



2,4-Pyridinedicarboxylic acid

Safety Data Sheet

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

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2,4-Pyridinedicarboxylic acid

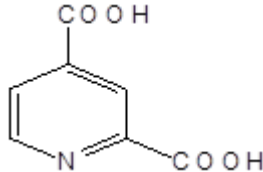
Safety Data Sheet

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

1.1. Product identifier

PRODUCT NAME	: 2,4-Pyridinedicarboxylic acid
CAS RN	: 499-80-9
EC#	: 207-892-2
SYNONYMS	: pyridine-2,4-dicarboxylic acid; 2,4-Lutidinic acid; 2,4-PDCA
TECHNICAL NAME	: 2,4-PDCA
MOLECULAR FORMULA	: C ₇ H ₅ NO ₄
STRUCTURAL FORMULA	



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

1.2.1. Relevant identified uses

It is used as histone-lysine demethylase inhibitor & cosmetic and human care.

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 - 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 2	H319	Causes serious eye irritation.
Specific Target organ Toxicity: Category 3 (Single Exposure)	H335	May cause respiratory irritation.

2.2. Label Elements

Hazard Pictogram: GHS 07



Signal Word: Warning!

GHS 07: Exclamation Mark

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

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



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PRECAUTIONARY STATEMENTS

- P264: Wash hands, eyes and face thoroughly after handling.
- P280: Wear protective gloves/clothing and eye/face protection.
- P271: Use only outdoors or in a well-ventilated area.
- P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P332 + P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P305 + P351 + P338: IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313: If eye irritation persists: Get medical advice/attention.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container to local/regional/national/international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	CAS #	EC #	Purity	GHS US Classification
2,4-Pyridinedicarboxylic acid	499-80-9	207-892-2	> 99 %	Skin Corrosion/irritation: Category 2 Eye damage/irritation: Category 2 Specific Target organ Toxicity (SE): Category 3

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

- Consult a physician. Show this safety data sheet to the doctor in attendance.
- **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 methods 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
- **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

Acute effects:

- 2,4-Pyridinedicarboxylic acid is irritating to skin, eyes and may cause irritation to mucous membrane and upper respiratory tract.

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

No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- *Appropriate extinguishing media:* Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- When heated to decomposition it may emit toxic vapors of nitrogen oxides, carbon monoxide and carbon dioxide.

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) 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.

5.4. Further information

- No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

- Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.
- Avoid dust formation.
- Avoid contact with skin and eyes.
- Wear protective clothing, boots, impervious gloves and safety glasses.
- Alert Emergency Responders and tell them location and nature of hazard.

6.2. Environmental precautions

- Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.
- Prevent, by any means available, spillage from entering drains or water and watercourses.
- Collect recoverable product into labeled containers for recycling, recovery or disposal.

6.3. Methods and materials for containment and cleaning up

- Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust.
- Place spillage in appropriately labeled container for disposal. Wash spill site.
- 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.
- Inform authorities in event of contamination of any public sewers, drains or water bodies.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Handle in accordance with good industrial hygiene and safety procedures. Avoid Prolonged or repeated exposure. Take precautionary measures against electrostatic discharge.
- Material should be handled in a laboratory hood whenever against fire and explosion possible.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke

7.2 Conditions for safe storage, including any incompatibilities

- Store at ambient temperature in a dry and well-ventilated place.
- Keep container tightly closed .

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Chemical name	STEL (ppm)	NIOSH	OSHA	ACGIH
2,4-Pyridinedicarboxylic acid	None available	None available	None available	None available

Exposure Limits (International):

- Not available.

8.2. Exposure controls

Appropriate Engineering Controls:

- Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

- **Hand Protection:** Wear suitable gloves resistant to chemical penetration
- **Eye Protection:** Chemical safety goggles
- **Body Protection:** Wear suitable protective clothing.
- **Respiratory protection:** Where respirators are deemed necessary to reduce or control occupational exposure, use NIOSH-approved respiratory protection and have an effective respirator program in place.

Additional Information

- Only use protective equipment in accordance with national/international regulations. Follow the national regulation about wearing personal protective equipment and the warranty given.
- Exposure may occur during manufacture, transportation and industrial use. The likely primary routes of human exposure to choline chloride are skin contact and inhalation at the work place.
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- Worker exposure is limited by enclosed systems, industrial hygiene controls and personal protective measures (protective gloves, safety glasses with side-shields, respiratory protection if ventilation is inadequate).

