



2-Chloro-6-methoxypyridine

Safety Data Sheet

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

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Supersedes date : Not applicable

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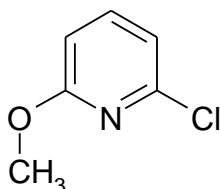
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SECTION 1.: IDENTIFICATION

1.1. Identification

PRODUCT NAME	2-Chloro-6-Methoxy Pyridine
CAS RN	17228-64-7
EC#	241-264-9
SYSTEMATIC NAME	2-Chloro-6-Methoxy Pyridine
MOLECULAR FORMULA	C ₆ H ₆ ONCl

STRUCTURAL FORMULA



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

- 2-Chloro-6-Methoxypyridine is used as an intermediate in the synthesis of Active Pharmaceutical Ingredients.

1.3. Details of the supplier of the safety data sheet

FACTORY & REGISTERED OFFICE: Jubilant Ingrevia Limited, Bhartiagram, Gajraula, And 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

Acute Toxicity (Oral): Category 4

Skin Corrosion/Irritation: Category 2

Serious eye damage/eye irritation: Category 2

Specific target organ toxicity: Category 3

(After single exposure)

Hazard Pictogram: GHS 07

Signal Word: Warning!



HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H302: Harmful if swallowed.



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- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

- P264: Wash hands thoroughly after handling.
- P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well ventilated area.
- P280: Wear protective gloves, eye protection/ face protection.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P302 + P352: IF ON SKIN: Wash plenty of soap and water.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P330: Rinse mouth.
- P332 + P337 + P313: If skin irritation occurs/If eye irritation persists: Get medical advice/ attention.
- P362: Take off contaminated clothing and wash before reuse.
- 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.
- P403 + P233: 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

- Substance is not classified as PBT nor as vPvB. For further details see section 12.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

Sr.No.	Chemical	CAS #	EC#	Purity
1.	2-Chloro-6-Methoxy Pyridine	17228-64-7	241-264-9	~99 %

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. 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.
- **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult give oxygen. Call a physician if you feel unwell.
- **Ingestion:** If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek medical attention

• Most important symptoms and effects, both acute and delayed

Acute effects:

- 2-Chloro-6-methoxypyridine is Harmful if swallowed, irritating to skin, eyes and respiratory system. Material is irritating to mucous membranes and upper respiratory tract.



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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

Notes to Physician: Treat symptomatically

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media.

- *Appropriate extinguishing media:* Dry chemical powder, carbon dioxide, and alcohol resistant foam. Water may also be used. Water can be effective in cooling down the fire-exposed containers and knocking down the vapours. 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.

- Toxic vapors may be released on thermal decomposition including nitrogen oxides, carbon monoxide carbon di-oxide and irritating and toxic fumes.
- High vapor concentration may result in an explosion hazard.
- Vapors are heavier than air. May travel considerable distance from source and flashback.

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).
- Report any run-off of firewater's contaminated with this chemical as per local and federal procedures applicable.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures.

Minor Spills

- Clean up all spills immediately following relevant Standard Operating Procedures.
- Avoid breathing vapors and contact with skin and eyes.
- Shut off leak source if possible.
- Shut off all possible sources of ignition.
- Wear protective clothing, boots, impervious gloves and safety glasses.
- Wipe up.
- Decontaminate all equipment.
- Use non-sparking tools.

Major Spill

- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- 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.
- Stop leaks if possible.
- Prevent, by any means available, spillage from entering drains or water and watercourses.
- Collect recoverable product into labeled containers for recycling, recovery or disposal.
- 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.

6.2. Environmental precautions.

- Clean up all spills immediately following relevant Standard Operating Procedures.



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- Inform authorities in event of contamination of any public sewers, drains or water bodies.
- Wipe up.
- Prevent, by any means available, spillage from entering drains or water and watercourses.
- Collect recoverable product into labeled containers for recycling, recovery or disposal.
- Contain spill with sand, earth or vermiculite.
- Spread area with lime or absorbent material, and leave for at least 1 hour before washing.

6.3. Methods and material for containment and cleaning up.

- Clean up all tools and equipment.
- Decontaminate all equipment.

6.4. Reference to other sections.

- For more information please refer to section 8 and 13.

SECTION 7: HANDLING AND STORAGE

Handling

- Do not breathe vapor or mist.
- 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.
- 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.

Storage

- Store at ambient temperature in a dry and well-ventilated place.
- Keep container tightly closed.
- Store away from incompatible materials.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

8.1.1 Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Chloro-6-methoxy pyridine	Not available	Not available	Not available

8.1.2 Exposure Limits (International):

- Not available.

8.1.3 Derived No-Effect-Levels (DNEL) / Predicted No-effect-concentration (PNEC)

- DNEL and PNEC data not available.

8.2. Exposure controls

8.2.1 Appropriate Engineering Controls:

- Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Local ventilation is usually preferred. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2. 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.
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.



