rheinland-Pfalz Germany
- ChampionX Europe B.V., Oude Rijnhofweg 17 NL-2342BB Oegstgeest Oegstgeest Netherlands
- Charles River Laboratories Den Bosch B.V. OR06, Hambakenwetering 7 5231DD 's-Hertogenbosch Netherlands
- Chimcomplex S.A. Borzesti, 3, Industriilor Street 601124 Onesti Bacau Romania
- CHT Germany GmbH, Bismarckstr. 102 72072 Tuebingen Germany
- Covance Clinical Development SA 148, Parque Empresarial Las Tablas, Edificio 1 Calle Federico Mompou, 5 - 5 Planta 28050 Madrid Spain
- Covestro Deutschland AG, Kaiser-Wilhelm-Allee 60 51373 Leverkusen Germany
- CS Regulatory Ltd 1L-15, The Old Courthouse St Peters Churchyard DE11NN Derby Derbyshire United Kingdom
- Cytec Industries BV, Burgemeester van Lierplein 75 3134 ZB Vlaardingen Netherlands
- DEZA a.s., Masarykova 753 75701 Valasske Mezirici Czech Republic
- Dow Belgium B.V.B.A., Grotesteenweg 214 B-2600 Antwerpen (Berchem) Belgium Belgium
- DOW BENELUX B.V. - OR2, Postbus 48 4530 AA Terneuzen Netherlands
- Evonik Operations GmbH - ME01, Rellinghauser Straße 1-11 45128 Essen Germany
- Grupa Azoty Zakłady Azotowe Kędzierzyn Spółka Akcyjna, skr. poczt. 163 ul. Mostowa 30A 47-220 Kędzierzyn-Koźle Poland
- HH Compliance Ltd, Rubicon Building CIT Campus T12 Y275 Bishopstown Cork Ireland
- INEOS Derivatives Lavera SAS (Oxide), Avenue de la bienfaisance BP6 133117 Lavera France
- John Hogg Technical Solutions Ltd, Mellors Road Trafford Park M17 1PB Manchester United Kingdom
- KISCHEMICALS LLC, Gyártelep 3792 Sajóbáony Hungary
- Lubrizol Europe Coordination Center BVBA 01, Chaussee De Wavre, 1945 1945 Brussels Belgium
- Lubrizol France SAS, 25 Quai de France 76100 ROUEN France
- Momentive Performance Materials GmbH, Chempark Building V7 51368 Leverkusen NRW Germany
- Nalco Limited, P.O. Box 11, Winnington Avenue, CW8 4DX Northwich, Cheshire United Kingdom
- Nouryon Surface Chemistry AB, Stenunge Allé 3 - S-44485 Stenungsund - Sweden
- NP Automotive Coating (Europe) Ltd, Britannia Park Radway Road SN3 4ND Swindon Wiltshire United Kingdom
- OQ Chemicals Produktion GmbH & Co. KG, Otto-Roelen-Str. 3 46147 Oberhausen NRW Germany
- Perstorp Oxo AB, Sanden Ödsmåll 444 84 Stenungsund Sweden
- PETROCHINA INTERNATIONAL (LONDON) CO., LTD, 11th Floor, The Adelphi, 1-11 John Adam Street, WC2N 6HT LONDON United Kingdom
- PPG Industries Italia Srl Società soggetta a direzione e coordinamento da parte di PPG Industries Inc., Via Serra, 1 15028 Quattordio Italy
- PPG Kansai Automotive Finishes France SAS, Les Dix Muids 59583 Marly France
- REACHLaw Ltd., Vänrikinkuja 3 JK 21 02600 Espoo Finland
- SABIC Petrochemicals B.V., Europaboulevard 1 6135 LD Sittard Netherlands
- SIGMA-ALDRICH CHEMIE GMBH, Riedstrasse 2 89555 Steinheim Germany
- SO.IT.EM. SRL, via R. Cozzi, 34 20125 Milano Milano Italy
- TÜV SÜD Iberia S.A.U. (051), Ronda Can Fatjó 13 08290 Cerdanyola del Vallès Barcelona Spain

