



Piperidine

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of Compilation	: April 05, 2012
Date of Revision	: February 02, 2021
Revision due date	: January 2024
Revision Number	: 14
Version Name	: 0025Nr Ghs14 Div.2 sds Piperidine
Supersedes date	: September 08, 2020
Supersedes version	: 0025Nr Ghs13 Div.2 sds Piperidine

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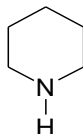
According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 1 : Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product identification :Piperidine
 CASRN : 110-89-4
 EC# :203-813-0
 Trade name :Piperidine
 Systematic Name :Piperidine
 Synonyms :Azacyclohexane; Cyclopentimine; Cypentil; Hexahydropyridine; Hexazane; Pentamethyleneimine; Pentamethylenimine; Pyridine, Hexahydro-

Molecular Formula $C_5H_{11}N$
 Structural Formula:



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

1.2.1. Identified uses

It is used as a solvent and intermediate; curing agent for rubber and epoxy resins; catalyst for condensation reactions; ingredient in oils and fuels; complexing agent and as a synthetic flavoring. Present in Table 2 of the 1988 Convention of intermediates that are listed as precursors to the illicit manufacture of narcotic drugs and psychotropic substances.

Uses advised against: None

1.3 Details of the supplier of the safety data sheet

REGISTERED OFFICE ADDRESS: Jubilant Ingrevia Limited, Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh -244223, India.
 Phone No: +91-5924-252353 to 252360.

MANUFACTURED AT: D-6/1&2, MIDC, Kurkumbh, Industrial Area, Taluka Daund, District Pune, Maharashtra 413802

HEAD OFFICE: Jubilant Ingrevia Limited., Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh, 201301 - India
 T +91-120-4361000 - F +91-120-4234881 / 84 / 85 / 87 / 95 / 96
support@jubl.com - www.jubl.com

1.4 Emergency telephone

CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBERS :

North America: 1-800-255-3924
International: +1-813-248-0585
India: 000-800-100-4086
Brazil: 0-800-591-6042
Mexico: 01-800-099-0731

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance

2.1.1. GHS US Classification

Flammable Liquid: Category 2	H225
Acute Toxicity Oral: Category 4	H302
Acute Toxicity Dermal: Category 3	H311
Acute toxicity inhalation: Category 3	H331
Skin corrosion/irritation: Category 1B	H314
Serious Eye Damage/Eye Irritation Category 1	H318

2.2 Label elements

According to regulation (EC) 1272/2008

Pictograms:





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GHS05 – Corrosive GHS02 – flammable GHS06-Toxic

Signal word: Danger!

Hazard and precautionary statements:

HAZARD STATEMENTS

- H225: Highly flammable liquid and vapour.
- H302: Harmful if swallowed
- H311: Toxic in contact with skin.
- H331: Toxic if inhaled.
- H314: Causes severe skin burns and eye damage.

PRECAUTIONARY STATEMENTS

- P210: Keep away from heat/sparks/open flames/.../hot surfaces. ... No smoking.
- P233: Keep container tightly closed
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ventilating/lighting/.../ equipment.
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P270: Do not eat, drink or smoke when using this product.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well-ventilated area.
- P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P370+P378: In case of fire: Use water for extinction.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P330: Rinse mouth.
- P337+P313: If eye irritation persists: Get medical advice/attention
- P403+233: Store in a well ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container to local/regional/national/international regulations.

2.3 Other Hazards

- Substance is not classified as PBT nor as vPvB. For further details see section 12.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance	CAS No.	EINECS No.	Purity	GHS US Classification
Piperidine	110-89-4	203-813-0	>98%	Flammable Liquid: Category 2 H225 Acute Toxicity Oral: Category 4 H302 Acute Toxicity Dermal: Category 3 H311 Acute toxicity inhalation: Category 3 H331 Skin corrosion/irritation: Category 1B H314 Serious Eye Damage/Eye Irritation Category 1 H318

SECTION 4: FIRST AID MEASURES

Key symptoms

Acute effects:

4.1. Description of first aid measures.

4.1.1 Route of exposure: inhalation, skin, eye and ingestion.

4.1.2 Advice



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- Rinse eyes cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek medical attention.
- Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- **Acute effects:**
Eyes: Redness, pain, burns, loss of vision.
Skin: Pain, redness, burns. Behavioral somnolence observed in test animals. Neurotoxicity indication in rats via dermal adsorption.
Ingestion: Cause nausea, vomiting, salivation, headache, dizziness, muscle weakness, depression and abdominal pain.
Inhalation: Sore throat, cough, burning sensation, shortness of breath, labored breathing, headache, nausea and vomiting.
It can irritate the nose and throat causing coughing and wheezing.
- **Chronic effects:**
It may affect the liver and kidneys. There is limited evidence that it may damage the Developing fetus.

4.3. Indication of any immediate medical attention and special treatment needed

- **Eyes:** If in eyes rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek medical attention.
- **Skin:** Immediately take off all contaminated clothing. Wash thoroughly with water for at least 15 minutes. Wash contaminated clothes before reuse. Seek immediate medical attention.
- **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell. Monitor for respiratory distress. Apply artificial respiration if not breathing. 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. Toxic vapours may be released on thermal decomposition including nitrogen oxides, carbon monoxide and cyanide.
Ingestion: If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek medical attention.

SECTION 5 : FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- Appropriate extinguishing media: Dry chemical powder, chemical foam, and alcohol resistant foam. Do not use water jet or fog (spray) to extinguish. Water can be effective in cooling down the fire-exposed containers. Use water spray to knock down fire fumes if possible.

5.2. Special hazards arising from the substance or mixture

- Toxic vapors may be released on thermal decomposition including nitrogen oxides, carbon monoxide and cyanide.
- High vapor concentration may result in an explosion hazard.
- Vapors are heavier than air. May travel considerable distance from source and flashback.

5.3. Advice for firefighters

- Evacuate the area and fight fires from a safe distance.
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions or as per locally valid procedures.
- Fire-fighters must wear Self Contained Breathing Apparatus (SCBA)
- Chemical is water-soluble. Report any run-off of firewater's contaminated with this chemical as per local and federal procedures applicable.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Minor Spills

- **6.1. Personal precautions, protective equipment and emergency procedures.**
- **6.1.1 For non-emergency personnel**
- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Avoid breathing vapors and contact with skin and eyes.
- Shut off leak source if possible.
- Shut off all possible sources of ignition.
- Wipe up.
- Decontaminate all equipment.
- Use non-sparking tools.

6.1.2 For emergency personnel

- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.



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- Stop leaks if possible.
- Clean up all spills immediately following relevant Standard Operating Procedures.
- Avoid breathing vapors and contact with skin and eyes.

6.2. Environmental precautions

- Clean up all spills immediately following relevant Standard Operating Procedures.
- Inform authorities in event of contamination of any public sewers, drains or water bodies.
- Wipe up.
- Prevent, by any means available, spillage from entering drains or water and watercourses.
- Collect recoverable product into labeled containers for recycling, recovery or disposal.
- Contain spill with sand, earth or vermiculite.
- Spread area with lime or absorbent material, and leave for at least 1 hour before washing.

6.3. Methods and material for containment and cleaning up.

- Clean up all tools and equipment.
- Decontaminate all equipment.

6.4. Reference to other sections.

- For more information please refer to section 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Do not breathe vapor or mist.
- Wear protective gloves/clothing and eye/face protection.
- Wash thoroughly after handling.
- Ground and secure containers when dispensing or pouring product.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Launder contaminated clothing before re-use.
- If on skin or hair, IMMEDIATELY remove all contaminated clothing and rinse/shower with plenty of water.
- Use in a well ventilated place/Use protective clothing commensurate with exposure levels.

7.2. Conditions for safe storage, including any incompatibilities

- Store at ambient temperature in a dry and well ventilated place.
- Store in a flame proof area.
- Store away from incompatible materials.
- Keep only in original container.
- Keep securely closed when not in use.

