



2-Chloro-4-bromopyridine

Safety Data Sheet

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

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2-Chloro-4-bromopyridine

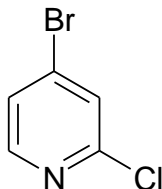
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product identifier

PRODUCT NAME	: 2-Chloro-4-bromopyridine
CAS RN	: 73583-37-6
EC#	: 629-180-4
SYNONYMS	: 2-CHLORO-4-BROMOPYRIDINE, 4-BROMO-2-CHLOROPYRIDINE, PYRIDINE, 4-BROMO-2-CHLORO-
TECHNICAL NAME	: 2-Chloro-4-bromopyridine
MOLECULAR FORMULA	: C ₅ H ₃ BrClN
STRUCTURAL FORMULA	



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

1.2.1. Relevant identified uses

2-Chloro-4-bromopyridine is used for research and development purposes. It is also used as an intermediate in the pharmaceutical industry.

Uses advised against: None

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

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity(Oral): Category 3	H302
Skin corrosion / irritant: Category 2	H315
Serious eye damage/eye irritation: Category 1	H318
Single Target organ toxicity (single exposure): Category 3	H335

2.2. Label Elements

According to regulation (EC) 1272/2008

Hazard Pictogram: GHS 07



GHS 07: Exclamation Mark



GHS 05: Corrosive

Signal Word: Danger!



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HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H335: May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264: Wash hands thoroughly after handling.
- P270; Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P310: Immediately call a POISON CENTER or doctor/physician.
- P362: Take off contaminated clothing and wash 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.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P403+P233: Store in a well ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container to local/regional/national/international regulations.

2.3 Other Hazards

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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance	CAS No.	EINECS No.	Purity	Classification acc. to reg.(EC) no. 1272/2008		
				Hazard Classes and categories	Pictograms Signal Words	Hazard Statements
2-Chloro-4-bromopyridine	73583-37-6	629-180-4	> 98%	Acute Toxicity Oral: Category 4 Skin corrosion/ irritant: Category 2 Serious eye damage/ eye irritation: Category 1 STOT(single exposure): Category 3	GHS 05 GHS 07	H302 H315 H318 H335

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:** If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
- **Ingestion:** If swallowed call a poison center if you feel unwell. Rinse mouth. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

4.2. Most important symptoms and effects, both acute and delayed.

- **Acute effects:**
Causes serious eye damage and skin irritation on contact. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound .and harmful if swallowed. Irritating to tissues of the mucous membranes and upper respiratory tract, digestive system, eyes and skin.



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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.

- Note to physicians Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- *Appropriate extinguishing media:* Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2. Special hazards arising from the substance or mixture

- Toxic vapors may be released on thermal decomposition including nitrogen oxides, carbon monoxide and carbon di-oxide halogenated compounds. WARNING: Highly toxic HBr and HCl gas is produced during combustion.
- 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.

5.4 Further information

- No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures.

6.1.1 For non-emergency personnel

- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Avoid breathing vapors and contact with skin and eyes.
- Shut off leak source if possible.
- Shut off all possible sources of ignition.
- Wipe up.
- Decontaminate all equipment.

6.1.2 For emergency personnel

- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate.
- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- Stop leaks if possible.
- Clean up all spills immediately following relevant Standard Operating Procedures.
- Avoid breathing vapors and contact with skin and eyes.

6.2. Environmental precautions.

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



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6.3. Methods and material for containment and cleaning up.

- Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
- 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

7.1. Precautions for safe handling

- Avoid formation of dust and aerosol.
- Do not breathe vapor or mist.
- Wear protective gloves/clothing and eye/face protection.
- Wash thoroughly after handling.
- 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. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

- 2-Chloro-4-bromopyridine is used for research and development purposes only. It is also used as an intermediate in the pharmaceutical industry.

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-4-bromopyridine	None listed	None listed	None listed

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.
- **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.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Yellowish colored liquid
2.	Odor	Characteristic odor
3.	Odor Threshold	Not available
4.	pH	6-7 (16g/l water @20 °C)
5.	Melting point/Freezing point	18-20 °C (64-68 °F)
6.	Boiling Point	65 - 70°C / 149 - 158°F @ 3 torr
7.	Flash point	107 °C
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability	Not available
10.	Upper/lower flammability or Explosive limits	Not available
11.	Vapor pressure	0.122 Torr at Temp.25° C
12.	Vapor density (air=1)	Not available
13.	Relative density	1.734 g/cm ³
14.	Solubility	Immiscible in water and soluble in Methylene di chloride, Toluene, Methanol, Hexane and Acetone.
15.	Partition coefficient : n-(Octonol / water)	2.34
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. Stability and reactivity

- No data available.

