



2-Chloropyridine

Safety Data Sheet

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

Date of Compilation : May 02, 2012
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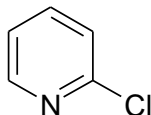
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

PRODUCT NAME	: 2-Chloropyridine
CAS RN	: 109-09-1
EC#	: 203-646-3
SYNONYMS	: Pyridine, 2-chloro-
SYSTEMATIC NAME	: 2-Chloropyridine
MOLECULAR FORMULA	: C ₅ H ₄ NCl
STRUCTURAL FORMULA	



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

1.2.1. Relevant identified uses

It is used as an intermediate in pharmaceuticals and pesticides.

Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

FACTORY OFFICE: Jubilant Ingrevia Limited (Unit-2), Plot No:-P1-L13 To L16, Within Jubilant sector specific SEZ for chemicals at Plot No:5, Vilayat GIDC, Taluka-Vagra, Distt: Bharuch, Gujarat, 392012 India, 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

1.4. Emergency telephone number

For Chemical Emergency (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

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquid: Category 4
Acute toxicity Oral: Category 4
Acute toxicity Dermal: Category 2
Acute toxicity Inhalation: Category 2
Skin Corrosion/Irritation: Category 2
Serious eye damage/irritation: Category 1
Specific Target organ toxicity: Category 2
(Repeated exposure)
Aquatic Acute: Category 1
Aquatic Chronic: Category 1

2.2. Label Elements

Hazard Pictogram: GHS06, GHS08, GHS05, GHS09

Signal Word: Danger!



HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H227: Combustible liquid
- H302: Harmful if swallowed.
- H310: Fatal in contact with skin.
- H330: Fatal if inhaled.
- H315: Causes skin irritation.



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- H318: Causes serious eye damage.
- H373: May cause damage to organs through prolonged or repeated exposure (liver).
- H410: Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P262: Do not get in eyes, on skin or on clothing.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P284: Wear respiratory protection.
- P273: Avoid release to the environment.
- P370+P378: In case of fire water Use ...for extinction.(Manufacturer/supplier or the competent authority to specify appropriate media.-if water increase risk.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- P330: Rinse mouth.
- P391: Collect spillage.
- P302+P350: IF ON SKIN: Gently wash with plenty of soap and water.
- P310: Immediately call a POISON CENTER or doctor/physician.
- P361: Remove/Take off immediately all contaminated clothing.
- P363: Wash 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.
- P314: Get medical advice/attention if you feel unwell.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container to local/regional/national/international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	CAS #	EC#	Purity
2-Chloropyridine	109-09-1	203-646-3	100%

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Key symptoms

Acute effects

2-Chloropyridine is harmful if swallowed. It is fatal if inhaled and contact with skin. It causes skin and serious eye irritation. It may cause damage to organs through prolonged or repeated exposure (liver). It is Lachrymator and may effects redness and severe burns on eye. Symptoms of overexposure during inhalation are weakness, dizziness, headache, nausea, loss of appetite and un-consciousness. If it is ingested it may effect of corrosive, abdominal pain, sore throat, collapse.

Chronic effects:

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

FIRST AID

- **Inhalation:**
Move to fresh air. Keep patient warm and at rest. Give oxygen or artificial respiration if needed.
- **Skin contact:**
Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Wash contaminated clothing before re-use.
- **Eye contact:**
Rinse immediately with plenty of water for at least 15 minutes. Keep eye wide open while rinsing.
- **Ingestion:**
Do NOT induce vomiting.Never give anything by mouth to an unconscious person.



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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 sprays 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.

5.2. Special Protective Equipment and Precautions for Fire Fighter

- This material is extremely hazardous to health, but fire fighters may enter areas with extreme care. Full protective clothing including a self-contained breathing apparatus, coat, pants, gloves, boots and bands around legs, arms and waist should be provided. No skin surface should be exposed.
- 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.
- Chemical is water-soluble. Report any run-off of fire waters contaminated with this chemical as per local and federal procedures applicable.

