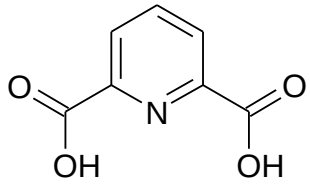
Date of Compilation	: January 13, 2009
Date of Issue	: January 02, 2024
Revision due date	: December 2026
Due Date of Revision	: 0036Gj Ghs03 Div. 3 sds 2,6-Pyridinedicarboxylic acid
Version Number	: 03
Supersedes date	: February 17, 2021
Supersedes version	: 0036Gj Ghs02 Div.03 sds 2,6-Pyridinedicarboxylic acid

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

1.1. Product identifier

PRODUCT NAME	: 2,6-Pyridinedicarboxylic acid
CAS RN	: 499-83-2
EC#	: 207-894-3
SYNONYMS	: pyridine-2,6-dicarboxylic acid; 2,6-Lutidinic acid; 2,6-PDCA, Dipicolinic acid
TECHNICAL NAME	: 2,6-Pyridinedicarboxylic acid
MOLECULAR FORMULA	: $C_7H_5NO_4$
STRUCTURAL FORMULA	



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

1.2.1. Relevant identified uses

Pyridinecarboxylic acids and their derivatives are used as an intermediate to produce pharmaceuticals and metal salts for the application of nutritional supplements. It is probably used as an intermediate in the pharmaceutical industry. It acts a chelating agent and an enzyme inhibitor

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 1	H314	Causes severe skin burns and eye damage
Eye damage/irritation: Category 1	H318	Causes serious eye damage
Specific Target organ Toxicity: Category 3 (Single Exposure)	H335	May cause respiratory irritation.

2.2. Label Elements

Hazard Pictogram: GHS05, GHS 07

Signal Word: Danger!

HAZARD AND PRECAUTIONARY STATEMENTS:
HAZARD STATEMENTS

- H314: Causes severe skin burns and eye damage.
- H335: May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

- P260: Do not breathe dusts and mists
- 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.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do not induce vomiting.
- P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin and water (or shower).
- P305 + P351 + P338: IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rising.
- 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.
- 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 US Classification
2,6-Pyridinedicarboxylic acid	499-83-2	207-894-3	> 98 %	Skin Corrosion/irritation: Category 1 Eye damage/irritation: Category 1 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:

- 2,6-Pyridinedicorboxylic acid causes damage 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.
- 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
- Keep only in original container

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SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Chemical name	STEL (ppm)	NIOSH	OSHA	ACGIH
2,6-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.

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 crystalline powder
2.	Molecular weight	167.12 g/mol
3.	Odor	Odorless
4.	Odor Threshold	Not Available
5.	pH (1% Solution)	2.0 (25.0 ± 0.3 °C)
6.	Melting point/Freezing point	229.8 °C – 231.0 °C
7.	Boiling Point	356.81 °C
8.	Flash point	188^0 C
9.	Evaporation rate (n-BuAc=1)	Not Applicable
10.	Flammability	Non- flammable
11.	Upper/lower flammability or Explosive limits	It should be considered as not highly flammable (for EU regulations) and non-flammable solid
12.	Vapor pressure	3.35E-007 mm Hg at 25^0 C (estimated)
13.	Vapor density (air=1)	Not Available
14.	Density	1.6427 ± 0.0004 g/cm3 at 20 ± 0.4 °C
15.	Solubility	5 g/L (@ 20^0C)
16.	Partition coefficient : n-(Octonol / water)	< 0.3 at 25 °C
17.	Auto-ignition temperature	620^0 C
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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

- 2,6-Pyridinedicarboxylic acid causes damage to skin, eyes and may cause irritation to mucous membrane and upper respiratory tract.

RTECS#: Unlisted

LD50(Oral) Rat- 2921.23 mg/kg (Predicted Oral rat LD50 from consensus method)

Skin corrosion/irritation	:	Causes severe skin burns
Eye damage/irritation	:	Causes serious eye damage
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 fish:**
  LC50 Fish (96 hours): 322 mg/l
- **Short term toxicity to aquatic invertebrates:**
  Daphnia magna-
  48h-NOEC≥100 mg/L
  48h-LOEC > 100 mg/L
  24h-EC50> 100 mg/L
  48h-EC50> 100 mg/L
  Based on this value it can be concluded that the substance 2,6-Pyridinedicarboxylic acid is considered to be not toxic to aquatic environment.

12.2. Persistence and degradability

- Readily biodegradable.

12.3. Bio accumulative potential

2,6-Pyridinedicarboxylic acid (499-83-2)	
Bio concentration factor	3.162
Log Kow	< 0.3 at 25 °C

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

2,6-Pyridinedicarboxylic acid (499-83-2)	
Log Koc	1.59 (estimated). Low sorption
Henry's Constant	2.86E-015 atm-m3/mole
Log Kow	< 0.3 at 25 °C Low potential to bio accumulate.

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 considered to be Hazardous for transport by Air/Rail/Road and Sea and thus regulated by ADR/RID IATA/ ICAO/ IMO/ IMDG.

ADR / RID	IMDG	IATA
14.1. UN number		
UN 3261	UN 3261	UN 3261
14.2. UN proper shipping name		
CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (2,6-Pyridinedicarboxylic acid)	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (2,6-Pyridinedicarboxylic acid)	Corrosive solid, acidic, organic, n.o.s. (2,6-Pyridinedicarboxylic acid)
14.3. Transport hazard class(es)		
8	8	8
14.4. Packing group		
II	II	II
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.1B,Eye irrit. Cat 1, STOT SE cat 3.
- **Hazard Statements:** H314; H318, H335.

Chemical Inventory Lists:	Status
TSCA:	Listed (Active)
EC/ List No.	207-894-3
Canada(DSL/NDSL):	Listed (DSL)
Korea:	Listed
Australia:	Listed

Taiwan	Listed
New Zealand	Listed (NZIoC)
Philippines	Listed (PICCS)
China: IECSC	Listed

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): 2,6-Pyridinedicarboxylic acid not listed
SARA 302/304 : 2,6-Pyridinedicarboxylic acid not listed
SARA 311/312 : See section 2 for more information
California Prop. 65: 2,6-Pyridinedicarboxylic acid not listed
CAA (Clean Air Act): 2,6-Pyridinedicarboxylic acid not listed
CWA (Clean Water Act): 2,6-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: 2,6-Pyridinedicarboxylic acid not listed

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation	: January 13, 2009
Chemical	: 2,6-Pyridinedicarboxylic acid
CAS #	: 499-83-2
File Name	: 0832Gj Ghs03 Div. 3 sds 2,6-Pyridinedicarboxylic acid
Version Number	: 03
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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 merchandises.
- 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.
- APCISS

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)