

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product Identifier**

**Product Description:** Hydroxylamine hydrochloride  
**Cat No. :** **A15398**  
**Synonyms** Hydroxylammonium chloride, Oxammonium hydrochloride  
**CAS No** 5470-11-1  
**Molecular Formula** H3 N O . H Cl

**Relevant identified uses of the substance or mixture and uses advised against**

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

**Details of the supplier of the safety data sheet**

<b>Importer</b>	<b>Supplier</b>
Fisher Scientific Korea	Alfa Aesar
D5,D6, Incheon Airport Logistics Complex	Thermo Fisher Scientific Chemicals, Inc.
150, Gonghangdong-Ro Mapo-Gu 296 Beon-Gil	30 Bond Street
Jung-Gu, Incheon 400-340	Ward Hill, MA 01835-8099
Tel: +82-2-6196-5500	
Fax: +82-2-6196-5501	

**E-mail address** Chem.KR@thermofisher.com

**Emergency Telephone Number**

**Emergency telephone:** **Medical: +(82) 070-7686-0086 or + 1-703-741-5970**  
**CHEMTREC: 1-800-424-9300 or + 1-703-527-3887**  
**Korea: 00-308-13-2549** (24 hours a day, 7 days a week)

**SECTION 2: HAZARDS IDENTIFICATION**

**Classification of the substance or mixture**

**Physical hazards**

Explosives Unstable explosive

Substances/mixtures corrosive to metal Category 1

**Health hazards**

Acute Oral Toxicity Category 4

Acute Dermal Toxicity Category 4

Skin Corrosion/Irritation Category 2

Serious Eye Damage/Eye Irritation Category 2

Skin Sensitization Category 1

Carcinogenicity Category 2

Specific target organ toxicity - (repeated exposure) Category 2

**Environmental hazards**

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Acute aquatic toxicity

Category 1

## Label Elements



Signal Word

Danger

### Hazard Statements

- H200 - Unstable explosive
- H290 - May be corrosive to metals
- H315 - Causes skin irritation
- H317 - May cause an allergic skin reaction
- H319 - Causes serious eye irritation
- H351 - Suspected of causing cancer
- H373 - May cause damage to organs through prolonged or repeated exposure
- H400 - Very toxic to aquatic life
- H302 + H312 - Harmful if swallowed or in contact with skin

### Precautionary Statements

#### Prevention

- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P234 - Keep only in original packaging
- P240 - Ground and bond container and receiving equipment
- P250 - Do not subject to grinding/shock/friction
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P264 - Wash hands and face thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P272 - Contaminated work clothing should not be allowed out of the workplace
- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P273 - Avoid release to the environment

#### Response

- P370 + P372 + P380 + P373 - In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives
- P390 - Absorb spillage to prevent material damage
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P330 - Rinse mouth
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P321 - Specific treatment (see supplemental first aid instructions on this label)
- P362 + P364 - Take off contaminated clothing and wash it before reuse
- P332 + P313 - If skin irritation occurs: Get medical advice/attention
- P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337 + P313 - If eye irritation persists: Get medical advice/attention
- P308 + P313 - IF exposed or concerned: Get medical advice/attention
- P314 - Get medical advice/attention if you feel unwell
- P391 - Collect spillage

#### Storage

- P401 - Store in accordance with local regulations

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P406 - Store in corrosion resistant polypropylene container with a resistant inliner

P405 - Store locked up

## Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

## Other Hazards

May form explosible dust-air mixture if dispersed

Toxic to terrestrial vertebrates

## NFPA

Health  
3

Flammability  
3

Instability  
1

Physical hazards  
N/A

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
Hydroxylamine, hydrochloride	Hydroxylammonium chloride, Oxammonium hydrochloride	5470-11-1	KE-20602	99 - 100

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

#### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

#### Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

#### Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

#### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Most important symptoms and effects, both acute and delayed

May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

### Indication of any immediate medical attention and special treatment needed

#### Notes to Physician

Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

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## Extinguishing media

### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

### **Extinguishing media which must not be used for safety reasons**

No information available.

