



Pyridine-3-sulfonyl chloride

Safety Data Sheet

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

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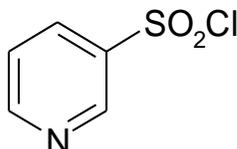
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Identification

PRODUCT NAME : **Pyridine-3-sulfonyl chloride**
CAS RN : 16133-25-8
EC# : 688-270-1
SYNONYMS : Pyridinesulfonyl chloride
MOLECULAR FORMULA : C₅H₄ClNO₂S
STRUCTURAL FORMULA



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

- Pyridine-3-sulfonyl chloride is used as an intermediate in pharmaceutical industries.

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 1B	H314
Specific Target Organ Toxicity: Category 3 (Single exposure)	H335

2.2. Label Elements

GHS-US labeling

Hazard Pictogram (GHS-US)

Hazard Pictogram: GHS 05

Signal Word: Danger!

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

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

PRECAUTIONARY STATEMENTS

- P264: Wash hand thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.





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- P271: Use only outdoors or in a well-ventilated area.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P302+P350: IF ON SKIN: Gently wash with plenty of soap and water.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P310: Immediately call a POISON CENTER or doctor/physician.
- P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P403+233: Store in a well ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical	CAS #	EC No.	Purity	GHS-US classification
Pyridine-3-Sulphonyl chloride	16133-25-8	688-270-1	≥95.5%	Skin Corrosion/Irritation: Category 1B Specific Target Organ Toxicity: Category 3 (Single exposure)

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

- **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

Key symptoms

Acute effects:

- It causes severe skin burns and eye damage. May cause respiratory irritation.

Chronic effects:

- This material is readily absorbed from the gastrointestinal tract, the skin and the respiratory tract. Extended contact with this material could result in severe health effects.

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

Appropriate extinguishing media: Dry chemical powder, carbon dioxide, and alcohol resistant foam. Water spray can be effective in cooling down the fire-exposed containers and knocking down the vapors. Water jets may be used to flush spills away and dilute the same to non-flammable mixtures fog or alcohol-resistant foam by directing streams to the periphery of the fires to prevent spread.

5.2. Special hazards arising from the substance or mixture

- **Fire hazard:** Heavier than air, vapors may travel long distances along ground, ignite and flash back to source.
- **Explosion hazard:** High vapor concentration may result in an explosion hazard.
- **Reactivity in case of fire:** Thermal decomposition generates: Toxic vapours which could include nitrogen oxides, carbon monoxide, carbon di-oxide, sulphur oxide, Hydrogen chloride gas.
- **Hazardous decomposition products in case of fire:** Hazardous decomposition products may be released during prolonged heating like smokes, carbon dioxide, nitrogen oxides, carbon di-oxide, sulphur oxide, Hydrogen chloride gas

5.3. Advice for firefighters

- **Precautionary measures fire:** Appropriate self-contained breathing apparatus may be required.



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- **Firefighting instructions:** Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. In case of major fire, evacuate area.
- **Protective equipment for firefighters:** Do not enter fire area without proper protection equipment, including respiratory protection.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

- For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal.
- Avoid breathing Vapors/dust.
- Avoid contact with skin, eyes and clothing.
- For larger spills, dike area and pump into waste containers.
- Contain large spills to maximize product recovery or disposal.
- Minimize dust generation and accumulation.
- Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.
- Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- Remove all sources of ignition.
- Shovel material into a convenient waste disposal container.
- Ventilate area of leak or spill.
- Spills: Sweep up and containerize for reclamation or disposal.
- Vacuuming or wet sweeping may be used to avoid dust dispersal.
- Do not allow material to enter into drains or water courses or dispose of where ground or surface waters may be affected.
- If the product enters drains or sewers the local water company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the National Rivers Authority.
- Use personal protective equipment as required.

6.1.1. For non-emergency personnel

- Protective equipment: Wear a NIOSH approved respirator if dust will be generated in clean-up. EN 166.
- Emergency procedures: Evacuate unnecessary personnel. Avoid breathing vapours..
- Measures in case of dust release: Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting.

