



4-Hydroxypyridine Safety Data Sheet

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

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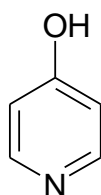
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1 Product Identifier

Product name	: 4-Hydroxypyridine
CAS RN	: 626-64-2
EC#	: 210-958-3
Synonyms	: 4-Pyridinol, gamma-Hydroxypyridine. Pyridin-4-ol
Technical name	: 4-Pyridinol
Molecular formula	: C ₅ H ₅ NO
Structural formula	:



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

Relevant identified uses: It is used as an intermediate in pharmaceutical 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

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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

Acute Toxicity(Oral): Hazard category 4: (H302: Harmful if swallowed).

Skin corrosion / irritation: Hazard category: Skin Irrit. 2 (H315: Causes skin irritation.)

Serious eye damage/ eye irritation: Hazard category: Eye Irrit. 1 (H318: Causes serious eye damage.)

Specific target organ toxicity – single exposure: Hazard category: STOT Single Exp. 3 (H335: May cause respiratory irritation.)

2.2 Label Elements

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Pictograms: GHS08, GHS07



Corrosion



Exclamation mark

Signal word: Danger!

2.3 Hazard and Precautionary Statements:

HAZARD STATEMENTS

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H335: May cause respiratory irritation.

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.
- P261: Avoid breathing dust/ fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well-ventilated area.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P312 + P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing 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.
- P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P310: Immediately call a POISON CENTER or doctor/physician.
- P304 + P233: Store in a well-ventilated place. Keep the container tightly closed.
- P501: Dispose of contents/container to local/regional/national/international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance	CAS Number	Assay/Purity
4-Hydroxypyridine	626-64-2	98.0% (minimum)

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

- **General advice:** Consult a physician if necessary. Never give anything by mouth to an unconscious person.
- **If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.
- **In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.



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- **If swallowed:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Symptoms: None reasonably foreseeable.

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

Note to physicians: Treat symptomatically

SECTION 5: FIRE-FIGHTING MEASURES

5.1 : Extinguishing media

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

Unsuitable extinguishing media: No information available.

5.2 : Special hazards arising from the substance or mixture

Specific hazards: None known.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions. Nitrogen oxides, carbon monoxide, carbon dioxide.

5.3 : Advice for firefighters

As in any fire, wear a NIOSH-approved or equivalent, pressure-demand, self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 : Personal precautions, protective equipment and emergency procedures

Personal precautions: Evacuate personnel to safe areas. Control access to area. Use personal protective equipment.

6.2 : Environmental precautions

Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. If the product contaminates rivers and lakes or drains inform respective authorities. If the spill area is porous, the contaminated material must be collected for subsequent treatment or disposal.

6.3 : Methods and materials for containment and cleaning up

Clean-up methods - small spillage: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Clean-up methods - large spillage: Do not flush with water. Prevent further leakage or spillage. Use approved industrial vacuum cleaner for removal. Shovel into suitable container for disposal.

6.4 : Reference to other sections

Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

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SECTION 7: HANDLING AND STORAGE

7.1 : Precautions for safe handling

Safe Handling:

- Wash hands before breaks and immediately after handling the product.
- Remove and wash contaminated clothing before re-use.
- Use only clean equipment.
- Avoid contact with skin, eyes and clothing.
- Do not breathe dust, spray or mist.
- Wear personal protective equipment. For personal protection see section 8.
- Provide appropriate exhaust ventilation.

7.2 : Storage

- Keep in properly labelled containers.
- Keep containers tightly closed at ambient temperature in a dry and well-ventilated place away from incompatible materials.
- Keep away from food, drink and animal feeding stuffs.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 : Control parameters

- This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

8.2 : Exposure Limits Values

- OSHA PEL: No data available.
- NIOSH REL: No data available.
- ACGIH TLV: No data available.

