



## 4-Cyanopiperidine

### Safety Data Sheet

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

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# 4-Cyanopiperidine

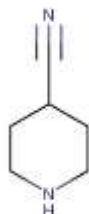
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### SECTION 1 : Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Product identification	: 4-Cyanopiperidine
CAS RN	; 4395-98-6
EC#	: 700-005-4
Trade name	: 4-Cyanopiperidine
Systematic Name	: Piperidine-4-carbonitrile
Synonyms	: Piperidine-4-carbonitrile, Piperidin-4-carbonitril, 4-Cyanopiperidine
Molecular Formula	: C <sub>6</sub> H <sub>10</sub> N <sub>2</sub>
Structural Formula:	



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

##### 1.2.1. Identified uses:

4-Cyanopiperidine is used as an intermediate in pharmaceutical industry.

Uses advised against: **None**

#### 1.3 Details of the supplier of the safety data sheet

**FACTORY & REGISTERED OFFICE:** Jubilant Ingrevia Limited, Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh-244223, India  
T +91-5924-252353 to 252360 Contact Department-Safety: Ext. 7424 F +91-5924-252352

**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

##### 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

##### GHS US Classification

Acute Toxicity Oral: Category 4	H302
Serious eye damage/irritation: Category 1	H318

#### 2.2 Label elements

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#### GHS US Classification



#### Pictograms:

GHS 05- Corrosion, GHS 07-Exclamation

**Signal word:** *Danger!*

#### HAZARD AND PRECAUTIONARY STATEMENTS

##### HAZARD STATEMENTS

- H302: Harmful if swallowed.
- H318: Causes serious eye damage.

##### PRECAUTIONARY STATEMENTS

- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER or doctor/physician.
- P501: Dispose of the container as per local norms and 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
4-Cyanopiperidine	4395-98-6	700-005-4	> 98%	Acute Toxicity Oral: Category 4 Serious eye damage/irritation: Category 1

#### SECTION 4: FIRST AID MEASURES

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

- **Skin Contact:** Wash with soap and water. Get medical attention if irritation develops or persists.
- **Eye Contact:** Rinse eyes immediately with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. GET MEDICAL ATTENTION.
- **Inhalation:** Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. GET MEDICAL ATTENTION.
- **Ingestion:** If swallowed, do not induce vomiting. Get prompt medical attention. Do not give anything by mouth to an unconscious person.

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

- **Acute effects:**  
Can cause eye irritation, including redness.
- **Chronic effects:**  
To the best of our knowledge, the chronic health effects of this product have not been fully investigated.

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



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- **Note to Physician:** No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient. Treat symptomatically.

#### SECTION 5: FIRE-FIGHTING MEASURES

##### 5.1. Extinguishing media

- **Appropriate Extinguishing Media:** Use water fog, alcohol resistant foam, carbon dioxide, or dry chemical.

##### 5.2. Special hazards arising from the substance or mixture

- **Hazardous Products of Combustion:** Toxic vapors may be released upon thermal decomposition (hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide).
- **Potential for Dust Explosion:** No data available.

##### 5.3. Advice for firefighters

- **Basic Fire Fighting Guidance:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

##### 6.1. Personal precautions, protective equipment and emergency procedures

- Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

##### 6.2. Environmental precautions.

- Prevent releases to soils, drains, sewers and waterways.

##### 6.3. Methods and material for containment and cleaning up.

- Ventilate the area of spill or leak. Wear protective equipment during clean-up. Material can then be collected for later disposal. After collection of material, flush area with water. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws..

##### 6.4. Reference to other sections.

- Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

#### SECTION 7: HANDLING AND STORAGE

##### 7.1. Precautions for safe handling

- Avoid contact with skin and eyes.
- Avoid inhalation of vapour or mist.
- Use only under a chemical fume hood.
- Wear personal protective equipment.
- Ensure good ventilation at the workplace.

##### 7.2. Conditions for safe storage, including any incompatibilities

- Keep container tightly sealed.
- Store at ambient temperature in a dry and well ventilated place.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Store away from incompatible materials.

##### 7.3. Specific end use(s)

- No further relevant information available.

#### SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

##### 8.1. Control parameters

###### 8.1.1 Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
4-Cyanopiperidine	Not established	Not established	None listed

###### 8.1.2 Exposure Limits (International):

- Not available.

###### 8.1.3 Derived No-Effect-Levels (DNEL) / Predicted No-effect-concentration (PNEC)

- DNEL and PNEC data not available.