7.3. Specific end use(s)

- It is used as a solvent and intermediate; curing agent for rubber and epoxy resins; catalyst for condensation reactions; ingredient in oils and fuels; complexing agent and as a synthetic flavoring. Present in Table 2 of the 1988 Convention of intermediates that are listed as precursors to the illicit manufacture of narcotic drugs and psychotropic substances.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Country	Occupational Exposure Limit
Australia, Ireland, New Zealand, United Kingdom	1 ppm (3.5 mg/m ³) as an 8-hour time-weighted average
Latvia	0.2 mg/m ³ as an 8-hour time-weighted average

Air Monitoring Method: Collection media: Charcoal; Analysis Method: GC/FID

Derived No Effect Levels (DNELs) – Workers:

Route

DNEL



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Acute - systemic effects (dermal)	Qualitative
Acute - systemic effects (inhalation)	Covered by Long-term – Local
Long-term - systemic effects (dermal)	Qualitative
Long-term - systemic effects (inhalation)	Covered by Long-term – Local
Long-term - local effects (inhalation)	7.05 mg/m3
Acute - local effects (inhalation)	Covered by Long-term – Local
Acute and long-term - local effects (dermal, inhalation)	Qualitative

Derived No Effect Levels (DNELs) – General Population:

Acute - systemic effects (oral, dermal, inhalation)	No applications involving general population.
Long-term - systemic effects (dermal)	No applications involving general population.
Long-term - systemic effects (inhalation)	No applications involving general population.
Long-term - systemic effects (oral)	No applications involving general population.
Acute and long-term - local effects (dermal, inhalation)	No applications involving general population.
Acute - systemic effects (oral, dermal, inhalation)	No applications involving general population.

Predicted No Effect Concentrations (PNECs):

Route	PNEC
PNEC aqua (freshwater)	0.038 mg/L
PNEC aqua (marine water)	0.0038 mg/L
PNEC aqua (intermittent releases)	0.19 mg/L
PNEC aqua (STP)	100 mg/L
PNEC sediment (freshwater)	0.965 mg/kg sediment dw
PNEC sediment (marine water)	0.0965 mg/kg sediment dw
PNEC soil	0.17 mg/kg soil dw
PNEC oral (wildlife exposures)	Derivation waived due to low bioaccumulation potential

8.2. Exposure controls

8.2.1 Appropriate Engineering Controls:

- Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Local ventilation is usually preferred. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2. Personal Protection:

- Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
- Hands:** Wear appropriate protective gloves to prevent skin exposure.

In full Contact:

Glove material: butyl rubber
 Layer thickness: 0.70 mm
 Breakthrough Time: >480 Min

In Splash Contact:

Glove material: Nitrile Rubber
 Layer thickness: 0.40 mm
 Breakthrough Time: >120 Min

- Eyes:** Safety goggles/ Chemical Safety glasses and Face shield.
- Clothing:** Boots and clothing to prevent contact.
- Respirator:** Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Sr.No.	Parameter	Typical value
1	Appearance	Clear, colorless liquid.
2	Odor	Like amine.
3	Odor Threshold	< 2 ppm
4	pH	12.6 (100 g/L Aqueous solution)
5	Melting point/Freezing point	-10 to -13°C
6	Boiling Point	106°C @ 760 mm Hg

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7	Flash point	27°C closed cup (80.6°F)
8	Evaporation rate (n-BuAc=1)	Not available
9	Flammability (Liquid)	Flammable
10	Upper/lower flammability or Explosive limits	1.1% (LEL) – 8.7% (UEL)
11	Vapor pressure	34 hPa @ 20 °C
12	Vapor density (air=1)	2.94
13	Relative density	0.861
14	Solubility	Soluble in all proportions
15	Partition coefficient : n-(Octonol / water)	0.64 at 20°C
16	Auto-ignition temperature	339°C (642°F)
17	Decomposition temperature	Not available
18	Viscosity	1.52 mPa*s (dynamic) @ 20°C
19	Explosive property	No
20	Oxidizing property	No

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- Piperidine is a clear colorless liquid with a heavy sweet odor. It is a highly flammable liquid and a dangerous fire hazard. It is soluble in water.

