



## 2,3-Pyridine dicarboxylic acid

### Safety Data Sheet

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

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## 2,3-Pyridine dicarboxylic acid

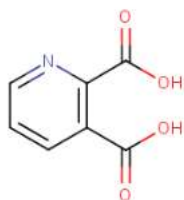
### Safety Data Sheet

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

##### 1.1. Product identifier

PRODUCT NAME	: 2,3-Pyridine dicarboxylic acid
CAS RN	: 89-00-9
EC#	: 201-874-8
SYSTEMATIC NAME	: 2,3-Pyridinedicarboxylic acid
SYNONYMS	: Pyridine-2,3-dicarboxylic acid, Quinolinic acid.
MOLECULAR FORMULA	: C <sub>7</sub> H <sub>5</sub> NO <sub>4</sub>
STRUCTURAL FORMULA	



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

###### 1.2.1. Relevant identified uses

2,3-Pyridine dicarboxylic acid is used as an intermediate of Moxifloxacin in API industry.

**Uses advised against:** None

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

**Jubilant Ingrevia Limited**

**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 number

**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: Hazard(s) identification

##### 2.1. Classification of the substance or mixture

###### GHS-US classification

Skin corrosion/Irritation: Category 2	H315	Causes skin irritation.
Eye damage/Irritation: Category 2A	H319	Causes serious eye irritation.
Specific Target Organ Toxicity SE: Category 3	H335	May cause respiratory irritation.

##### 2.2. Label Elements

**Hazard Pictogram:** GHS 07



**Signal Word:** Warning!

GHS 07

##### HAZARD AND PRECAUTIONARY STATEMENTS:



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#### HAZARD STATEMENTS

- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

#### PRECAUTIONARY STATEMENTS

- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264: Wash hands, eyes and face thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/clothing and eye/face protection.
- P302 + PP352: IF ON SKIN: Wash with plenty of soap and water.
- P304+340: IF INHALED: Removed victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P332 + P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container to local/regional/national/international regulations.

#### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	CAS #	EC#	Purity	GHS Classification
2,3-Pyridine dicarboxylic acid	89-00-9	201-874-8	99% (Min)	Skin corrosion/Irritation: Category 2 Eye damage/Irritation: Category 2A STOT SE: Category 3

#### SECTION 4: FIRST AID MEASURES

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

##### Key symptoms

##### Acute effects

- 2,3-Pyridine dicarboxylic acid causes skin and serious eyes irritation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. It may cause irritation to mucous membrane and upper respiratory tract.

##### Chronic effects

- Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

##### FIRST AID

- **Eyes:** Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses if easy to do so. Continue rinsing. If irritation persists, seek medical attention.
- **Skin:** Immediately take off all contaminated clothing. Quickly and gently blot or brush away excess chemical. Wash thoroughly with lukewarm, gently flowing water and non-abrasive soap for 15-20 minutes. Wash contaminated clothes before reuse. If irritation persists, obtain medical advice.
- **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
- **Ingestion:** If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek medical attention.
- 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.

#### SECTION 5: FIRE-FIGHTING MEASURES

##### 5.1. Extinguishing media

- *Appropriate extinguishing media:* Dry chemical powder, carbon dioxide, and alcohol resistant foam. Water may also be used. Water can be effective in cooling down the fire-exposed containers and knocking down the vapors. Water jets may be used to flush spills away and dilute the same to non-flammable mixtures fog or alcohol-resistant foam by directing streams to the periphery of the fires to prevent spread.

##### 5.2. Special Protective Equipment and Precautions for Fire Fighter:

- 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) and full protective clothing. The chemical is harmful in contact with skin.



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- Report any run-off of fire waters contaminated with this chemical as per local and federal procedures applicable.

#### 5.3. Unusual fire and explosion hazard:

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes including nitrogen oxides, hydrogen fluoride and carbon monoxide.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

- 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.
- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Clear area of personnel and move upwind.
- Stop leaks if possible.
- 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.
- Clean up all tools and equipment.

#### SECTION 7: HANDLING AND STORAGE

##### 7.1. Precautions for safe handling

- 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. Storage

- Store at ambient temperature, in a well-ventilated place.
- Keep container tightly closed.
- Keep securely closed when not in use.
- Keep in original containers.

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

##### 8.1. Control parameters

- **Exposure Limits Values**

Chemical name	STEL (ppm)	NIOSH	ACGIH	OSHA
2,3-Pyridine dicarboxylic acid	None available	None available	None available	None available

##### Exposure Limits (International):

- Not available.

##### 8.2. Exposure controls

###### 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.

##### 8.3. 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.



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- Clothing: Boots and clothing to prevent contact.
- Respirator: Dust production: dust mask with filter
- For emergency situations, wear a positive pressure, pressure-demand, full face piece self-contained breathing apparatus (SCBA) or pressure-demand supplied air respirator with escape SCBA and a fully-encapsulating, chemical resistant suit. (EPA, 1998).

#### General Hygiene and general comments:

- Wash hands and face after working with substance.
- Immediately change contaminated clothing.

#### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Off white to Beige color solid
2.	Molecular weight	167.12 g/mol
3.	Odor	Characteristic
4.	Odor Threshold	Not available
5.	pH	Not available
6.	Melting point	188-190 °C
7.	Boiling point	Not available
8.	Flash point	Not available
9.	Evaporation rate (n-BuAc=1)	Not available
10.	Explosive limits	Not available
11.	Vapor pressure	6.1 X 10 <sup>-6</sup> mm Hg @ 25°C
12.	Relative Vapor density (air=1)	Not available
13.	Density	0.66 g/m <sup>3</sup>
14.	Gravity	210.9 g/mL
15.	Solubility	Soluble in water (0.55%). Slightly soluble in alcohol. 20% Soluble in DMSO with hazy appearance.
16.	pKa (@25 °C)	3.1
17.	Auto-ignition temperature	Not available
18.	Decomposition temperature	>190 °C
19.	Viscosity	Not applicable
20.	Flammable material	No
21.	Oxidizer	No
22.	Pyrophoric material	No
23.	Explosive material	No

#### SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** No data available.
- **Stability:** Stable under normal conditions of temperature and pressure.
- **Conditions to avoid:** Moisture.
- **Incompatible chemicals:** Strong oxidizing agents.
- **Hazardous decomposition:** Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>).
- **Hazardous Polymerization:** Not reported.

#### SECTION 11: TOXICOLOGICAL INFORMATION

##### 11.1. Information on toxicological effects

###### Acute toxicity



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- 2,3-Pyridine dicarboxylic acid causes skin irritation and serious eye irritation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. It may cause irritation to mucous membrane and upper respiratory tract.

**RTECS#:** US7967250

**Toxicity data:** Not available.

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	No data available
Germ cell Mutagenicity	:	No data available
Carcinogenicity	:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
.	.	Not present on the EU CMR list. According to information presently available 2,3-Pyridine dicarboxylic acid is not found to be carcinogenic.
Reproductive toxicity	:	No data available.
STOT-single exposure	:	May cause irritation to respiratory system
STOT- repeated exposure	:	No data available.
Aspiration Hazards	:	No data available.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### 12.1.1 Eco toxicity:

##### 2,3-PYRIDINE DICARBOXYLIC ACID (89-00-9)

Fish ChV	93 mg/l
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### 12.2. Persistence and degradability

- Not available.

### 12.3. Bioaccumulative potential

##### 2,3-PYRIDINE DICARBOXYLIC ACID (89-00-9)

Bio concentration factor	3.2
Log Kow	- 0.12

2,3-Pyridinedicarboxylic acid is not expected to bio accumulate in the food chain because of the low BCF value.

### 12.4. Mobility in soil

##### 2,3-PYRIDINE DICARBOXYLIC ACID (89-00-9)

Log Koc	1.864
Henry's Law constant	$2.86 \times 10^{-15}$ atm-m <sup>3</sup> /mole
Log Kow	- 0.12

2,3-Pyridinedicarboxylic acid may have the potential to leach through soil and enter groundwater.



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#### 12.5. Other adverse effects.

- **Environment Fate:**  
No additional information available.

#### SECTION 13: DISPOSAL CONSIDERATIONS

##### Waste treatment methods

- 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.
- Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier.

#### SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be non-hazardous for transportation by Air/ Rail/ Road and Sea and thus not regulated by IATA/ ICAO/ ARD/ RID/ IMO/ IMDG/ US DOT.

Transport	Agency	Class	UN Number
Land Transport	ADR/RID/DOT	Not Dangerous good	Not Applicable
Maritime Transport	IMDG	Not Dangerous good	Not Applicable
Air Transport	IATA	Not Dangerous good	Not Applicable

#### SECTION 15: REGULATORY INFORMATION

##### European Union Information

##### Classification as per CLP Regulation 1272/2008:

- **Hazards Class and Category:** Skin Irrit. Cat. 2; Eye Irrit. Cat. 2 ; STOT SE Cat. 3.
- **Hazard Statements:** H315; H319; H335.

Chemical Inventory Lists:	Status
TSCA:	Listed
EINECS:	Listed
Canada(DSL/NDSL):	Listed (NDSL)
Japan:	Listed (ENCS)
Korea:	Listed (KECI)
Australia:	Not listed
Taiwan	Not listed
The Philippines	Not listed
China	Listed (IECSC)

##### US information

- **TSCA**  
CAS# 89-00-9 is listed on the Toxic Substances Control Act Inventory (TSCA) inventory.
- **Clean Air Act:**  
This material does not contain any hazardous air pollutants.  
This material does not contain any Class 1 Ozone depletors.  
This material does not contain any Class 2 Ozone depletors.
- **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**  
It is not considered highly hazardous by OSHA.
- **CANADA-DSL/NDSL**  
The substance is listed in NDSL.
- **California Prop 65**  
California No Significant Risk Level: This product is not listed.



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#### SECTION 16: OTHER INFORMATION

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

Date of compilation	: February 7, 2017
Chemical	: 2,3-Pyridine dicarboxylic acid
CAS #	: 89-00-9
File Name	: 0808Gj Ghs04 Div.3 sds 2,3-Pyridine dicarboxylic acid
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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.
- 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.
- SARA= Superfund Amendments and Reauthorization Act.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- BCF = Bio Concentration Factor.
- TLV = Threshold Limit Value.
- ACGIH = American Conference of Governmental Industrial Hygienists.
- REACH = Registration, Evaluation .Authorization and Restriction of Chemicals.
- CLP = Classification, Labeling 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

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

#### 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)