Inactive

- N.V. ASAHI PHOTOPRODUCTS (EUROPE) S.A., Paepsem Business Park Boulevard Paepsem 22 1070 Brussels Belgium

Substance names and other identifiers

Regulatory process names

1-Hexanol, 2-ethyl-	Other	2-ethylhexan-1-ol	EC Inventory, Substance Evaluation - CoRAP, REACH pre-registration, Occupational Exposure Limits - 4th list - Indicative OELVs
2-Aethylhexanol	Other		
2-Ethyl-1-hexanol	Other, FCM and Articles Regulation, Annex I - Authorised Substances, FCMs Recycled Plastic & Articles Regulation - Annex I - Authorised Use	2-Ethylhexanol	Other
		2-Ethylhexyl alcohol	Other
		Alcohol, 2-ethylhexyl	Other
		Ethylhexanol	Other
		Octyl alcohol	Other

Translated names

CAS names

IUPAC names

2 ethylhexan 1 ol	C&L Inventory	ETHYLHEXANOL-2	C&L Inventory
2-ethyl hexanol	C&L Inventory	Isooctyl alcohol, , Isooctanol, 2-Ethyl-1-hexanol	Registration dossier
2-ethylhexal-1-ol	C&L Inventory	Octanol	Registration dossier
Ethyl hexyl alcohol	Registration dossier		

Trade names

1-Ethyl-1-hexanol	Registration dossier	2-Ethylhexanol; Ethylhexanol	Registration dossier
1-Hexanol, 2-ethyl- (8Cl, 9Cl)	Registration dossier	2-Ethylhexylalkohol	Registration dossier
2-EH	C&L Inventory, Registration dossier	2-Etil esanolo	Registration dossier
2-Ethyl-hexanol-1	Registration dossier	2-Äthylhexanol	C&L Inventory
2-ethylhexanol (2-EH)	Registration dossier	alcol 2-etilesilico	Registration dossier
2-Ethylhexanol iso-Octanol	Registration dossier	Ethylhexyl alcohol	Registration dossier
2-Ethylhexanol-1	Registration dossier	Hexanol, 2-ethyl-	Registration dossier
2-Ethylhexanol; 2-Ethylhexylalcohol; Isooctanol; Octylalcohol; 2-EH	Registration dossier	Isooctanol	Registration dossier
		isoottanolo	Registration dossier

Other names

2 ethyl hexanol	REACH pre-registration
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Other identifiers

104-76-7	CAS number	EC Inventory, C&L Inventory, Substance Evaluation - CoRAP, Registration dossier, REACH pre-registration, Other, Occupational Exposure Limits - 4th list - Indicative OELVs, FCM and Articles Regulation, Annex I - Authorised Substances, FCMs Recycled Plastic & Articles Regulation - Annex I - Authorised Use	111675-57-1	CAS number	Other
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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	C Summaries	1 summary submitted 1 summary processed
C Physical state at 20°C and 1013 hPa Liquid (100%) [2]		Studies with data Key study	Data waiving no waivers	Physical state at 20°C and 1013 hPa Liquid (100%)
C Odour Slight (50%), Other (50%) [2]				
C Substance type Organic (100%) [2]				

Melting/freezing point

Study results	2 studies submitted 1 study processed	Type of Study provided	R Summaries	1 summary submitted 1 summary processed
R Melting / freezing point -89 °C [1]		Studies with data Key study Supporting study	Data waiving no waivers	Melting / freezing point at 101 325 Pa -89 °C

Boiling point

Study results	3 studies submitted 2 studies processed	Type of Study provided	R Summaries	1 summary submitted 1 summary processed
R Boiling point 184 - 186 °C @ 101.3 kPa [2]		Studies with data Key study Supporting study	Data waiving no waivers	Boiling point at 101 325 Pa 185 °C

Density

Study results	2 studies submitted 2 studies processed	Type of Study provided	R Summaries	1 summary submitted 1 summary processed
R Density 0.833 g/cm³ @ 20 °C [1]		Studies with data Key study	Data waiving no waivers	Relative density at 20°C 0.832
R Relative density 0.832 @ 20 °C [1]				