6.1.2. For emergency responders

- Protective equipment: Equip cleanup crew with proper protection.
- Emergency procedures: Ventilate area.

6.2. Environmental precautions

- Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- For containment: Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.
- Methods for cleaning up: On land, sweep or shovel into suitable containers. Minimize generation of vapours/dust. Store away from other materials.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Precautions for safe handling

- Do not get in eyes, on skin, or on clothing.
- Do not breathe vapor or mist.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/clothing and eye/face protection.
- 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.
- Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Launder contaminated clothing before re-use.
- If on skin or hair, IMMEDIATELY remove all contaminated clothing and rinse/shower with plenty of water.
- Use in a well ventilated place/Use protective clothing commensurate with exposure levels.

7.1.2. Hygiene measures

- Do not eat, drink or smoke when using this product.



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- Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions:

- Store at ambient temperature in a dry and well-ventilated place.
- Store away from incompatible materials.
- Keep only in original container.
- Keep securely closed when not in use.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Pyridine-3-sulfonyl chloride	None listed	None listed	None listed

Exposure Limits (International):

- Not available.

8.2. Exposure controls

Appropriate Engineering Controls:

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits. In case of inadequate ventilation wear respiratory protection. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Handle in accordance with good industrial hygiene and safety procedures.

Personal Protection:

- Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
- **Hands:** Wear appropriate protective gloves to prevent skin exposure.
Or The protective gloves to be used must comply with the specifications of EC directives 89/686/EEC and the resultant standard EN374.
- **Eyes:** Safety goggles/ Chemical Safety glasses and Face shield.
- **Clothing:** Boots and clothing to prevent contact.
- **Respirator:** 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 substance.
- Immediately change contaminated clothing
- Do not eat, drink or smoke during use.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Clear pale yellow liquid
2.	Odor	Not available
3.	Odor Threshold	Not available
4.	pH	Acidic
5.	Melting point/Freezing point	10.2 ± 0.3 degree C
6.	Boiling Point	>= 284 °C
7.	Flash point	125.7±19.8 °C
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability (Liquid)	Non Flammable
10.	Upper/lower flammability or Explosive limits	Not available
11.	Vapor pressure	0.00167 mm Hg, (at 25°C)
12.	Vapor density (air=1)	Not available



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13.	Density	> 1.4 - < 1.6 g/cm ³
14.	Solubility	Slightly soluble in water. Soluble in Methanol, MDC, EtOAc
15.	Partition coefficient : n-(Octonol / water)	1.75
16.	Auto-ignition temperature	Not available
17.	Decomposition temperature	Not available
18.	Viscosity	Not available
19.	Explosive property	No
20.	Oxidizing property	No

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Pyridine-3-sulfonyl chloride is colorless to yellowish oily liquid. It is slightly soluble in water. Soluble in Methanol, MDC, EtOAc
Product is not explosive.

10.2. Chemical stability

Stable at normal temperatures and pressures

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur. Reacts with: Incompatible materials.

10.4. Conditions to avoid

Keep away from High temperature, mechanical shock, incompatible materials, ignition sources, excess heat, and moisture.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition may produce including nitrogen oxides, carbon monoxide and carbon di-oxide, sulphur oxide, Hydrogen chloride gas and irritating and toxic fumes

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity

RTECS: Not available

LD 50 (Rat): 2091.91mg/kg (Predicted Oral rat LD50 from Consensus method)

Skin corrosion/irritation : Severely irritating to skin and causes severe skin burns

Serious eye damage/eye irritation : Causes serious eye damage

Respiratory or skin sensitization : No data available

Germ cell mutagenicity : No data available

Carcinogenicity : Not listed by NTP, IARC and OSHA. Not present on the EU CMR list. According to information presently available Pyridine-3-sulfonyl chloride is not found to be carcinogenic.

