



## 2-Cyanopyridine Safety Data Sheet

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

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## 2-Cyanopyridine

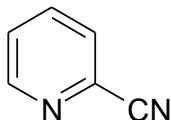
### Safety Data Sheet

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

##### 1.1 Product identifier

Product identification	: 2-Cyanopyridine
CAS RN	: 100-70-9
EC#	: 202-880-3
Trade name	: 2-Cyanopyridine
Systematic Name	: Pyridine-2-carbonitrile
Synonyms	: 2-Pyridinecarbonitrile, 2-Pyridinecarboxylic acid, nitrile 2-Pyridyl nitrile, Picolinic acid nitrile, Picolinonitrile
Molecular Formula	: C <sub>6</sub> H <sub>4</sub> N <sub>2</sub>
Structural Formula:	



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

It is used as an intermediate in the pharmaceutical industry for the manufacture of drugs like Bromazepine etc. and in the agrochemical industry. It is also used as an intermediate in the synthesis of Picolinic acid, Zinc picolinate etc.

**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 +91-5924-267437 & +91-5924-267438

**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

Acute toxicity oral: Category 4

Acute toxicity Dermal: Category 3

##### 2.2 Label elements

###### GHS-US classification

**Pictograms:** GHS 07-Exclamation

**Signal word:** *Danger!*



###### HAZARD AND PRECAUTIONARY STATEMENTS:

###### HAZARD STATEMENTS

- H302: Harmful if swallowed.
- H311: Toxic in contact with skin.

###### PRECAUTIONARY STATEMENTS

- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P361+P364: Take off immediately all contaminated clothing and wash it before reuse.
- P301+P312: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell
- P330: Rinse mouth.
- P405: Store locked up.



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- 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
2-Cyanopyridine	100-70-9	202-880-3	> 98%	Acute toxicity oral: Category 4 Acute toxicity Dermal: Category 3

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

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

4.1.2 *Advice*

- **Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a POISON CENTER or doctor/physician if you feel unwell.
- **Skin contact:** Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
- **Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
- **Ingestion:** If swallowed, seek medical advice immediately and show this container or label. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

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

**Acute effects:**

- Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

**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

- Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing media

- *Appropriate extinguishing media:* Dry chemical, foam, water spray, carbon dioxide.

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

- Toxic vapors may be released on thermal decomposition including nitrogen oxides, carbon monoxide & Carbon dioxide.
- Closed containers may explode from heat of a fire.
- 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 firewaters 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

- Keep unnecessary personnel away.
- Keep people away from and upwind of spill/leak. Keep out of low areas.
- Wear appropriate protective equipment and clothing during clean-up.
- Avoid breathing mist or vapor. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Ensure adequate ventilation.
- Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

### 6.2. Environmental precautions



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- This product is miscible in water. Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas.

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

- **Large Spills:** Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations. Following product recovery, flush area with water.
- **Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

### 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 dust from this material.
- Avoid contact with eyes, skin, and clothing. Do not taste or swallow.
- When using, do not eat, drink or smoke.
- Provide adequate ventilation.
- Wear appropriate personal protective equipment.
- Wash hands thoroughly after handling.
- Observe good industrial hygiene practices

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

- Maintain dry, ventilated conditions for storage.
- Protect containers against physical damage.
- Store away from incompatible materials like strong acids, strong bases and oxidizing agents.
- Keep away from heat, sparks, and flame
- Store locked up.
- Store in original tightly closed container.
- Keep this material away from food, drink and animal feed.
- Long term storage (i.e., more than one year) in mild steel containers may lead to discoloration of the product, affecting product quality.

### 7.3. Specific end use(s)

- Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

#### 8.1.1. Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Cyanopyridine	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:

- 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.
- **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



## 2-Cyanopyridine

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

Sr.No.	Parameter	Typical value
1.	Appearance	White to tan liquid/ solid
2.	Odor	Almond like
3.	Odor Threshold	Not available
4.	pH	8.4 at 100g/l H <sub>2</sub> O
5.	Melting point/Freezing point	26-29 °C(Melting point)
6.	Boiling Point	212-215 °C @760 mmHg
7.	Flash point	104 °C
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability (Liquid)	Combustible liquid
10.	Upper/lower flammability or Explosive limits	Not available
11.	Vapor pressure	11.96 Pa at 25 °C
12.	Vapor density (air=1)	Not available
13.	Relative density	1.081 at 25 °C
14.	Solubility	70 g/L @ 20°C solubility in water
15.	Partition coefficient : n-(Octonol / water)	0.45
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

- The product is stable and non-reactive under normal conditions of use, storage and transport

##### 10.2. Chemical stability

- Stable under normal temperature & 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

- Strong oxidizing agents, strong acids, strong bases.

##### 10.6. Hazardous decomposition products

- Thermal decomposition may produce carbon dioxide, carbon monoxide, oxides of nitrogen & irritating and toxic fumes.

#### SECTION 11: TOXICOLOGICAL INFORMATION

##### 11.1. Information on toxicological effects

###### Acute toxicity

- 2-Cyanopyridine causes skin, eyes and respiratory tract irritation. It is harmful if swallowed and Toxic on contact with skin.