Vapour pressure

Study results

3 studies submitted
1 study processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R Vapour pressure

93 - 380 Pa @ 20 - 50 °C [3]

Studies with data



Data waiving

no waivers

Vapour pressure

93 Pa @ 20 °C

Key study	1			
Supporting study	1		1	

Partition coefficient

Study results

2 studies submitted
1 study processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R Log Pow

2.9 @ 25 °C and pH 7 [1]

Studies with data



Data waiving

no waivers

Log Kow (Log Pow)

2.9 @ 25 °C

Key study	1			
Supporting study			1	

Water solubility

Study results

2 studies submitted
1 study processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R Water solubility (mass/vol.)

900 mg/L @ 20 °C and pH 5.8 [1]

Studies with data



Data waiving

no waivers

Water solubility

900 mg/L @ 20 °C

Key study	1			
Supporting study	1			

Solubility in organic solvents / fat solubility

⚠ Data not provided by the registrant

Surface tension

Study results

1 study submitted
1 study processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R Surface tension

47 mN/m @ 810 mg/L and 20 °C [1]

Studies with data



Data waiving

no waivers

Surface tension at 20 °C

47 mN/m @ 810 mg/L

Key study	1			
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Flash point

Study results

2 studies submitted
2 studies processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R Flash point

75 - 77 °C @ 101.3 kPa [2]

Studies with data



Data waiving

no waivers

Flash point at 101 325 Pa

75 °C

Key study	2			
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Auto flammability

Study results





2 studies submitted
1 study processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R Autoflammability / self-ignition
280 °C @ 101.7 kPa [1]

Studies with data				
Key study	1			
Supporting study	1			

Data waiving
no waivers

Autoflammability / self-ignition at 101 325 Pa
280 °C

Flammability

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

 No automatically processable data submitted

Studies with data				
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Data waiving
Sci.
unjustified 1

 No data available

Explosiveness

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

 No automatically processable data submitted

Studies with data				
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Data waiving
Sci.
unjustified 1

 No data available

Oxidising

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

 No automatically processable data submitted

Studies with data				
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Data waiving
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
1 study processed

Type of Study provided

Summaries

1 summary submitted
0 summaries processed

C Dissociating properties
No (100%) [1]

Studies with data				
Weight of evidence			1	2

Data waiving
no waivers

 No automatically processable data submitted

R Dissociation constant
15.75 @ 25 °C [1]

Viscosity

Study results

2 studies submitted
2 studies processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

R dynamic viscosity (in mPa s)
4.3 - 9.845 [3]

Studies with data



Key study

2

Data waiving

no waivers

Dynamic viscosity at 20 °C
9.8 mPa.s

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

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

0 summaries submitted
0 summaries processed

⚠ No automatically processable data submitted

Studies with data



Supporting study

1

Data waiving

no waivers

⚠ No data available

Hydrolysis

Study results

1 study 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

Other

1

⚠ 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

4 studies submitted
1 study processed

Type of Study provided

C Summaries

1 summary submitted
1 summary processed

C Interpretation of results
Readily biodegradable (100%) [1]

Studies with data



Key study

1

Supporting study

2

1

Data waiving

no waivers

Biodegradation in water
Readily biodegradable (100%)

Biodegradation in water & sediment - simulation tests

Study results

0 studies submitted
0 studies processed

Type of Study provided

Summaries

1 summary submitted
0 summaries processed

⚠ Study data not processed for brief profile

Studies with data



Data waiving

no waivers

⚠ No automatically processable data submitted

Biodegradation in soil

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

1 summary submitted
0 summaries processed

⚠ Study data not processed for brief profile

Studies
with data



Data waiving

Other

1

⚠ No automatically processable data submitted

Bioaccumulation: aquatic / sediment

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

Other

1

⚠ No data available

Supporting
study

1

Bioaccumulation: terrestrial

⚠ Data not provided by the registrant

Adsorption/desorption

Study results

2 studies submitted
0 studies processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