Reproductive toxicity : No data available

Specific target organ toxicity - single exposure : Causes irritation to respiratory system

Specific target organ toxicity - repeated exposure : No data available

Aspiration hazard : No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity:

- Fathead minnow LC50 (96 hr): 164.18 mg/l (Predicted Fathead minnow LC50 (96 hr) from consensus method)

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- Daphnia magna LC50 (48 hr): 47.67 mg/l (Predicted Daphnia magna LC50 (48 hr) from consensus method)

12.2. Persistence and degradability

- Not readily biodegradable

12.3. Bio accumulative potential

- BCF: 6.66 L/Kg (Predicted)

12.4. Mobility in soil

- Koc: 170.2 (Predicted)
- Log Koc : 2.231 (Predicted)

12.5. Other adverse effects.

Environment Fate:

- Based on environmental modeling, this material is not expected to be persistent in the environment, is not expected to bio accumulate, and is expected to be toxic to aquatic life with long lasting effects. It is also expected to biodegrade very slowly. 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

- Waste disposal recommendations:**
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 rinsates.
- Ecology - waste materials:**
Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be Hazardous for transport by Air/Rail/Road and Sea and thus regulated by IATA/ICAO/US DOT/IMO/IMDG.

S.No	Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
Land Transport	ADR/RID/US DOT	UN 3265	Corrosive liquid, Acidic Organic, N.O.S	8	II
Maritime Transport	IMDG	UN 3265	Corrosive liquid, Acidic Organic, N.O.S	8	II
Air Transport	IATA	UN 3265	Corrosive liquid, Acidic Organic, N.O.S	8	II
Hazard Label		Corrosive			

Environmental hazards:

- Marine pollutant: No

SECTION 15: REGULATORY INFORMATION

European Union Information

Classification as per CLP Regulation 1272/2008:

- Hazards Class and Category: Skin Corr. -Cat 1B; STOT SE Cat 3
- Hazard Statements: H314; H335



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<u>Chemical Inventory Lists:</u>	<u>Status</u>
<u>TSCA:</u>	<u>Not Listed</u>
<u>EC Inventory</u>	<u>688-270-1</u>
<u>Canada(DSL/NDSL):</u>	<u>Not Listed</u>
<u>Taiwan Chemical Substance Inventory (TCSI)</u>	<u>Listed</u>
<u>New Zealand Inventory of Chemicals (NZIoC)</u>	<u>Not Listed</u>
<u>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</u>	<u>Not Listed</u>
<u>Inventory of Existing and New Chemical Substances (ENCS)</u>	<u>Not Listed</u>
<u>Japan ISHL Existing Substances List (ISHL)</u>	<u>Not Listed</u>
<u>China: IECSC</u>	<u>Not Listed</u>
<u>China: Inventory of Hazardous Chemicals (2015)</u>	<u>Not Listed</u>
<u>Existing Chemicals List (KECI)</u>	<u>Not Listed</u>
<u>Australian Inventory of Chemical Substances (AICS)</u>	<u>Not Listed</u>

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): Pyridine-3-sulphonyl chloride not listed

SARA 302/304 : Pyridine-3-sulphonyl chloride not listed

SARA 311/312 : See section 2, for more information.

California Prop. 65: Pyridine-3-sulphonyl chloride not listed

CAA (Clean Air Act): Pyridine-3-sulphonyl chloride not listed

CWA (Clean Water Act): Pyridine-3-sulphonyl chloride not listed

EU Information

Water hazard class (WGK) 3

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: Pyridine-3-sulphonyl chloride not listed

SECTION 16: OTHER INFORMATION

Compilation information of safety data sheet

Date of compilation : October 21, 2014
Chemical : Pyridine-3-sulfonyl chloride
CAS # : 16133-25-8
File Name : 0761Gj Ghs10 Div.3 sds Pyridine-3-sulfonyl chloride
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(a) 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.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- BCF = Bio Concentration Factor.
- TLV = Threshold Limit Value.



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- 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.
- ICAO = International Civil Aviation Organization.
- IATA/DGR = International Air Transport Association/Dangerous Goods Regulation.

(b) 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

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.