8.3 : Exposure Limits (International)

- No Information available

8.4 : Derived No-Effect-Levels (DNEL) Predicted No-Effect-concentration (PNEC)

- No Information available

8.5 : Exposure controls

General protective and hygiene measures

- Wear protective gloves/protective clothing/eye protection/face protection.
- The standard precautionary measures should be adhered to when handling
- Wash hands during breaks and at the end of handling the material
- Immediately remove any contaminated clothing

Appropriate Engineering Controls:

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- Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Facilities storing or utilizing this material should be equipped with an eyewash fountain. Use adequate general and local exhaust ventilation to keep airborne concentrations low.

8.6 : Personal Protection

Eyes: Based on an evaluation of the eye or face hazards present, wear chemical splash-resistant safety glasses or goggles with side protection. A face shield may be appropriate in some workplaces. Use eyewear tested and approved under appropriate government standards such as OSHA 29 CFR 1910.133 or EU EN166.

Hands: Wear gloves selected based on an evaluation of the possible hazards to hands and skin, the duration of use, the physical conditions of the workplace, and the chemical resistance and physical properties of the glove material.

Skin and body: Protective clothing must be selected based on the hazards present in the workplace, the physical environment, the duration of exposure, and other factors. No fabric can provide protection against all potential hazards; therefore it is important to select the appropriate protective clothing for each specific hazard. At the minimum, wear a laboratory coat and close-toed footwear.

Respiratory: Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

8.7 : Occupational hygiene

- No data available.

8.8 : Additional Information

- No data available.

8.9 : Control of environmental exposure

- Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr. No.	Parameter	Typical value
1.	Appearance	Powder and chunks, off white to beige
2.	Molecular weight	95.10
3.	Odor	Odorless
4.	Odor Threshold	No information available
5.	pH	7.0 at 20 °C.
6.	Melting point	Melting point/range: 150 - 151 °C - lit.
7.	Boiling point	230 - 235 °C at 16 hPa - lit.
8.	Flash point	221°C
9.	Evaporation rate (n-BuAc=1)	Not applicable
10.	Flammability	Not flammable
11.	Upper/lower flammability or Explosive limits	No information available

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Sr. No.	Parameter	Typical value
12.	Vapor pressure	0.0±0.9 mmHg at 25°C
13.	Specific Gravity	No information available
14.	Density	1.2±0.1 g/cm ³
15.	Solubility	Soluble in water
16.	Partition coefficient (Octonol /water)	log Pow: 0.32
17.	Auto-ignition temperature	515 °C
18.	Decomposition temperature	No information available
19.	Viscosity	Not applicable
20.	Explosive property	No information available
21.	Oxidizing property	No information available

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** None known, based on information available
- **Chemical stability:** Stable under normal conditions
- **Possibility of hazardous reactions:** None under normal conditions of storage and use.
- **Conditions to avoid:** Incompatible materials. Dust generation, keep away from moisture.
- **Incompatible materials:** Strong oxidizing agents, strong acids, strong bases, acid chlorides, heavy metal salts.
- **Hazardous decomposition Products :** Nitrogen oxides, carbon monoxide, carbon dioxide.
- **Hazardous Polymerization:** Has not been reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 : Information on toxicological effects

Acute Toxicity:

LD₅₀/TDLo

- **Type of Test** LD50-Lethal dose, 50 percent kill.
- **Route of Exposure** Intraperitoneal
- **Species Observed** Rodent-mouse
- **Dose Data** 923 mg/kg.
- **LD50 ATE (oral) rat** : 500 mg/kg

Skin irritation/corrosion : Moderate skin irritant.

Eye damage/irritation: Causes eye damage.

Respiratory or skin sensitization: No data available.

Germ cell mutagenicity: No data available

Carcinogenicity: No classification data on carcinogenic properties of this material is available from EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No data available



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Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: Moderate respiratory tract irritation.

Aspiration hazard: No data available.

Additional information: To the best of our knowledge, the chemical, physical and toxicological properties of this substance have not been thoroughly investigated.