10.2. Chemical stability

- Stable under normal temperature and pressures.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Not reported.

10.4. Conditions to avoid

- Keep away from heat, sparks, flame, high temperature and incompatible chemicals.

10.5. Incompatible materials

- Acids, acid chlorides, acid anhydrides, carbon dioxide, strong oxidizing agents, dicyanofurazan, N-nitrosoacetanilide, 1-perchlorylpiperidine.

10.6. Hazardous decomposition products

- Thermal decomposition may produce carbon monoxide, carbon dioxides, oxides of nitrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

- Acute toxicity**
- Piperidine causes serious eye irritation and skin burns. It is toxic in contact with skin. It is harmful if swallowed and toxic if inhaled.

- RTECS#: TM3500000

- LD50/LC50

Acute Oral LD50Rat	400 mg/kg
Acute Oral LD50: LD50 (rat)	740 mg/kg Reference: Toxikon 1992a [KEY]
LD50/ rat:	> 200 - < 2,000 mg/kg (BASF-Test)
Acute Dermal LD50 Rabbit	275 mg/kg Reference: Smyth 1962 [KEY]
Acute Inhalation (LC50) Rat	6,000 mg/m ³ /2H
Acute Inhalation LC50 Rat	4.8 mg/L (4h), Reference: BASF 1980 [KEY]
Skin Rabbit 100 µg/24 hour open irritation test	Severe
Eye Rabbit 250 µg/24 hour	Severe

a) Skin corrosion/irritation

- Corrosive to skin.

b) Serious eye damage/irritation

- Corrosive to eyes..

c) Respiratory or skin sensitization

Negative for sensitizing effects in guinea pig maximization test.



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d) Germ cell mutagenicity

No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The substance was not mutagenic in a test with mammals.

e) Carcinogenicity

In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed. Literature data. Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

f) Reproductive toxicity

The results of animal studies gave no indication of a fertility impairing effect. Literature data..

g) STOT-single exposure

- No data is available.

h) STOT- repeated exposure

- No data available.

i) Aspiration Hazards

- No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

12.1.1 Ecotoxicity:

LC50 (96h) *Leuciscus idus* = 68 mg/L Ref. BASF 1987 [KEY]

EC50 (48h) *Daphnia magna* = 19 mg/L Ref. BASF 2013a [KEY]

EC50 (72h) *Desmodesmus subspicatus* = 106 mg/L Ref. BASF 2013b [KEY]

]Based on the estimated values it is expected that it may be toxic to invertebrates and algae at relatively low concentrations.

12.2. Persistence and degradability

- Piperidine is expected to be found predominantly in soil. It is also expected to be found in water but not in sediment. It undergoes rapid biodegradation when exposed to UV light in the atmosphere.

12.3. Bioaccumulative potential

- Significant bioaccumulation not expected; bioconcentration factor (BCF) = 2.3 to 9.3.
- Based on the Log Kow and Bioconcentration factor value it is expected to have low potential to concentrate in fatty tissue of fish and aquatic organisms.

12.4. Mobility in soil

- This material is soluble in water. Its adsorption to soil and sediment should not be significant..

12.5. Results of PBT and vPvB assessment

- Substance is readily biodegradable and is therefore not persistent. Substance is not bioaccumulative. This substance is not a PBT or vPvB.

12.6. Other adverse effects

Environment Fate:

- Based on the environmental modeling, this material has a low potential to get moderate absorbed in the organic matter of soil and is slightly volatile from water bodies. Since this is an estimated result it is recommended that the material should not be disposed into the environment. The material should never be disposed into the sewage.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

- Burn in a chemical incinerator equipped with an afterburner and scrubber.
- Exert extra care in igniting, as this material is flammable.
- Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

- This substance is considered to be hazardous for transport by Air/Rail/Road and Sea and thus regulated by IMO/ IMDG/ IATA/ ICAO.