5.3. Unusual fire and explosion hazard

- Vapor may flow long distance to distant ignition sources and flash back. Forms explosive mixtures in air. Emits toxic fumes under fire conditions. Toxic vapors may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).
- Consider isolating the fire when it involves the material and permitting it to burn itself out. Do not allow water to enter container, because of exothermic reaction.
- Flashback along vapor trail may occur. Closed container exposed to heat may explode. Irritating vapors and toxic fumes of carbon monoxide may be released in fore conditions.
- Consider isolating the fire when it involves the material and permitting it to burn itself out. Move all personnel out of the fire area. Move away in event of any explosion. Keep at safe distance.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

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.

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.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe 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.

7.2. Storage

- Store at ambient temp, in dry and ventilated place.



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- Store away from incompatible materials.
- Keep securely closed when not in use.
- Keep only in original container.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

• Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Chloropyridine.	Not established	Not established	Not established

Exposure Limits (International):

- Not available.

OSHA Vacated PELs:

- No OSHA Vacated PELs are listed for this chemical.

8.2. Exposure controls

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.

8.3. 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.
- **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.

For emergency situations, wear a positive pressure, pressure-demand, full face piece self-contained breathing apparatus (SCBA) or pressure-demand supplied air respirator with escape SCBA and a fully-encapsulating, chemical resistant suit. (EPA, 1998).

General Hygiene and general comments:

- Immediately change contaminated clothing.
- Apply skin protective barrier cream.
- Wash hands and face after working with the substance.
- Under no circumstances eat or drink at the workplace.
- Do not inhale substances, work under hood.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Colorless to pale yellow clear transparent liquid.
2.	Odor	Irritating Odor.
3.	Odor Threshold	Not available
4.	pH	5.8 to 6.2
5.	Melting point	(-) 46 °C
6.	Boiling point	168-170°C @ 760.00mm Hg
7.	Flash point	65°C
8.	Evaporation rate (n-BuAc=1)	Not available.
9.	Flammability (Liquid)	Combustible Material
10.	Upper/lower flammability or Explosive limits	Not available.
11.	Vapor pressure	2.18mm Hg @ 25°C
12.	Vapor density (air=1)	Not available.
13.	Relative density	1.2g/cm ³ at 20°C



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14.	Solubility	Sparingly soluble in water. Miscible with most organic solvents.
15.	Partition coefficient (Octonol /water)	1.45 (estimated).
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

- **Stability:** Stable under normal condition of temperature and pressure.
- **Conditions to avoid:** Keep away from heat, sparks, flame, high temperature and incompatible, strong oxidants.
- **Incompatible chemicals:** Strong mineral acids, strong oxidizing agents and nitrates.
- **Hazardous decomposition:** Thermal decomposition may produce Hydrogen chloride, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
- **Hazardous Polymerization:** Not reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

- 2-Chloropyridine is harmful if swallowed. It is fatal if inhaled and contact with skin. It causes skin and serious eye irritation. It may cause damage to organs through prolonged or repeated exposure (liver). It is Lachrymator and may effects redness and severe burns on eye. Symptoms of overexposure during inhalation are weakness, dizziness, headache, nausea, loss of appetite and unconsciousness. If it is ingested it may effect of corrosive, abdominal pain, sore throat, collapse. It is Corrosive to skin.

RTECS # US5950000

Test Type	Species Observed	Reported Dose	Statement
Acute Oral LD50	Male Wistar rats	342 mg/kg	Male Wistar rats (6/dose) were administered 2-chloropyridine in 0.5% methylcellulose via gavage at 100, 215, 464, 681, 1000, 1470 or 2150 mg/kg-bw and observed for 14 days. Mortality occurred at 215 mg/kg-bw and above
Acute Dermal LD50	Male rats	64 mg/kg	Ten male rats (strain not specified) were exposed to 2-chloropyridine at approximately 6.05 mg/L for 6 hours and observed for 14 days. All rats died within 3 days following exposure.
Acute Inhalation LC50	Female rats	>100-<250PPM	Female rats (10-20/dose, strain not specified) were exposed to 2-chloropyridine via inhalation at concentrations of 50, 100, 250, 500 or 1000 ppm for durations ranging from 0.1 to 7.0 hours and observed for 14 days. Mortality occurred at concentrations \geq 100 ppm.