RTECS: UU7701450

SECTION 12: ECOLOGICAL INFORMATION

12.1 : Toxicity

- Fathead minnow LC50 (96 hr): 219.04 mg/L (Predicted Fathead minnow LC50 (96 hr) from Consensus method)
- Daphnia magna LC50 (48 hr): 26.16 mg/L (Predicted Daphnia magna LC50 (96 hr) from Consensus method)

12.2 : Persistence and degradability

4-Hydroxypyridine

Persistence and degradability	Not readily biodegradable
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12.3 : Bio accumulative potential

4-Hydroxypyridine

Bio accumulative potential	3.162 (Bio concentration factor)
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Log Kow	0.32
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12.4 : Mobility in Soil

4-Hydroxypyridine

Soil Adsorp. Coeff. (Estimated Koc)	Koc: 92.12, log Koc: 1.964
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Henry's Law Constant	7.34E-010 atm-m ³ /mole
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- 4-Hydroxypyridine is non volatile from aqueous surfaces based on the estimated Henry's constant. Material is soluble in water and will have low sorption in neutral pH soils but greater sorption in acidic soils

12.5 : Other adverse effects

- No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 : Disposal of waste

- **Product:** In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate ponds, waterways or ditches with chemical or used container.



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13.2 : Disposal of packaging

- **Contaminated packaging:** Do not re-use empty containers.

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/ US DOT/ IMO/ IMDG.

	ADR/ RID/ DOT	IMDG	IATA
14.1 UN number			
	Not hazardous substance	Not hazardous substance	Not hazardous substance
14.2 UN proper shipping name			
	Not hazardous substance	Not hazardous substance	Not hazardous substance
14.3 Transport hazard class(es)			
	Not hazardous substance	Not hazardous substance	Not hazardous substance
14.4 Packing group			
	Not hazardous substance	Not hazardous substance	Not hazardous substance
14.5 Environmental hazards			
	No	No	No

SECTION 15: REGULATORY INFORMATION

Classification as per CLP Regulation 1272/2008:

Acute Toxicity Oral 4, Skin Irrit. 2, Eye Irrit. 1, STOT Single Exp. 3

Hazard Statements:

H302, H315, H318, H335

Chemical Inventory Lists:	Status
TSCA:	Listed
EC Inventory	Listed
Canada(DSL/NDSL):	Listed (NDSL)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed
Inventory of Existing and New Chemical Substances (ENCS)	Listed
Japan ISHL Existing Substances List (ISHL)	Listed
China: IECSC	Listed
Existing Chemicals List (KECI)	Listed
Australian Inventory of Chemical Substances (AICS)	Not Listed

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): 4-Hydroxypyridine is not listed

SARA 302/304 : 4-Hydroxypyridine is not listed

SARA 311/312 : See section 2 for more information

California Prop. 65: 4-Hydroxypyridine is not listed

CAA (Clean Air Act): 4-Hydroxypyridine is not listed

CWA (Clean Water Act): 4-Hydroxypyridine is not listed



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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: 4-Hydroxypyridine is not listed

SECTION 16: OTHER INFORMATION

a) : Compilation information of safety data sheet

Date of Compilation	: June 17, 2020
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b) A key or legend to aberrations and acronyms used in the safety data sheet

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.
RTECS	= Registry of Toxic Effects of Chemical Substances.
IARC	= International Agency for Research on Cancer.
TSCA	= Toxic Substances Control Act.
DSL/NDSL	= Domestic/Non-Domestic Substances List.
TLV	= Threshold Limit Value.
ACGIH	= American Conference of Governmental Industrial Hygienists.
REACH	= Registration, Evaluation .Authorization and Restriction of Chemicals.
CLP	= Classification, Labeling and Packaging.
GHS	= Globally Harmonized System.
IMDG-Code	= International Maritime Code for Dangerous Goods.
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



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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)