⚠ No automatically processable data submitted

Studies
with data



Data waiving

Other

1

Koc at 20°C

131.1

Supporting
study

1

Henry's 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

1 summary submitted
1 summary 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	17 µg/L (1)
Intermittent releases (freshwater)	170 µg/L (1)
Marine water	1.7 µg/L (1)
Intermittent releases (marine water)	-
Sewage treatment plant (STP)	10 mg/L (1)
Sediment (freshwater)	284 µg/kg sediment dw (1)
Sediment (marine water)	28.4 µg/kg sediment dw (1)

Hazard for Air

Air	No hazard identified (1)
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Hazard for Terrestrial Organism

Soil	47 µg/kg soil dw (1)
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Hazard for Predators

Secondary poisoning	55 mg/kg food (1)
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Short-term toxicity to fish

Study results 6 studies submitted
2 studies processed

Type of Study provided

R Summaries 1 summary submitted
1 summary processed

P/R Results

LC50 (4 days) 17.1 - 28.2 mg/L [2]
LC100 (4 days) 21 mg/L [1]
NOEC (4 days) 14 mg/L [1]

Studies with data

Key study	2			
Supporting study	1			1
Other	1			1

Data waiving

no waivers

LC50 for freshwater fish

17.1 mg/L

Long-term toxicity to fish

Study results 1 study submitted
0 studies processed

Type of Study provided

Summaries 0 summaries submitted
0 summaries processed

⚠ No automatically processable data submitted

Studies with data

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Data waiving

Other 1

⚠ No data available

Short-term toxicity to aquatic invertebrates

Study results 4 studies submitted
1 study processed

Type of Study provided

R Summaries 1 summary submitted
1 summary processed

P/R Results

EC50 (48 h) 39 mg/L [1]

Studies with data

Key study	1			
Supporting study				2
Other			1	

Data waiving

no waivers

EC50 / LC50 for freshwater invertebrates

39 mg/L

Long-term toxicity to aquatic invertebrates

Study results

1 study 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

1

⚠ No data available

Toxicity to aquatic algae and cyanobacteria

Study results

3 studies submitted
1 study processed

Type of Study provided

R Summaries

1 summary submitted
1 summary processed

P/R Results

EC50 (72 h) 11.5 - 16.6 mg/L [2]

EC10 (72 h) 3.2 - 5.3 mg/L [2]

EC0 (72 h) 2 mg/L [1]

Studies
with data



Data waiving

no waivers

Key study

1

Supporting
study

1

Other

1

EC50 for freshwater algae

16.6 mg/L

EC10 or NOEC for freshwater algae

5.3 mg/L

Toxicity to aquatic plants other than algae

⚠ Data not provided by the registrant

Toxicity to microorganisms

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

1

⚠ No data available

Supporting
study

1

Sediment toxicity

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

1 summary submitted
0 summaries processed

⚠ No automatically processable data submitted

Studies
with data



Data waiving

Other

1

⚠ No automatically processable data submitted

Endocrine disrupter testing in aquatic vertebrates – in vivo

⚠ Data not provided by the registrant

Toxicity to terrestrial macroorganisms except arthropods

Study results

1 study submitted
0 studies processed

Type of Study provided

Summaries

1 summary submitted
0 summaries processed

⚠ No automatically processable data submitted

Studies
with data











Data waiving





Other





1

⚠ No automatically processable data submitted

Toxicity to terrestrial arthropods				
Study results	1 study submitted 0 studies processed	Type of Study provided	Summaries	1 summary submitted 0 summaries processed
⚠ No automatically processable data submitted		Studies with data    	Data waiving Other 1	⚠ No automatically processable data submitted

Toxicity to terrestrial plants				
Study results	1 study submitted 0 studies processed	Type of Study provided	Summaries	1 summary submitted 0 summaries processed
⚠ No automatically processable data submitted		Studies with data    	Data waiving Other 1	⚠ No automatically processable data submitted