Mode of Transport	Agency
Land transport	ADR/RID
Maritime Transport	IMDG
Air Transport	IATA



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14.1. UN number

- UN 2401

14.2. UN proper shipping name

- Piperidine



14.3. Transport hazard class(es)

- Corrosive, Flammable liquid 8 (3)
- Hazard Label

14.4. Packing group

- I

14.5. Environmental hazards

- This chemical is not a marine pollutant but is nevertheless harmful to the environment.

SECTION 15: REGULATORY INFORMATION

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

- European/International Regulations.
- European Labeling in Accordance with EC Directives.

Classification (as per Regulation (EC) No 1272/2008):

- **Hazards Class and Category:** Flammable liquid Cat.2, Acute tox oral. Cat 4, Acute tox dermal Cat.3, Acute tox inh cat.3,
- **Hazard Statements:** H225; H302; H311; H331; H314; H318

US information

- **TSCA**

CAS# 110-89-4 is listed on the TSCA inventory.

- **Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

- **Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

- **Section 12b**

None of the chemicals are listed under TSCA Section 12b.

- **TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

- **SARA**

Section 302 (RQ)

None of the chemicals in this material have an RQ.

- **Section 302 (TPQ)**

CAS# 110-89-4: TPQ = 1000 pounds; RQ = 1000 pounds

- **SARA Codes**

CAS # 110-89-4: acute, flammable.

- **Section 313**

No chemicals are reportable under Section 313.

- **Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

- **Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

- **OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

- **STATE**

Piperidine can be found on the following state right to know lists:

New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

- **California**

No Significant Risk Level

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation: : April 05, 2012

Chemical : Piperidine



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File Name : 0025Nr Ghs14 Div.2 sds Piperidine
Revision Number : 14
Date of Issue : February 02, 2021
Revision Due Date : January, 2024
Supersedes date : September 08, 2020

b) A key or legend to aberrations and acronyms used in the safety data sheet

- PBT =Persistent Bioaccumulative and Toxic
- vPvB= Very Persistent and Very Bioaccumulative
- SCBA= Self Contained Breathing Apparatus
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit
- OELTWA= Occupational Exposure Limit Time Weighted Averages
- IDLH= Immediately Dangerous to Life or Health
- UEL= Upper Explosive Limit
- LEL= Lower Explosive Limit
- RTECS= Registry of Toxic Effects of Chemical Substances
- NTP=National Toxicology Programm
- IARC= International Agency for Research on Cancer
- EPA=Environmental Protection Agency
- TSCA= Toxic Substances Control Act
- CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act
- SARA= Superfund Amendments and Reauthorization Act
- NFPA= National Fire Protection Association
- WHIMS= Workplace Hazardous Materials Information System
- DSL/NDSL= Domestic/Non-Domestic Substances List
- CSR=Chemical Safety Report
- BCF = Bio Concentration Factor
- DNEL = Derived No Effect Level
- PNEC = Predicted No Effect Concentration
- TLV = Threshold Limit Value
- ACGIH = American Conference of Governmental Industrial Hygienists
- REACH = Registration, Evaluation .Authorisation and Restriction of Chemicals
- CLP = Classification, Labelling and Packaging
- LD / LC = Lethal Doses / Lethal Concentration
- GHS = Globally Harmonised System
- ADR = Accord europeen relative au transport international de marchandises
- IMDG-Code = International Maritime Code for Dangerous Goods
- EmS = Emergency measures on Sea
- ICAO = International Civil Aviation Organization
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation

c) Key Literature reference and sources for data

Biographical reference and data sources

- Globally Harmonized System of Classification and Labelling of Chemicals.
- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009.
- APCISS List of hazard statements

Hazards Statements	
	<ul style="list-style-type: none">• H225: Highly flammable liquid and vapour.• H302: Harmful if swallowed• H311: Toxic in contact with skin.• H331: Toxic if inhaled.• H314: Causes severe skin burns and eye damage

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

End of safety data sheet