2-Pyridineethanol

Safety Data Sheet

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

Date of Compilation	: October 04, 2019
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2-Pyridineethanol

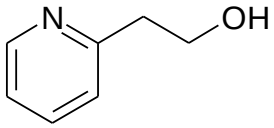
Safety Data Sheet

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

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

Product identifier

PRODUCT NAME : 2-Pyridineethanol
CAS RN : 103-74-2
EC# : 203-140-2
SYNONYMS : 2-Pyridineethanol,2-(Hydroxyethyl)pyridine,2-Pyridinylethanol, 2-(2-pyridyl)ethanol
SYSTEMATIC NAME : 2-Pyridineethanol; 2-Pyridylethanol
MOLECULAR FORMULA : C_7H_9NO
STRUCTURAL FORMULA:



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

Relevant identified uses

- 2-Pyridine ethanol is used in the manufacturing of vinyl pyridines; as an intermediate in the pharmaceutical industry for psychotropic agent, thioridazine, and the antispasmodic, tiquizium bromide.

Uses advised against: None

Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

FACTORY OFFICE: Jubilant Ingrevia Limited.(Unit-1), Plot No: -P1-L1, Within Jubilant SEZ at Plot No:5, Vilayat GIDC, Taluka-Vagra, Dist.: Bharuch Vagra, Distt: Bharuch, Gujarat,392012 Tel: +91-2641-281500, 281507, Fax: +91-2641-281515

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

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

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

GHS-US classification

Skin corrosion / irritant**:** Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritant: Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (Single exposure): Category 3	H335	May cause respiratory irritation.

Label Elements

Hazard Pictogram: GHS 07.

Signal Word: Warning!

HAZARD AND PRECAUTIONARY STATEMENTS:

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/vapors/sprays.
- P271: Use only outdoors or in well-ventilated place.
- P264: Wash hands, eyes and face thoroughly after handling.
- P280: Wear protective gloves/clothing and eye/face protection.
- P362: Take off contaminated clothing and wash before reuse.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P332 + P313: If skin irritation occurs: Get medical advice/attention.
- P305 + P351 + P338: IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rising.
- P337+P313: If eye irritation persists: Get medical advice/attention.
- 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-Pyridine ethanol	103-74-2	203-140-2	~ 99.00%	Skin corrosion / irritant**:** Category 2 Serious eye damage/eye irritant: Category 2A STOT(Single Exposure): Category 3

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Key symptoms
Acute effects:

- 2-Pyridine ethanol causes skin irritation and serious eye irritation. It can be irritating to mucous membranes and upper respiratory tract.
- Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Chronic effects:

- To the best of our knowledge, the chronic health effects of this product have not been fully investigated.

First Aid

- **Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with clean, running water for at least 15 minutes while keeping eyes open. Cool water may be used. Seek medical attention.
- **Skin Contact:** After contact with skin, wash with generous quantities of running water. Gently and thoroughly wash affected area with running water and nonabrasive soap. Cool water may be used. Seek medical attention. Wash any contaminated clothing prior to reusing.
- **Inhalation:** Remove the victim from the source of exposure to fresh, uncontaminated air. If victim's breathing is difficult, administer oxygen. Seek medical attention.
- **Ingestion:** DO NOT induce vomiting. Give water to victim to drink. Seek medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

- *Appropriate extinguishing media*: **Small Fire**- Dry chemical, Carbon dioxide, water spray or alcohol-resistant foam. **Large Fire-** Water spray, fog or alcohol-resistant foam.
- *Unsuitable Extinguishing Media* : No information available

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.
- Move containers from fire area if you can do it without risk.
- Dike fire-control water for later disposal; do not scatter the material.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Unusual fire and explosion hazard

- Containers may explode when heated.
- Fire may produce irritating, corrosive and/or toxic gases.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Minor Spills

- Clean up all spills following relevant Standard Operating Procedures.
- Avoid all contact with the material.
- Shut off leak source if possible.
- Wear protective clothing, boots, impervious gloves and safety glasses.
- Wipe up.

Major Spill

- Alert Emergency Responders and tell them location and nature of hazard.
- 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.
- Prevent, by any means available, spillage from entering drains or water and watercourses
- Collect recoverable product into labeled containers for recycling, recovery or disposal.
- Collect spillage with sand, earth or vermiculite.
- Wash up the area with water
- 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

- Wear protective gloves/clothing and eye/face protection.
- Do not breathe vapors or spray mist.
- Avoid contact with skin and eyes
- Avoid contact with clothing
- 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.
- Keep away from open flames, hot surfaces and sources of ignition.
- If on skin or hair, 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

- Keep container tightly closed.
- Store at ambient temperature in dry and well-ventilated place.
- Ensure adequate ventilation during use.
- Keep away from heat and sources of ignition.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Chemical name	STEL (ppm)	ACGIH TLV	OSHA PEL	NIOSH
2-Pyridineethanol	None available	None available	None available	None available

Exposure Limits (International):

- Not available.

Occupational Exposure Limits:

- There are no known occupational exposure limits for this chemical.
- Occupational exposure to 2-pyridineethanol may occur by dermal contact with this compound at workplaces where 2-pyridineethanol is produced or used

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 Protection

- **Eye/face protection:** Safety glasses with side-shields. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- **Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
- **Body Protection:** Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- **Respiratory protection:** 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.