## Special hazards arising from the substance or mixture

Risk of explosion by shock, friction, fire or other sources of ignition. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses. Fine dust dispersed in air may ignite.

## **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen chloride gas.

## Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Remove all sources of ignition. Take precautionary measures against static discharges.

### Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

### Methods and Material for Containment and Cleaning Up

Remove all sources of ignition. Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Corrosives area.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
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Hydroxylamine, hydrochloride	5470-11-1	Not listed	Not listed	Not listed
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Component	CAS No	European Union	The United Kingdom	Germany
Hydroxylamine, hydrochloride	5470-11-1	Not listed	Not listed	Not listed

## Biological Exposure Indices

Component	CAS No	Biological Exposure Indices
Hydroxylamine, hydrochloride	5470-11-1	Not listed

## Exposure Controls

### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles

#### Hand Protection

Protective gloves

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

### Personal protective equipment

#### Respiratory Protection

Use only those certified by the Korea Occupational Safety and Health Administration.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

#### Recommended Filter type:

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

## Environmental exposure controls

Prevent product from entering drains Do not allow material to contaminate ground water system Local authorities should be advised if significant spillages cannot be contained

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance (Physical State, Color, White Solid etc.)

Odor

Odorless

Odor Threshold

No data available

pH

2.5-3.5

5% aq.sol

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**Melting Point/Range** 155 - 158 °C / 311 - 316.4 °F  
**Softening Point** No data available  
**Boiling Point/Range** No information available  
**Flash Point** No information available **Method -** No information available

**Evaporation Rate** Not applicable Solid  
**Flammability (solid,gas)** No information available  
**Explosion Limits** No data available

**Vapor Pressure** negligible  
**Vapor Density** Not applicable Solid  
**Specific Gravity / Density** 1.6700  
**Bulk Density** No data available  
**Water Solubility** 560 g/L (20°C)  
**Solubility in other solvents** No information available

## Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
Hydroxylamine, hydrochloride	5470-11-1	No data available

**Autoignition Temperature** No data available  
**Decomposition Temperature** 152 °C  
**Viscosity** Not applicable Solid  
**Explosive Properties** No information available  
**Oxidizing Properties** No information available

**Molecular Formula** H3 N O . H Cl  
**Molecular Weight** 69.49

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity** Yes

**Chemical Stability** Moisture sensitive. Air sensitive.

### Possibility of Hazardous Reactions

**Hazardous Polymerization** Hazardous polymerization does not occur.  
**Hazardous Reactions** None under normal processing.

### Conditions to Avoid

Avoid dust formation. Incompatible products. Excess heat. Exposure to air. Exposure to moist air or water.

### Incompatible Materials

Strong oxidizing agents. Heavy metals.

### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride gas.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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

**Product Information**

**Information on expected route of exposure**

<b>Inhalation</b>	May be harmful if inhaled. May cause irritation.
<b>Ingestion</b>	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Eyes</b>	Irritating to eyes.
<b>Skin</b>	Harmful in contact with skin. Irritating to skin.

**Information on Health Hazards**

**(a) acute toxicity;**

<b>Oral</b>	Category 4
<b>Dermal</b>	Category 4
<b>Inhalation</b>	No data available

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydroxylamine, hydrochloride	5470-11-1	LD50 = 141 mg/kg ( Rat )	No data available	No data available

**(b) skin corrosion/irritation;** Category 2

**(c) serious eye damage/irritation;** Category 2

**(d) respiratory or skin sensitization;**

<b>Respiratory</b>	No data available
<b>Skin</b>	Category 1

Component	CAS No	Test method	Test species	Study result
Hydroxylamine, hydrochloride	5470-11-1	No data available	No data available	No data available

May cause sensitization by skin contact

**(e) germ cell mutagenicity;** No data available

Component	CAS No	Test method	Test species	Study result
Hydroxylamine, hydrochloride	5470-11-1	No data available	No data available	No data available

**(f) carcinogenicity;** Category 2

Component	CAS No	Test method	Test species / Duration	Study result
Hydroxylamine, hydrochloride	5470-11-1	No data available	No data available	No data available

Limited evidence of a carcinogenic effect

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Hydroxylamine, hydrochloride	5470-11-1	Not listed	Not listed	Not listed	Not listed	Not listed

**(g) reproductive toxicity;** No data available

Component	CAS No	Test method	Test species /	Study result

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			Duration	
Hydroxylamine, hydrochloride	5470-11-1	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 2

Target Organs Gastrointestinal tract (GI), spleen, Thyroid, Blood.