10.2. Chemical stability

- Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Not expected.

10.4. Conditions to avoid

- Incompatible products, Excess heat.

10.5. Incompatible materials

- Oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas, Hydrogen bromide gas
Other decomposition products - No data available



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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

- RTECS#: Not listed
- ACUTE ORAL LD50 (Rat): 652.25 mg/kg (Predicted Oral rat LD50 from Consensus method)
 - a) **Acute toxicity**
 - Harmful if swallowed.
 - b) **Skin corrosion/irritation**
 - It is irritating to skin.
 - c) **Serious eye damage/irritation**
 - It causes serious eye damage.
 - d) **Respiratory or skin sensitization**
 - No data is available.
 - e) **Germ cell Mutagenicity**
 - No data is available.
 - f) **Carcinogenicity**
 - No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA, or ACGIH.
 - g) **Reproductive toxicity**
 - No data is available.
 - h) **STOT-single exposure**
 - May cause respiratory irritation.
 - i) **STOT-repeated exposure**
 - No data available.
 - j) **Aspiration Hazards**
 - No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1 Ecotoxicity:

- Fathead minnow LC₅₀ (96 hr): 43.98 mg/L (Predicted Fathead minnow LC50(96 hr) from Consensus method)

12.2. Persistence and degradability

- It is expected to be not readily biodegradable in aerobic and anaerobic conditions. 2-Chloro-4-bromopyridine is estimated to be persistent in the environment.

12.3. Bio accumulative potential

- BCF = 16.23 (Estimated)
- Log Kow = 2.34 (Estimated)

2-Chloro-4-bromopyridine is not expected to bio accumulate in the food chain because it does not exceed the BCF criteria.

12.4. Mobility in soil

- Log Koc= 2.26 (Estimated). Low sorption.
- Henry's Law Constant: 1.31E-004 atm/m³ mole at 25 degrees.). It is volatile from aqueous bodies
- Log Kow =2.34. Low potential to bioaccumulate.

12.5. Results of PBT and vPvB assessment

- The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII

12.6. 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.



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SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Burn in a chemical incinerator equipped with an afterburner 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.

Contaminated packaging

- Dispose of as unused product.

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.

Mode of Transport	Agency
Land transport	ADR/RID
Maritime Transport	IMDG
Air Transport	IATA

14.1. UN number

- Not applicable.

14.2. UN proper shipping name

- Not applicable.

14.3. Transport hazard class (es)

- Not applicable.

14.4. Packing group

- Not applicable.

14.5. Environmental hazards

- It is expected that this chemical is not a marine pollutant and is not toxic to the Aquatic environment.

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 Tox Oral Cat.4, Eye Irrit. Cat 1, Skin Irrit. Cat.2, STOT(single exposure) Cat 3
- **Hazard Statements:** H302;H315,H318,H335

US information

TSCA

- CAS# 73583-37-6 is not listed on the TSCA inventory.

Canada – DSL/NDSL

- 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

Date of compilation : November 29, 2012
 Chemical : 2-Chloro-4-bromopyridine.
 CAS # : 73583-37-6
 File Name : 0521Gj Ghs00 Div.03 sds 2-Chloro-4-bromopyridine
 Revision Number : 00
 Date of Issue of SDS : April 02, 2024
 Revision Due Date : March, 2027
 Supersedes date : Not applicable
 Supersedes version : 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.
- 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.
- ADR = Accord European 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

- 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.

d) List of hazard statements

Hazards Statements	<ul style="list-style-type: none"> • H315: Causes skin irritation. • H318: Causes serious eye damage. • H302: Harmful if swallowed. • H335: May cause respiratory irritation.
Precautionary Statements	<ul style="list-style-type: none"> • P261,P264, P270; P271, P280, P301+P312, P330, P304+340, P310, P362, P305+P351+P338,P302+P352, P332+P313,P403+P233, P501

SDS EU (REACH Annex II)

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)