General Hygiene and general comments:

- Wash hands and face after working with the substance.
- Apply skin protective barrier cream.
- Immediately change contaminated clothing.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1	Appearance	Clear brown liquid
2	Odor	Not available
3	Odor Threshold	Not available
4	Melting point	38.49 °C
5	Boiling point	225ºC
6	Flash point	116^{0}C
7	Evaporation rate (n-BuAc=1)	Not available
8	Explosive limits	Not available
9	Vapor pressure	10 mbar @ 105^{0}C
10	Vapor density (air=1) at 20^{0}C	4.2
11	Specific gravity (water=1)	1.091 @ 25 deg C/0 deg C
12	Solubility	Very soluble in alcohol, chloroform; soluble in water slightly soluble in ether.
13	PH (100g/lit) at 20^{0}C	8 – 9 100 g/L aq.sol
14	Log Pow (octonol/water)	0.38
15	Auto-ignition temperature	Not available
16	Decomposition temperature	150ºC

17	Viscosity	40 mPa 20.00 deg C
18	Molecular Weight	123.13
19	Pka (@25^{0}C)	5.31
20	Koc	Not available
21	Flammable material	No
22	Oxidizer	No
23	Corrosive material	No
24	Explosive material	No

SECTION 10: STABILITY AND REACTIVITY

- **Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions. Hygroscopic: absorbs moisture from the air.
- **Conditions to Avoid:** Incompatible materials, light, ignition sources, moisture, excess heat, strong oxidants.
- **Incompatibilities with Other Materials:** Strong oxidizing agents, strong acids, strong bases.
- **Hazardous Decomposition Products:** Carbon monoxide, oxides of nitrogen, irritating and toxic fumes and gases, carbon dioxide.
- **Hazardous Polymerization:** Has not been reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

- 2-Pyridine ethanol causes skin irritation and serious eye irritation. It may be irritating to mucous membranes and upper respiratory tract.

Organism	Test Type	Route	Reported Dose
Mouse	LD50	Oral	7750 mg/kg
Rat	LD50	Oral	9500 mg/kg

Skin corrosion/irritation : Causes skin irritation.
Eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : No data available.
STOT-single exposure : May cause respiratory irritation.
STOT- repeated exposure : No data available.
Aspiration Hazards : No data available.

CARCINOGENICITY

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Pyridineethanol	**103-74-2**	**Not listed**	**Not listed**	**Not listed**	**Not listed**	**Not listed**

Mutagenicity: No information available.

RTECS: UT2970450

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

- Short-term toxicity to fish: LC50(96 h)- > 100 mg/L
- Short-term toxicity to aquatic invertebrates: LC50(48 h)- 1415.3 mg/L
- Toxicity to aquatic algae and cyanobacteria: EC50(96 h)- 567.6 mg/L
- It is not classified as a marine pollutant though may be harmful to some species of crustaceans.

12.2 Persistence and degradability

- This material soluble in water and is not expected to be bio-accumulative or persistent. Do not dispose into the environment.

12.3 Bio accumulative potential

2-Pyridineethanol (103-74-2)	
Bio concentration factor	3.16
Log Kow	0.38 Low potential to bioaccumulate

Based on the Log Kow and Bio concentration factor value it is expected to have low potential to concentrate in fatty tissue of fish and aquatic organisms relative to its surroundings.

12.4 Mobility in soil

2-Pyridine ethanol (103-74-2)	
Log Koc	1.461. Negligible Sorption.
Henry's Law constant	1.5x10-10 atm-m3/mole. Essentially nonvolatile from water surfaces.
Log Kow	0.38. Low potential to bioaccumulate

Environmental Fate/Exposure Summary:

- 2-Pyridineethanol's production and use in the manufacture of vinyl pyridines may result in its release to the environment through various waste streams. If released to air, an estimated vapor pressure of 7.0X10-5 mm Hg at 25 deg C indicates 2-pyridineethanol will exist in both the vapor and particulate phases in the ambient atmosphere. Vapor-phase 2-pyridineethanol will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 2.6 days. Particulate-phase 2-pyridineethanol will be removed from the atmosphere by wet and dry deposition. If released to soil, 2-pyridineethanol is expected to have very high mobility based upon an estimated Koc of 28. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 1.5X10-10 atm-cu m/mole. If released into water, 2-pyridineethanol is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected to occur due to the lack of hydrolyzable functional groups.

12.5 Other adverse effects

Environment Fate:

Based on the environmental modeling, this material has a low potential to get absorbed in the organic matter of soil and is expected to be volatile from aqueous 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

- Dissolve or mix the material with a combustible solvent and burn in a regulated, chemical incinerator equipped with after burner 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

SECTION 14: TRANSPORT INFORMATION

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

S.No.	Agency	UN Number	Proper Shipping name	Hazard class
Land Transport	DOT/ADR/ARD	Not Applicable	Not Applicable	Not Applicable
Maritime Transport	IMDG	Not Applicable	Not Applicable	Not Applicable
Air Transport	IATA	Not Applicable	Not Applicable	Not Applicable

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:** Skin corrosion / irritant**:** Category 2**,** Serious eye damage/eye irritant: Category 2A, STOT(Single Exposure): Category 3,
- **Hazard Statements:** H315,H319,H335

Chemical Inventory Lists:	Status
TSCA:	Listed
EC/ List No.	Listed (203-140-2)
Canada(DSL/NDSL):	Listed
Korea:	Listed
Australia:	Not listed
Taiwan	Listed
New Zealand	Listed
Philippines	Not listed
China: IEC SC	Listed

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

EU Information
Water hazard class (WGK): WGK 2 (Moderate hazards to water)
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: 2-Pyridineethanol is not listed

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation	: October 04, 2019
Chemical	: 2-Pyridine ethanol
CAS #	: 103-74-2
File Name	: 0429Bh Ghs04 Div.3 sds 2-Pyridineethanol
Revision Number	: 04
Date of revision of SDS	: April 03, 2024
Revision Due Date	: March, 2027
Supersedes date	: January 19, 2024

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.
- 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

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

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)