RTECS#: Not listed

LD50/LC50:

ACUTE ORAL LD50 (rat) = 960 mg/kg

Acute dermal LD50 (rabbit, female) = 750 mg/kg

###### a) Skin irritation/ corrosion



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Draize irritation index = 0.27 (non-irritant)

- b) Serious Eye damage/ irritation**  
Causes minor irritation of the conjunctivae, but did not meet the criteria of eye irritation under GHS
- c) Respiratory or skin sensitization**  
.No data is available.
- d) Germ cell Mutagenicity**  
Non Mutagenic.
- e) Carcinogenicity**  
Not listed by NTP, IARC and OSHA.  
Not present on the EU CMR list.  
According to information presently available 2-Cyanopyridine is not found to be carcinogenic.
- f) Reproductive toxicity**  
No data is available.
- g) STOT-single exposure**  
No data is available.
- h) STOT- repeated exposure**  
No data available.
- i) Aspiration hazard.**  
No data available.

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1 Toxicity

##### 12.1.1 Ecotoxicity:

- Acute toxicity to fish, *Pimephales promelas* 96-hr-LC50= 726 mg/l

#### 12.2. Persistence and degradability

- Under anaerobic conditions, this compound is not expected to be persistent.
- The biodegradability of the 2-Cyanopyridine has been adequately characterized.
- Inherently biodegradable in fresh water.

#### 12.3. Bioaccumulative potential

- Based on environmental modeling, this material is not expected to be persistent in the environment, has a low potential to bio accumulate.

#### 12.4. Mobility in soil

- Koc=98.14. Moderate adsorption in soil.
- Henry's Law constant: 6.89E-08 atm-m<sup>3</sup>/mole
- Log Pow=0.45. Low potential to bioaccumulate.

#### 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

##### Environment Fate:

- Based on environmental modeling, this material is not expected to be persistent in the environment, has a low potential to bioaccumulate. The biodegradability of the substance has been adequately characterized (American Chemistry Council, Pyridine and Pyridine Derivatives HPV work group).

### 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 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

- UN2811

#### 14.2. UN proper shipping name

- TOXIC SOLID, ORGANIC, N.O.S. (2-Cyanopyridine)

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

- 6.1

#### 14.4. Packing group

- III

#### 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.

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

- Hazards Class and Category:** Acute toxicity oral: Category 4, Acute toxicity Dermal: Category 3
- Hazard Statements:** H302; H311

Chemical Inventory Lists:	Status
TSCA:	Listed (Active)
EC Inventory	Listed (202-880-3)
Canada(DSL/NDSL):	Listed(DSL)
China Catalog of Hazardous chemicals 2015	Not Listed
New Zealand Inventory of Chemicals (NZIoC)	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed
Inventory of Existing and New Chemical Substances (ENCS)	Listed (MITI No. 5-3714)
Japan ISHL Existing Substances List (ISHL)	Listed
China: IECSC	Listed
Existing Chemicals List (KECI)	Not Listed
Australian Inventory of Chemical Substances (AICS)	Listed

#### US information

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):** 2-Cyanopyridine is not listed

**SARA 302/304 :** 2-Cyanopyridine is not listed

**SARA 311/312 :** See section 2 for more information

**California Prop. 65:** 2-Cyanopyridine is not listed

**CAA (Clean Air Act):** 2-Cyanopyridine is not listed

**CWA (Clean Water Act):** 2-Cyanopyridine is not listed

#### EU Information

**Water hazard class (WGK):** WGK 3 (Severe hazards to water)

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006:** 2-Cyanopyridine is not listed

### SECTION 16: OTHER INFORMATION



## 2-Cyanopyridine

### Safety Data Sheet

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

Date of compilation : July 19, 2011  
Chemical : 2-Cyanopyridine  
CAS # : 100-70-9  
File Name : 0020Gj Ghs13 Div.2 sds 2-Cyanopyridine  
Revision Number : 13  
Date of Issue of SDS : February 21, 2024  
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#### (b) A key or legend to aberrations and acronyms used in the safety data sheet

- PBT =Persistent Bio accumulative and Toxic
- vPvB= Very Persistent and Very Bio accumulative
- 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
- UEL= Upper Explosive Limit
- LEL= Lower Explosive Limit
- RTECS= Registry of Toxic Effects of Chemical Substances
- NTP=National Toxicology Program
- 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 Authorization and Restriction of Chemicals
- CLP = Classification, Labelling and Packaging
- LD / LC = Lethal Doses / Lethal Concentration
- GHS = Globally Harmonized System
- ADR = Accord European 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

- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- REG (EC) no. 1907/2006, last modification by REG (EC) 2015/830

#### (d) List of hazard statements

Hazards Statements	
	<ul style="list-style-type: none"><li>• H302: Harmful if swallowed.</li><li>• H311: Toxic in contact with skin.</li></ul>

#### SDS EU (REACH Annex II)

*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*