Chemical Safety Data Sheet MSDS / SDS

5-ethyl-2-methylpyridine SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: 5-ethyl-2-methylpyridine

CAS: 104-90-5

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Acute toxicity - Category 3, Dermal

Skin corrosion, Sub-category 1B
Skin sensitization, Sub-category 1B
Acute toxicity - Category 3, Inhalation
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H331 Toxic if inhaled
H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep 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.
P333+P317 If skin irritation or rash occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.

Storage

P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	5-ethyl-2-methylpyridine
Common names and synonyms:	5-ethyl-2-methylpyridine
CAS number:	104-90-5
EC number:	203-250-0
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air. Refer for medical attention.

Following skin contact

Wear protective gloves when administering first aid. Remove contaminated clothes. Rinse skin with plenty of water or shower for at least 15 minutes. Refer immediately for medical attention.

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

Most important symptoms/effects, acute and delayed

Breathing of vapors will cause vomiting and chest discomfort. Contact with liquid causes skin and eye burns. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Aromatic hydrocarbons and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: SMALL FIRE: Dry chemical, CO2 or water spray. LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating vapors are generated when heated (USCG, 1999)

Special protective actions for fire-fighters

Use dry powder, foam, carbon dioxide, water spray. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Above 68°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Keep in a well-ventilated room. Store in an area without drain or sewer access. Separated from food and feedstuffs and strong oxidants.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or face shield.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid. Clear.
Colour:	Colourless.
Odour:	Sharp, penetrating odor

Melting point/freezing point:	-70.9 °C. Remarks:Pressure.
Boiling point or initial boiling point and boiling range:	178.3 °C. Atm. press.:1 013 hPa.
Flammability:	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	Lower 1.1%, upper 6.6%
Flash point:	64 °C. Atm. press.:1 007 mBar.
Auto-ignition temperature:	155 °C. Atm. press.:1 013.25 hPa.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Sol in alc, ether, benzene, dilute acids, concn sulfuric acid
Partition coefficient n-octanol/water:	Pow = 127. Temperature:22 °C.;log Pow = 2.1. Temperature:22 °C.
Vapour pressure:	1.853 hPa. Temperature:20 °C.
Density and/or relative density:	0.921. Temperature:20 °C.
Relative vapour density:	4.2 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

On combustion, forms irritating and toxic fumes including nitrogen oxides and carbon monoxide. Reacts vigorously with strong oxidants. This generates fire and explosion hazard. Attacks copper and copper alloys.

Chemical stability

no data available

Possibility of hazardous reactions

Flammable when exposed to heat or flame .The vapour is heavier than air.2-METHYL-5-ETHYLPYRIDINE neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. May generate hydrogen, a flammable gas, in combination with strong reducing agents such as hydrides. A mixture of nitric acid and methyl ethyl pyridine was placed in an autoclave and heated and stirred for 40 minutes. The emergency vent opened due to a sudden pressure rise, then an explosion occurred after about 90 seconds [Chem. Eng. News 30:3348. 1952].

Conditions to avoid

no data available

Incompatible materials

Can react vigorously with oxidizers. Potentially explosive reaction with nitric acid at 145 deg C/ 14.5 bar.

Hazardous decomposition products

When heated to decomposition it emits acrid smoke & irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male) - 710 mg/kg bw.

Inhalation: LC50 - rat (female) - 2.67 mg/L air.

Dermal: LD50 - rabbit - 1 000 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the skin and eyes. The substance may be irritating to the respiratory tract.

STOT-repeated exposure

See Notes.

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Oncorhynchus mykiss (previous name: Salmo gairdneri) - 55.6 - 100 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 39.6 mg/L - 48 h.

Toxicity to algae: IC50 - Scenedesmus capricornutum - 61.2 mg/L - 72 h.

Toxicity to microorganisms: NOEC - activated sludge - 38.8 mg/L - 18 h.

Persistence and degradability

BOD: (theoretical) 4.4%, 5 days; 56.6%, 20 days; 0.12-2.14 lb/lb, 5 days

Bioaccumulative potential

An estimated BCF of 14 was calculated for 2-methyl-5-ethylpyridine(SRC), using an estimated log Kow of 2.4(1,SRC) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for 2-methyl-5-ethylpyridine can be estimated to be 170(SRC). According to a classification scheme(2), this estimated Koc value suggests that 2-methyl-5-ethylpyridine is expected to have moderate mobility in soil. The pKa of 2-methyl-5-ethylpyridine is 6.51(3), which indicates that this compound will exist in the protonated form under acidic and neutral conditions. Cations adsorb more strongly to soil surfaces than neutral molecules thus adsorption of 2-methyl-5-ethylpyridine may be greater in acidic and neutral soils(SRC).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be

punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2300 (For reference only, please check.)
IMDG: UN2300 (For reference only, please check.)
IATA: UN2300 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: 2-METHYL-5-ETHYLPYRIDINE (For reference only, please check.)
IMDG: 2-METHYL-5-ETHYLPYRIDINE (For reference only, please check.)
IATA: 2-METHYL-5-ETHYLPYRIDINE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any