



## 2-Amino-5-bromopyridine

### Safety Data Sheet

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

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## 2-Amino-5-bromopyridine

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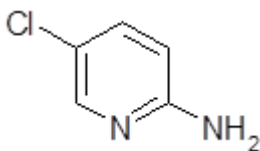
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#### SECTION 1: Identification

##### 1.1. Identification

**PRODUCT NAME** : 2-Amino-5-bromopyridine  
**CAS RN** : 1072-97-5  
**EC#** : 214-019-9  
**SYNONYMS** : 2-Pyridinamine, 5-bromo- ; 5-bromo-2-pyridylamine  
**SYSTEMATIC NAME** : 2-Amino-5-bromopyridine  
**MOLECULAR FORMULA** : C<sub>5</sub>H<sub>5</sub>BrN<sub>2</sub>

##### STRUCTURAL FORMULA



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

2-Amino-5-bromopyridine is used as an intermediate in the pharmaceutical industry for the manufacture of olprinone.

##### 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](mailto:support@jubl.com) - [www.jubilantingrevia.com](http://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	H302
Skin corrosion / irritant: Category 2	H315
Serious eye damage/eye irritant: Category 2A	H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system,	H335



**Hazard Pictogram:** GHS 07

**Signal Word:** Warning!

##### HAZARD AND PRECAUTIONARY STATEMENTS:

###### HAZARD STATEMENTS

- H302: Harmful if swallowed.
- H315: Causes skin, irritation.



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

#### PRECAUTIONARY STATEMENTS

- P261: Avoid breathing dust/fume/ gas/mist/vapors/ spray.
- P271: Use only outdoors or in well ventilated area.
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P270: Do not eat, drink or smoke when using this product.
- P302+352: IF ON SKIN: Wash with plenty of soap and water.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312: Call a POISON CENTER/doctor/Physician, if you feel unwell.
- P332+313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P337+313: If eye irritation persists: Get medical advice/attention.
- P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P403+P233: Store in well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container to local/regional/national/international regulations.

#### SECTION 3 : Composition/information on ingredients

Substance	CAS No.	Purity	GHS-US Classification
2-Amino-5-bromopyridine	1072-97-5	>98%	Acute toxicity Oral: Category 4 H302 Skin corrosion / irritant: Category 2 H315 Serious eye damage/eye irritant: Category 2A H319 Specific target organ toxicity - single exposure (Category 3), Respiratory system, 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:** Remove to fresh air and keep at rest in a position comfortable for breathing. 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.

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

###### Key symptoms

- **Acute effects:**  
2-Amino-5-bromopyridine is harmful if swallowed. It causes skin irritation and serious eye irritation. It may cause respiratory irritation.
- **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.

- 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 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. Advice for firefighters

- Toxic vapors may be released on thermal decomposition including nitrogen oxides, hydrogen chloride, carbon monoxide and Carbon di-oxide.
- High vapor concentration may result in an explosion hazard.
- When heated to decomposition, it emits highly toxic fumes of Bromine.



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- Vapors are heavier than air. May travel considerable distance from source and flashback.

#### 5.3 Special hazards arising from the substance or mixture.

- 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.
- Report any run-off of fire waters 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.

- 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.
- 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.

##### 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

##### 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. Conditions for safe storage, including any incompatibilities

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

##### 7.3. Specific end use(s)

- 2-Amino-5-bromopyridine is used as an intermediate in the pharmaceutical industry for the manufacture of olprinone



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#### SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

##### 8.1. Control parameters

###### 8.1.1 Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Amino-5-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.

- **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.
- **Hands:** Wear appropriate protective gloves and clothing 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.

###### In full Contact:

Glove material: Viton  
Layer thickness: 0.70 mm  
Breakthrough Time: >480 Min

###### In Splash Contact:

Glove material: Nitrile Rubber  
Layer thickness: 0.40 mm  
Breakthrough Time: >10 Min

###### General Industrial hygiene:

- 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 underhood.

#### SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

##### 9.1. Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Off white to light tan crystalline powder
2.	Odor	Odorless
3.	Odor Threshold	Not Available
4.	pH	Not Available
5.	Melting point/Freezing point	136-138 °C
6.	Boiling Point	244°C



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7.	Flash point	Not Available
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability	Non Flammable
10.	Upper/lower flammability or Explosive limits	Not available
11.	Vapor pressure	Not available
12.	Vapor density (air=1)	Not available
13.	Relative density	Not available
14.	Solubility	Insoluble in water
15.	Partition coefficient : n-(Octonol / water)	1.42
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

##### Reactivity

- **Stability:** Stable under normal temperature and pressures.
- **Conditions to avoid:** Keep away from High temperature, sparks, moist condition, mechanical shock, incompatible materials, and ignition sources, excess heat and strong oxidants.
- **Incompatible chemicals:** Strong-oxidizing agents, strong acids, strong bases.
- **Hazardous decomposition products:** Thermal decomposition may produce carbon monoxide and oxides of nitrogen, carbon dioxide, Hydrogen bromide and irritating and toxic fumes.
- **Hazardous Polymerization:** Not expected.