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- **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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- **9.1. Information on basic physical and chemical properties**

S.No	Parameter	Typical value
1.	Appearance	Colorless to pale yellow liquid.
2.	Odor	Sweet
3.	Odor Threshold	Not available
4.	pH	5-6 (5% Soln in 30%w/w Aq.Methanol)
5.	Melting point/Freezing point	-2°C
6.	Boiling Point	185 - 186 °C - lit.
7.	Flash point	76.0 °C (closed cup)
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability	Combustible material
10.	Upper/lower flammability or Explosive limits	Not available
11.	Vapor pressure	0.832mmHg at 25 °C
12.	Vapor density (air=1)	Not available
13.	Relative density	1,207 g/mL at 25 °C
14.	Solubility	Insoluble in water
15.	Partition coefficient : n-(Octanol / water)	1.98
16.	Auto-ignition temperature	Not available
17.	Decomposition temperature	> 300°C
18.	Viscosity	Not available
19.	Explosive property	No
20.	Oxidizing property	No

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

- Stable under recommended storage condition.

10.2. Chemical stability



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- Stable under normal temperature and pressures.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Not reported.

10.4. Conditions to avoid

- Keep away from humid conditions, heat, sparks, flame, high temperature and incompatible chemicals, dust generation, u.v. light, strong oxidants agents. Avoid loosely closed container and fluctuating temperature.

10.5. Incompatible materials

- Strong Oxidizing agents.

10.6. Hazardous decomposition products

- Thermal decomposition may produce carbon monoxide and oxides of nitrogen, carbon dioxide & nitrogen, Hydrogen chloride, and irritating and toxic fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a) Acute toxicity

- **Oral Rat LD50:** 1780.11 mg/kg (Predicted Oral rat LD50 from consensus method)

b) Chronic Effects:

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

RTECS#: Unlisted.

LD50/LC50: Not available.

c) Skin corrosion/irritation

- Causes skin irritation.

d) Serious eye damage/irritation

- Causes eye irritation.

e) Respiratory or skin sensitization

- Irritating to the mucous membranes and upper respiratory tract.

f) Germ cell Mutagenicity

- No data is available.

g) Carcinogenicity

- Not listed by NTP, IARC and OSHA.
- Not present on the EU CMR list.
- According to the information presently available 2-Chloro-6-Methoxypyridine has not been tested for its ability to cause cancer in animals.

h) Reproductive toxicity

- No data is available.

i) STOT-single exposure

- No data is available.

j) STOT- repeated exposure

- No data available.

k) Aspiration Hazards

- No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity:

- Fathead minnow LC50 (96 hr) : 101.45 mg/l (Predicted Fathead minnow LC50 (96 hr) from consensus method)

Based on the predicted values it is expected to be non toxic to aquatic organisms with long lasting effects.

Persistence and degradability

- 2-Chloro-6-Methoxy Pyridine is unexpected to be persistent in the environment
- It is expected to be found predominantly in soil. It is also expected to be found in water, but not in sediment.
- It is expected to be not readily biodegradable.

Bio accumulative potential

- BCF = 9.47



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- Log Kow = 1.98

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.

Mobility in soil

- Log Koc = 2.25 (estimated). Moderate Sorption.
- Henry's Law Constant = 1.78×10^{-04} atm-m³/mole. It is volatile from aqueous bodies.
- Log Kow = 1.98 (estimated). Low potential to bio accumulate.

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 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.
- Exert extra care in igniting, as this material is combustible.
- 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.

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/ARD/RID/IMO/ IMDG.

Environmental hazards:

- Marine pollutant: No

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:** Acute Toxicity (Oral) Cat 4; Skin Irrit. Cat.2 ; Eye irrit Cat2; STOT SE Cat3
- **Hazard Statements:** H302; H315; H319;H335

Chemical Inventory Lists:	Status
TSCA:	Not listed
EINECS:	241-264-9
Canada(DSL/NDL):	Not Listed
Japan:	Not listed
Korea:	-----
Australia:	Not listed
China: IECSC	Not listed

US information

- This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:
- These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.
- The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on an SDS sheet.

CANADA

- The substance is not specified in any of the list and there is no control measure imposed on the substance.



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SECTION 16: OTHER INFORMATION

(a) Compilation information of safety data sheet

Chemical: 2-Chloro-6-Methoxy Pyridine

CAS #: 17228-64-7

File Name: 0559Gj Ghs00 Div.3 sds 2-Chloro-6-methoxypyridine

Revision Number: 00

Date of Issue of SDS: Not applicable

Revision Due Date: Not applicable

(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.
- IDLH= Immediately Dangerous to Life or Health.
- UEL= Upper Explosive Limit.
- LEL= Lower Explosive Limit.
- 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.
- CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act.
- SARA= Superfund Amendments and Reauthorization Act.
- NFPA= National Fire Protection Association.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- CSR=Chemical Safety Report.
- BCF = Bio Concentration Factor.
- DNEL = Derived No Effect Level.
- PNEC = Predicted No Effect Concentration.
- 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 europeen relative au transport international de marchandises.
- 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

- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- DIR 67/548/EWG, last modification by DIR 2009/2/EC
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 453/2009

Internet

- RTECS

Company's Declaration:



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Information contained in this SDS is believed to be correct but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. This SDS shall be used as a guide only. Jubilant Ingrevia Limited makes no warranties expressed or implied of the adequacy of this document for any particular purpose.

(End of Safety Data Sheet)
