



## 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 21, 2024
Revision due date	: January 2027
Revision Number	: 18
Version Name	: 0025Nr Ghs18 Div.2 sds Piperidine
Supersedes date	: January 02, 2024
Supersedes version	: 0025Nr Ghs17 Div.2 sds Piperidine



# Piperidine

## Safety Data Sheet

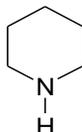
According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

### 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.  
T +91-5924-267437 & +91-5924-267438

**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](mailto:support@jubl.com) - [www.jubilantingrevia.com](http://www.jubilantingrevia.com)

#### 1.4 Emergency telephone

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident) Call

Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)

Chemtrec (India) : 000-800-100-7141

For ALL other emergencies call Emergency Control Room Gajraula at 99970 22412

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance

##### 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:**

# Piperidine

## Safety Data Sheet

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



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	100%	Flammable Liquid: Category 2 Acute Toxicity Oral: Category 4 Acute Toxicity Dermal: Category 3 Acute toxicity inhalation: Category 3 Skin corrosion/irritation: Category 1B Serious Eye Damage/Eye Irritation Category 1
				H225 H302 H311 H331 H314 H318



# Piperidine

## Safety Data Sheet

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

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of first aid measures.

- **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.

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

##### Key symptoms

- **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

- Treat symptomatically

### 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 firefighter's contaminated with this chemical as per local and federal procedures applicable.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 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.



# Piperidine

## Safety Data Sheet

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

- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- 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.

## 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 <sup>3</sup> ) as an 8-hour time-weighted average
Latvia	0.2 mg/m <sup>3</sup> as an 8-hour time-weighted average

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



# Piperidine

## Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)  
**Derived No Effect Levels (DNELs) – Workers:**

Route	DNEL
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/m <sup>3</sup>
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

# Piperidine

## Safety Data Sheet

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

4	pH	12.6 (100 g/L Aqueous solution)
5	Melting point/Freezing point	-10 to -13°C
6	Boiling Point	106 -108°C @ 760 mm Hg
7	Flash point	7.5 °C at 1013.25 hPa
8	Evaporation rate (n-BuAc=1)	Not available
9	Flammability (Liquid)	Highly flammable liquid (GHS flammable liquid Cat. 2) Flammability derived from flash point and boiling point.
10	Upper/lower flammability or Explosive limits	1.1% (LEL) – 8.7% (UEL)
11	Vapor pressure	14.7 mmHg @ 20 °C (19.58 hPa)
12	Vapor density (air=1)	2.94
13	Relative density	0.862
14	Solubility	Soluble in all proportions (Completely miscible)
15	Partition coefficient : n-(Octanol / water)	0.64 to 0.7 at 20°C and pH range: 10.2 to 10.4
16	Auto-ignition temperature	339°C (642°F) at 987 - 1001 hPa
17	Decomposition temperature	Not available
18	Viscosity	1.52 mPa*s (dynamic) @ 20°C
19	Explosive property	Non explosive
20	Oxidizing property	Non oxidising

### SECTION 10: STABILITY AND REACTIVITY

#### 10.1. Reactivity

- No hazardous reactions if stored and handled as prescribed/indicated.

#### 10.2. Chemical stability

- The product is stable if stored and handled as prescribed/indicated.

#### 10.3. Possibility of hazardous reactions

- Reacts with oxidizing agents. Reacts with acid chlorides. Reacts with acids. The progress of reaction is exothermic. Reacts with nitrites. Incompatible with acid chlorides and acid anhydrides.

#### 10.4. Conditions to avoid

- Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge. See SDS section 7 - Handling and storage.

#### 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, nitrous gases.

### 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 <sup>3</sup> /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

# Piperidine

## Safety Data Sheet

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

- 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.
- 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. No adverse effect observed (negative)
- 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.
  - No adverse effect observed (negative)
- g) **STOT-single exposure**
  - No data is available.
- h) **STOT- repeated exposure**
  - There are valid in vivo data available for the assessment of the repeated oral and inhalative dose toxicity.
- i) **Aspiration Hazards**
  - No data available.

## SECTION 12: ECOLOGICAL INFORMATION

### • 12.1 Toxicity

#### • 12.1.1 Ecotoxicity:

Short-term toxicity to fish: LC50 >100mg/l

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

Short-term toxicity to aquatic invertebrates: EC50 (48h) *Daphnia magna* = 19 mg/L Ref. BASF 2013a [KEY]

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

EC10 or NOEC for freshwater algae: 8.25 mg/L

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. Readily biodegradable.

### 12.3. Bio accumulative 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



# Piperidine

## Safety Data Sheet

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

- 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

#### 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.

#### 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

Chemical Inventory Lists:	Status
TSCA:	Listed (Active)
EINECS:	Listed
Canada(DSL/NDL):	Listed (DSL)
Japan:	Listed
Korea:	Listed
Australia:	Listed
China: IECSC	Listed
Philippines	Listed

#### US information

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):** Piperidine is not listed

**SARA 302/304 :** Hazardous substance RQs: Piperidine: 1000lb

**SARA 311/312 :**



# Piperidine

## Safety Data Sheet

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

Acute Health Hazard Yes  
Chronic Health Hazard Yes  
Fire Hazard Yes  
Sudden Release of Pressure Hazard No  
Reactive Hazard No

**California Prop. 65:** Piperidine is not listed

**CAA (Clean Air Act):** Hazardous substance TQs: Piperidine: 15000lb

**CWA (Clean Water Act):** Piperidine is not listed

### EU Information

**German Water Hazard Classification:** WGK = 1 (self-classification)

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006:** Piperidine is not listed

### SECTION 16: OTHER INFORMATION

#### a) Compilation information of safety data sheet

Date of compilation: : April 05, 2012  
Chemical : Piperidine  
CAS # : 110-89-4  
File Name : 0025Nr Ghs18 Div.2 sds Piperidine  
Revision Number : 18  
Date of Issue : February 21, 2024  
Revision Due Date : January, 2027  
Supersedes date : October 17, 2023

#### 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



# Piperidine

## Safety Data Sheet

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

### 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"><li>• H225: Highly flammable liquid and vapour.</li><li>• H302: Harmful if swallowed</li><li>• H311: Toxic in contact with skin.</li><li>• H331: Toxic if inhaled.</li><li>• H314: Causes severe skin burns and eye damage</li></ul>

#### 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*

---