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye damage.
Respiratory or skin sensitization	:	It causes respiratory irritation.
Germ cell Mutagenicity	:	No information available.
Carcinogenicity	:	Not listed by NTP, IARC and OSHA. Not present on the EU CMR list. According to information presently available 2-Chloropyridine is not found to be carcinogenic.
Reproductive toxicity	:	No data is available.
STOT-single exposure	:	No data is available.
STOT- repeated exposure	:	May cause damage to organs through prolonged or repeated exposure (liver).



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Aspiration Hazards

No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea 2
2-Chloropyridine	Not listed	Not listed	EC50 = 70.0 mg/L 5 min EC50 = 71.6 mg/L 15 min EC50 = 71.6 mg/L 30 min	Not listed

12.2. Persistence and degradability

- Soluble in water Persistence is unlikely based on information available.

12.3. Bioaccumulative potential

- No information available

12.4. Mobility in soil

2-Chloropyridine (109-09-1)	
Log Kow	1.45 (estimated). Low potential to bioaccumulation.

Will likely be mobile in the environment due to its water solubility

12.5. Other adverse effects

- Environment Fate:**
Based on the environmental modeling, it is recommended that the material should not be disposed into the environment. Based on the Degradation studies in subsection (b) 2-Chloropyridine has a long term effects on the aquatic 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 reinstates.

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.

US DOT	IMDG	IATA
14.1. UN number 2822	2822	2822
14.2. UN proper shipping name 2-CHLOROPYRIDINE	2-CHLOROPYRIDINE	2-CHLOROPYRIDINE
14.3. Transport hazard class(es) 6.1	6.1	6.1
14.4. Packing group II	II	II
14.5. Environmental hazards		



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Dangerous for the environment : Yes	Marine pollutant : Yes	Dangerous for the environment : Yes
	EmS No. F-A , S-F	

Exposure time and Observation time

Packing Group	Exposure time	Observation time
II	> 3 min ≤ 60 min	≤14 days

SECTION 15: REGULATORY INFORMATION

Classification as per CLP Regulation 1272/2008:

- **Hazards Class and Category:** Flammable liq. Cat.4, Acute tox Oral Cat.4;Acute tox (dermal and inhalation) Cat.2, Skin irrit.Cat2, Eye damage cat.1, STOT Rep.Cat.2;Hazardous to environment Aquaticand Chronic Cat.1,
- **Hazard Statements:**H227,H302;H310;H330;H315;H318;H373;H400;H410

US information

- **TSCA**
CAS# 109-09-1 is listed on the TSCA inventory.
- **Health & Safety Reporting List**
None of the chemicals are on the Health & Safety Reporting List.
- **Chemical Test Rules**
None of the chemicals in this product are under a Chemical Test Rule.
- **Section 12b**
None of the chemicals are listed under TSCA Section 12b.
- **TSCA Significant New Use Rule**
None of the chemicals in this material have a SNUR under TSCA.
- **CERCLA Hazardous Substances and corresponding RQs**
None of the chemicals in this material have an RQ.
- **SARA Section 302 Extremely Hazardous Substances**
None of the chemicals in this product have a TPQ.
- **Section 313** No chemicals are reportable under Section 313.
- **Clean Air Act:**
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.
- **Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
- **OSHA:**
None of the chemicals in this product are considered highly hazardous by OSHA.
- **STATE**
CAS# 109-09-1 can be found on the following state right to know lists: New Jersey.
- **California Prop 65**
California No Significant Risk Level: None of the chemicals in this product are listed.
- **WGK (Water Danger/Protection)**
CAS# 109-09-1: No information available.
- **Canada - DSL/NDSL**
CAS# 109-09-1 is listed on Canada's NDSL List.

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation : May 02, 2012
Chemical : 2-Chloropyridine
CAS # : 109-09-1
File Name : 0152Bh Ghs20 Div.3 sds 2-Chloropyridine
Revision Number : 20



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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.
- 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.
- 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

- 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

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)