Toxicity to soil microorganisms				
Study results	1 study submitted 0 studies processed	Type of Study provided	Summaries	1 summary submitted 0 summaries processed
⚠ No automatically processable data submitted		Studies with data    	Data waiving Other 1	⚠ No automatically processable data submitted

Toxicity to birds				
Study results	1 study submitted 0 studies processed	Type of Study provided	Summaries	1 summary submitted 0 summaries processed
⚠ No automatically processable data submitted		Studies with data    	Data waiving Other 1	⚠ No automatically processable data submitted

Toxicity to mammals			⚠ Data not provided by the registrant	
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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

1 summary submitted
1 summary 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
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Systemic Effects

Long-term:	(DNEL) 12.8 mg/m³	repeated dose toxicity
Acute /short term:	Low hazard (no threshold derived)	

Local Effects

Long-term:	(DNEL) 53.2 mg/m³	irritation (respiratory tract)
Acute /short term:	(DNEL) 53.2 mg/m³	irritation (respiratory tract)

DERMAL Exposure	Threshold	Most sensitive study
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Systemic Effects

Long-term:	(DNEL) 23 mg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	

Local Effects

Long-term:	Medium hazard (no threshold derived)	
Acute /short term:	Medium hazard (no threshold derived)	

EYE Exposure

Medium hazard (no threshold derived)

Data for the GENERAL POPULATION

INHALATION Exposure	Threshold	Most sensitive study
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Systemic Effects

Long-term:	(DNEL) 2.3 mg/m³	repeated dose toxicity
Acute /short term:	Low hazard (no threshold derived)	

Local Effects

Long-term:	(DNEL) 26.6 mg/m³	irritation (respiratory tract)
Acute /short term:	(DNEL) 26.6 mg/m³	irritation (respiratory tract)

DERMAL Exposure	Threshold	Most sensitive study
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Systemic Effects

Long-term:	(DNEL) 11.4 mg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	

Local Effects

Long-term:	Medium hazard (no threshold derived)	
Acute /short term:	Medium hazard (no threshold derived)	

ORAL Exposure	Threshold	Most sensitive study
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Systemic Effects

Long-term:	(DNEL) 1.1 mg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	

EYE Exposure

Medium hazard (no threshold derived)

Toxicokinetics, metabolism, and distribution





Study results

Study data: basic toxicokinetics 6 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Study data: basic toxicokinetics

Studies with data				
Key study	3			1
Supporting study	1			
Other	1			

Data waiving

no waivers

M/C

Summaries

1 summary submitted
1 summary processed

Bioaccumulation potential:

No bioaccumulation potential




Absorption values

Dermal: 6.6 %

Study data: dermal absorption 2 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Study data: dermal absorption

Studies with data				
Key study	1			
Supporting study	1			

Data waiving

no waivers

Acute toxicity

Study results

oral 13 studies submitted
1 study processed

P/R Results
LD50 2 047 mg/kg bw (rat) [1]

M/C Interpretations of results
Not classified [1]

inhalation 8 studies submitted
1 study processed

P/R Results
LC50 (4 h) 890 - 5 300 mg/m³ air (rat) [1]

M/C Interpretations of results
Toxicity Category IV [1]

dermal 3 studies submitted
1 study processed

P/R Results
LD0 3 000 mg/kg bw (rat) [1]




M/C Interpretations of results
Not classified [1]

other routes 2 studies submitted
0 studies processed

⚠ No automatically processable data submitted

Type of Study provided

oral

Studies with data					Data waiving
Key study	1				no waivers
Supporting study	2				
Other	10				

inhalation

Studies with data					Data waiving
Key study	1				no waivers
Other	7				

dermal

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

other routes

Studies with data					Data waiving
Other	2				no waivers

M/C

Summaries

1 summary submitted
1 summary processed

Oral route:

Adverse effect observed LD50 2 047 mg/kg bw

Dermal route:

No adverse effect observed Discriminating dose 3 000 mg/kg bw

Irritation / corrosion

Study results

Study data: skin 9 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Study data: skin

Studies with data					Data waiving
Key study	1				Sci. unjustified 1
Other	6			1	

M/C Summaries

1 summary submitted
1 summary processed

Skin

Adverse effect observed (irritating)