General Hygiene and general comments:

- Wash hands and face after working with the substance.
- Under no circumstances eat or drink at the workplace.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Sr.No.	Parameter	Typical value
1.	Appearance	White to off white solid
2.	Molecular weight	167.12 g/mol (Anhydrous)
3.	Odor	Nearly Odorless
4.	Odor Threshold	Not Available
5.	pH	ca.2,5 - 3,5 at 111 g/l at 20 °C
6.	Melting point/Freezing point	246-248 °C
7.	Boiling Point	574.8±35.0 °C at 760 mmHg
8.	Flash point	301.25 °C
9.	Evaporation rate (n-BuAc=1)	Not Applicable
10.	Flammability	Non- flammable
11.	Upper/lower flammability or Explosive limits	Not Available
12.	Vapor pressure	0.0±1.7 mmHg at 25°C
13.	Vapor density (air=1)	Not Available
14.	Density	1.6±0.1 g/cm ³
15.	Solubility	Very slightly soluble in water (4.5 g/l at 25 °C)
16.	Partition coefficient : n-(Octonol / water)	0.57
17.	Auto-ignition temperature	Not auto-flammable
18.	Decomposition temperature	> 230 °C - Decomposes on heating
19.	Viscosity	Not Applicable
20.	Explosive property	No

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- Stable under recommended transport or storage conditions.

10.2. Chemical stability

- Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization:** Not reported.

10.4. Conditions to avoid

- Exposure to Heat and moisture.

10.5. Incompatible materials

- Strong oxidizing agents

10.6. Hazardous decomposition products

- Other decomposition products** - Thermal decomposition may produce nitrogen oxides, carbon dioxide and carbon monoxide.
- In the event of fire: see section 5



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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

- 2,4-Pyridinedicarboxylic acid is irritating to skin, eyes and may cause irritation to mucous membrane and upper respiratory tract.

RTECS#: Unlisted

LD50(Oral) Rat- 3815.06 Mg/kg (Predicted Oral rat LD50 from consensus method)

Skin corrosion/irritation	:	Causes skin irritation.
Eye damage/irritation	:	Causes eye irritation.
Respiratory or skin sensitization	:	No data available
Germ cell Mutagenicity	:	No data Available
Carcinogenicity	:	Not listed by IARC and OSHA. IARC : 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
Reproductive toxicity	:	According to the information presently available this product has not been tested for its ability to affect reproduction.
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

- Short term toxicity to aquatic invertebrates:**
EC50 (48 hrs) daphnia magna- 230.749 mg/l (Predicted)
Based on this value it can be concluded that the substance 2,4-Pyridinedicarboxylic acid is considered to be not toxic to aquatic environment.
- Toxicity to aquatic algae and cyanobacteria:**
EC50 (72 hrs) Pseudokirchneriella subcapitata- 246.99 mg/l (Predicted)
Based on this value it can be concluded that the substance 2,4-Pyridinedicarboxylic acid is considered to be not toxic to aquatic green algae Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum).

12.2. Persistence and degradability

- Readily biodegradable.

12.3. Bio accumulative potential

2,4-Pyridinedicarboxylic acid (499-80-9)	
Bio concentration factor	3.162
Log Kow	0.57

Based on the Log Kow and Bioconcentration factor value it is not expected to have a potential to concentrate in fatty tissue of fish and aquatic organisms relative to its surroundings.

12.4. Mobility in soil

2,4-Pyridinedicarboxylic acid (499-80-9)	
Log Koc	1.59 (estimated). Low sorption
Henry's Constant	2.86E-15 atm-m ³ /mole
Log Kow	0.57. Low potential to bio accumulate.



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12.5 Other adverse effects

- **Environment Fate**

Based on the environmental modeling, this material has a negligible potential to get absorbed in the organic matter of soil and is non-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 methods

- 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 reinstates.

Contaminated packaging

- Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

- This substance is not considered to be Hazardous for transport by Air/Rail/Road and Sea and thus not regulated by ADR/RID IATA/ ICAO/ IMO/ IMDG.

ADR / RID	IMDG	IATA
14.1. UN number		
Not dangerous goods	Not dangerous goods	Not dangerous goods
14.2. UN proper shipping name		
Not Applicable	Not Applicable	Not Applicable
14.3. Transport hazard class(es)		
Not Applicable	Not Applicable	Not Applicable
14.4. Packing group		
Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available		

SECTION 15: REGULATORY 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 (Inactive)
EC/ List No.	207-892-2
Canada(DSL/NDSL):	Listed (NDSL)
Korea:	Not listed
Australia:	Not listed
Taiwan	Not available
New Zealand	Listed (NZIoC)
Philippines	Listed (PICCS)
China: IECSC	Not listed

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): 2,4-Pyridinedicarboxylic acid not listed

SARA 302/304 : 2,4-Pyridinedicarboxylic acid not listed



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SARA 311/312 : See section 2 for more information

California Prop. 65: 2,4-Pyridinedicarboxylic acid not listed

CAA (Clean Air Act): 2,4-Pyridinedicarboxylic acid not listed

CWA (Clean Water Act): 2,4-Pyridinedicarboxylic acid 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: 2,4-Pyridinedicarboxylic acid not listed

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation	: August 3, 2017
Chemical	: 2,4-Pyridinedicarboxylic acid
CAS #	: 499-80-9
File Name	: 0832Gj Ghs04 Div. 3 sds 2,4-Pyridinedicarboxylic acid (Anhydrous)
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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
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 830/2015.

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)