#### SECTION 11: TOXICOLOGICAL INFORMATION

##### a) Acute toxicity

- 2-Amino-5-bromopyridine is harmful if swallowed. It causes skin irritation and eye irritation. It may cause respiratory irritation.

RTECS#: Not listed.

LD50 Oral Rat: 700.03 mg/kg (Predicted Oral rat LD50 for 1072-97-5 from Consensus method)

##### b) Skin corrosion/irritation

- Causes skin irritation.

##### c) Serious eye damage/irritation

- Causes serious eye irritation.

##### d) Respiratory or skin sensitization

- No data available.

##### e) Germ cell Mutagenicity

- No data is available.

##### f) Carcinogenicity

- Not listed by NTP, IARC and OSHA.
- Not present on the EU CMR list.
- According to information presently available 2-Amino-5-bromopyridine is not found to be carcinogenic.

##### 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.



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#### SECTION 12: ECOLOGICAL INFORMATION

##### 12.1. Toxicity

##### Ecotoxicity:

- Fathead minnow LC<sub>50</sub> (96 hr) -177.05 mg/L (Expeimental).

##### 12.2 Persistence and degradability

- It is estimated that 2-Amino-5-bromopyridine is expected to be found predominantly in soil and is not readily biodegradable. 2-Amino-5-bromopyridine is estimated to be persistent in the environment.

##### 12.3 Bio accumulative potential

- BCF = 4.015
- Log Kow= 1.42 at 25 °C

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 relative to its surroundings. The estimated bio concentration factor (BCF) for 2-AMINO-5-BROM-PYRIDIN, 4, does not exceed the EPA bio concentration criteria. It has estimates that 2-Amino-5-bromopyridine is not expected to bio accumulate in the food chain because it does not exceed the BCF criteria

##### 12.4 Mobility in soil

- Koc = 55 (estimated). Low sorption.
- Henry's Law Constant= 9.93E-010 atm/m<sup>3</sup> mole at 25 degrees.
- Log Kow=1.42 at 25 °C (estimated). Low potential to bioaccumulation.

##### 12.5. Other adverse effects.

- **Environment Fate:**  
Based on the environmental modeling, this material is expected to be found predominantly in soil and it has estimated to be persistent in the environment. It is not expected to bio accumulate in the food chain because it does not exceed the BCF criteria. 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

- 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 non Hazardous for transport by Air/Rail/Road and Sea and thus not regulated by IATA/ ICAO/ US DOT/ TDG/ IMO/ IMDG.

##### Environmental hazards:

- Marine pollutant: No

#### SECTION 15: REGULATORY INFORMATION

##### Classification as per CLP Regulation 1272/2008:

- **Hazards Class and Category:** Acute Tox Oral Cat.4, Skin irrit Cat.2, Eye damage Cat.2, STOT (SE) Cat 3
- **Hazard Statements:** H302; H315; H319, H335

Chemical Inventory Lists:	Status
TSCA:	Not listed
EINECS:	214-019-9
Canada(DSL/NDSL):	Not listed
Japan:	Not listed
Korea:	Listed
Australia:	Not listed
China: IECSC	Listed
Taiwan	Listed

##### US information

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):** 2-Amino-5-bromopyridine is not listed

**SARA 302/304 :** 2-Amino-5-bromopyridine is not listed

**SARA 311/312 :** See section 2 for more information

**California Prop. 65:** 2-Amino-5-bromopyridine is not listed

**CAA (Clean Air Act):** 2-Amino-5-bromopyridine is not listed

**CWA (Clean Water Act):** 2-Amino-5-bromopyridine is not listed



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#### EU Information

**Water hazard class (WGK):** WGK 2 (Obviously hazardous to water)

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006:** 2-Amino-5-bromopyridine is not listed

#### SECTION 16: OTHER INFORMATION

##### Compilation information of safety data sheet

Date of Compilation : October 29, 2012  
Chemical : 2-Amino-5-bromopyridine  
CAS # : 1072-97-5  
File Name : 0145Gj Ghs07 Div.3 sds 2-Amino-5-bromopyridine  
Revision Number : 07  
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##### (a) A key or legend to aberrations and acronyms used in the safety data sheet;

- PBT = Persistent Bioaccumulative and Toxic.
- vPvB= Very Persistent and Very Bioaccumulative.
- 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.
- 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.
- CLP = Classification, Labelling 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.

##### 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)