Eye

Adverse effect observed (irritating)





Respiratory

Adverse effect observed (irritating)

Study data: eye 8 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Study data: eye

Studies with data					Data waiving
Key study	2				Sci. unjustified 1
Supporting study	1				
Other	3			1	

Sensitisation

Study results

Study data: skin 1 study submitted
0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Study data: skin

Studies with data					Data waiving
					Sci. unjustified 1

M/C Summaries

1 summary submitted
1 summary processed

Skin sensitisation

No adverse effect observed (not sensitising)

Study data: respiratory 0 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Study data: respiratory

Studies with data					Data waiving
					no waivers

Repeated dose toxicity

Study results

Study data: oral 16 studies submitted
2 studies processed

P/R Results

NOAEL (rat): 250 mg/kg bw/day [1]
NOAEL (mouse): 250 mg/kg bw/day [1]
NOEL (rat): 125 mg/kg bw/day [1]
NOEL (mouse): 125 mg/kg bw/day [1]

Study data: inhalation 1 study submitted
1 study processed

P/R Results

NOAEC (rat): 638.4 mg/m³ air [1]
NOAEC (rat): 120 ppm [1]





Study data: dermal 2 studies submitted
0 studies processed

⚠ No automatically processable data submitted

Type of Study provided

Study data: oral

Studies with data



				
Key study	2			
Other	14			

Data waiving

no waivers

Study data: inhalation

Studies with data





				
Key study	1			

Data waiving

no waivers

Study data: dermal

Studies with data

				
Supporting study	2			

Data waiving

no waivers

M/C Summaries

1 summary submitted
1 summary processed

Oral route - systemic effects:

Adverse effect observed NOAEL 200 mg/kg bw/day (chronic, mouse)

Inhalation route - systemic effects:

No adverse effect observed NOAEC 638.4 mg/m³ (subchronic, rat)

Genetic toxicity

Study results

Study data: in vitro 24 studies submitted
0 studies processed

⚠ Study data not processed for brief profile





Study data: in vivo 5 studies submitted
0 studies processed

⚠ Study data not processed for brief profile

Type of Study provided

Study data: in vitro

Studies with data

				
Key study	3			
Supporting study	5			
Other	12			4

Data waiving

no waivers

Study data: in vivo

Studies with data

				
Supporting study	5			

Data waiving

no waivers

Summaries

1 summary submitted
0 summaries processed





⚠ No automatically processable data submitted

Carcinogenicity			
Study results	2 studies submitted 0 studies processed	Type of Study provided	Summaries 1 summary submitted 0 summaries processed
⚠ Study data not processed for brief profile		<div> Studies with data <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div> Data waiving no waivers </div>	⚠ No automatically processable data submitted
		Key study 2	

Toxicity to reproduction			
Study results		Type of Study provided	M/C Summaries 1 summary submitted 1 summary processed
Study data: reproduction	3 studies submitted 0 studies processed	Study data: reproduction	Effect on fertility Oral route: No adverse effect observed NOAEL 149 mg/kg bw/day (subchronic, rat)
⚠ Study data not processed for brief profile		<div> Studies with data <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div> Data waiving Other 1 </div>	
		Key study 1	Effect on developmental toxicity Oral route: No adverse effect observed NOAEL 191 mg/kg bw/day (subacute, mouse)
		Other 1	Dermal route: No adverse effect observed NOAEL 2 520 mg/kg bw/day (subacute, rat)
Study data: developmental	8 studies submitted 0 studies processed	Study data: developmental	Inhalation route: No adverse effect observed NOAEC 850 mg/m³ (subacute, rat)
⚠ Study data not processed for brief profile		<div> Studies with data <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div> Data waiving Sci. unjustified 1 </div>	
		Weight of evidence 4	
		Other 3	
Study data: other studies	0 studies submitted 0 studies processed	Study data: other studies	
⚠ Study data not processed for brief profile		<div> Studies with data <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div> Data waiving no waivers </div>	

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

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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