(j) aspiration hazard; Not applicable  
Solid

## Other Adverse Effects

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

## SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity effects** Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Hydroxylamine, hydrochloride	5470-11-1	LC50= 1-10 mg/L/48h (Leuciscus idus)	No data available	No data available	No data available

## Persistence and degradability

**Persistence** Soluble in water, Persistence is unlikely, based on information available.  
**Degradation in sewage treatment plant** Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative potential** Bioaccumulation is unlikely

**Mobility in soil** The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

## Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
Hydroxylamine, hydrochloride	5470-11-1	Not listed

**Other adverse effects** No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

**Waste from Residues/Unused Products** Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

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**Other Information** Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

## SECTION 14: TRANSPORT INFORMATION

**Road and Rail Transport**

**UN-No** UN2923  
**Proper Shipping Name** Corrosive solid, toxic, n.o.s.  
**Technical Shipping Name** Hydroxylammonium chloride  
**Hazard Class** 8  
**Subsidiary Hazard Class** 6.1  
**Packing Group** III

**IATA**

**UN-No** UN2923  
**Proper Shipping Name** Corrosive solid, toxic, n.o.s.  
**Technical Shipping Name** Hydroxylammonium chloride  
**Hazard Class** 8  
**Subsidiary Hazard Class** 6.1  
**Packing Group** III

**IMDG/IMO**

**UN-No** UN2923  
**Proper Shipping Name** Corrosive solid, toxic, n.o.s.  
**Technical Shipping Name** Hydroxylammonium chloride  
**Hazard Class** 8  
**Subsidiary Hazard Class** 6.1  
**Packing Group** III  
**Marine Pollutant** Dangerous for the environment  
 Product is a marine pollutant according to the criteria set by IMDG/IMO

**Special Precautions for User** No special precautions required

## SECTION 15: REGULATORY INFORMATION

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

**Legend:** X - Listed '-' - Not Listed

**International Inventories**

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Hydroxylamine, hydrochloride	5470-11-1	KE-20602	X	226-798-2	X	X	-	X	X	X	X

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

**Korean National Regulations**

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Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Hydroxylamine, hydrochloride	5470-11-1	Annex 1 - KE-20602	Not applicable	Listed

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Hydroxylamine, hydrochloride	5470-11-1	97-1-411 (>1%)	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Hydroxylamine, hydrochloride	5470-11-1	> 1% (CCA)	Not applicable	Not applicable

CCA = Chemical Control Act

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

**National Fire Association - Dangerous Substances** Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable	Not applicable	9. Hydroxylamine salts 100 kg	Not applicable

**Control Parameters**

Component	CAS No	Korea	Biological Exposure Indices
Hydroxylamine, hydrochloride	5470-11-1	Not listed	Not listed

**US Management Information**

OSHA - Occupational Safety and Health Administration

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Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable

CERCLA Not applicable

Component	CAS No	CERCLA EHS RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Hydroxylamine, hydrochloride	5470-11-1	Not applicable	Not applicable	Not applicable

## CLP Classification - Regulation (EC) No 1272/2008

Danger.

H290 - May be corrosive to metals. H301 - Toxic if swallowed. H312 - Harmful in contact with skin. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H351 - Suspected of causing cancer. H373 - May cause damage to organs through prolonged or repeated exposure. H400 - Very toxic to aquatic life. May form combustible dust concentrations in air.

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

VOC (volatile organic compound)

### Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

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Prepared By	Health, Safety and Environmental Department
Creation Date	16-Nov-2010
Revision Date	09-Apr-2022
Revision Number	4
Revision Summary	SDS sections updated.

## MOEL's Public Notice No. 2020-130 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**