##### 8.2. Exposure controls

###### 8.2.1 Appropriate Engineering Controls:

- All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided

###### 8.2.2. Personal Protection:

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- 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.
- Eyes:** Safety goggles/ Chemical Safety glasses and Face shield. Safety glasses or chemical goggles (Standard EN166).
- Clothing:** Boots and clothing to prevent contact. Chemical resistant clothing (Standard EN368)
- 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.
- Hands:** Wear appropriate protective gloves to prevent skin exposure. Neoprene, nitrile or PVC-coated gloves (Standard EN 374).  
Glove material: Natural rubber, Nitrile rubber, Neoprene

## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Sr.No.	Parameter	Typical value
1.	Appearance	Pale yellow to oily liquid.
2.	Odor	Characteristic
3.	Odor Threshold	Not available
4.	pH	Not available
5.	Melting point/Freezing point	Not available
6.	Boiling Point	100 - 105 °C at 16 hPa
7.	Flash point	105°C
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability	No
10.	Upper/lower flammability or Explosive limits	Not available
11.	Vapor pressure	Not available
12.	Vapor density (air=1)	Not available
13.	Relative density	0,987 g/cm3
14.	Solubility	Miscible in all proportions in water
15.	Partition coefficient : n-(Octanol / water)	- 0,349
16.	Auto-ignition temperature	Not available
17.	Decomposition temperature	Not available
18.	Viscosity	Not available
19.	Explosive property	No
20.	Oxidizing property	No

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

- Not classified as dangerously reactive.

### 10.2. Chemical stability

- Stable under normal temperature & pressures.

### 10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Will not occur.

### 10.4. Conditions to avoid

- Incompatible materials, dust generation, excess heat, u.v.light, strong oxidants.

### 10.5. Incompatible materials

- Avoid strong acids, strong bases, and oxidizing agents.



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#### 10.6. Hazardous decomposition products

- Toxic vapors may be released upon thermal decomposition (Hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide).

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

- a) **Acute toxicity**
  - Acute Oral LD50: Oral LD50 (rat) = 500 mg/kg
- b) **Skin corrosion/irritation**
  - No data available.
- c) **Serious eye damage/irritation**
  - Causes serious eye damage.
- d) **Respiratory or skin sensitization**
  - No data available.
- e) **Germ cell Mutagenicity**
  - No evidence of mutagenic effects
- f) **Carcinogenicity**
  - Not listed by NTP, IARC and OSHA.
  - Not present on the EU CMR list.
  - According to information presently available 4-Cyanopiperidine is not found to be carcinogenic.
- g) **Reproductive toxicity**
  - No evidence of reproductive effects
- h) **STOT-single exposure**
  - No data available.
- i) **STOT- repeated exposure**
  - No data available.
- j) **Aspiration Hazards**
  - No data available.

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1 Toxicity

##### 12.1.1 Ecotoxicity:

- Fathead minnow LC50 (96 hr): 362.65 mg/L (Predicted Fathead minnow LC50 (96 hr) from Consensus method)
- Daphnia magna LC50 (48 hr): 34.34 mg/L (Predicted Daphnia magna LC50 (48 hr) from Consensus method)

#### 12.2. Persistence and degradability

- Readily biodegradable. Based on environmental modeling, this material is not expected to be persistent in the environment, is not expected to bioaccumulate, and is not expected to be chronically toxic to fish

#### 12.3. Bioaccumulative potential

- BCF:3.162 (ES)
- Low potential to bioaccumulate.

#### 12.4. Mobility in soil

- Koc = 22.45 (estimated). Negligible absorption in soil.
- Henry's Law constant: 7.12E-009 atm-m<sup>3</sup>/mole
- Log Pow = - 0,349

#### 12.5. Results of PBT and vPvB assessment

- The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII

#### 12.6. Other adverse effects

- Environmental modeling predicts that this material will not present a significant toxicity risk to aquatic life.

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment method

- Burn in a chemical incinerator equipped with an afterburner and scrubber.
- 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 non hazardous for transport by Air/Rail/Road and Sea and thus not regulated by IATA/ICAO/ARD/RID/IMO/IMDG.



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

#### 14.1. UN number

- Not applicable

#### 14.2. UN proper shipping name

- Not applicable

#### 14.3. Transport hazard class(es)

- Not applicable

#### 14.4. Packing group

- Not applicable

#### 14.5. Environmental hazards

- This chemical is not a marine pollutant.

### SECTION 15: REGULATORY INFORMATION

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

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

- Hazards Class and Category:** Acute Tox. Oral Cat.4, Serious eye damage Cat.1,
- Hazard Statements:** H302; H318

Chemical Inventory Lists:	Status
TSCA:	Not Listed
EC Inventory	700-005-4
Canada(DSL/NDL):	Not Listed
China Catalog of Hazardous chemicals 2015	Not Listed
Not New Zealand Inventory of Chemicals (NZIoC)	Not Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed
Inventory of Existing and New Chemical Substances (ENCS)	Not Listed
Japan ISHL Existing Substances List (ISHL)	Not Listed
China: IECSC	Not Listed
Existing Chemicals List (KECI)	Not Listed
Australian Inventory of Chemical Substances (AICS)	Not Listed

### SECTION 16: OTHER INFORMATION

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

Date of compilation : December 22, 2010  
Chemical : 4-Cyanopiperidine  
CAS # : 4395-98-6  
File Name : 0613Gj Ghs05 Div.3 sds 4-Cyanopiperidine  
Revision Number : 05  
Date of Issue of SDS : February 22, 2021  
Revision Due Date : January, 2024  
Supersedes date : March 25, 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

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- 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/NDL= 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

#### d) List of hazard statements

<b>Hazards Statements</b>	H302: Harmful if swallowed. H318: Causes serious eye damage.
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#### 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*