

2-Amino-5-methylpyridine

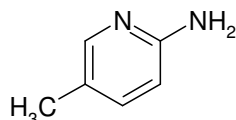
Safety Data Sheet

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

SECTION 1: Identification

1.1. Identification

| | |
|---------------------------|------------------------------------------------------------------------------|
| PRODUCT NAME | : 2-Amino-5-methylpyridine |
| CAS RN | : 1603-41-4 |
| EC# | : 216-503-5 |
| SYNONYMS | : 2 -Amino -5-picoline, 2 -Pyridinamine, 5-methyl-, 5-Methyl-2-aminopyridine |
| SYSTEMATIC NAME | : 2 -Pyridinamine, 5-methyl- |
| MOLECULAR FORMULA | : C ₆ H ₈ N ₂ |
| STRUCTURAL FORMULA | |



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

1.2.1. Relevant identified uses

- 2-Amino-5-methylpyridine is used as an intermediate in the pharmaceutical industry for the manufacture of Avosentan (used in diabetic nephropathy), Pirfenidone (anti-inflammatory, anti-oxidant and antifibrotic agent) and Zolpidem (sedative/ hypnotics). It is also used for the manufacture of Fluzaron, which is a pesticide and also for commercial purposes.

Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Jubilant Life Sciences Limited

FACTORY & REGISTERED OFFICE: Jubilant Life Sciences Ltd., Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh-244223, India
T +91-5924-252353 to 252360 Contact Department-Safety: Ext. 7424 F +91-5924-252352

HEAD OFFICE: Jubilant Life Sciences Ltd., 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.jubl.com

1.4. Emergency telephone number

Emergency number : +91-9997022412; +91-9359674864

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Toxicity Oral: Category 3
Acute Toxicity Dermal: Category 3
Skin irritation: Category 2
Serious eye damage/eye irritant: Category 2A

2.2. Label Elements

GHS-US labeling

Hazard Pictogram: GHS 06

Signal Word: Danger!



HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H301: Toxic if swallowed.
- H311: Toxic in contact with skin.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.

PRECAUTIONARY STATEMENTS

- 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.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.



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- P330: Rinse mouth.
- P302+P350: IF ON SKIN: Gently wash with plenty of soap and water.
- P361: Remove/Take off immediately all contaminated clothing.
- P363: Wash contaminated clothing before reuse.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P405: Store locked
- P501: Dispose of contents/container to local/regional/national/international regulations.

SECTION 3: Composition/information on ingredients

| Chemical | CAS # | Purity | GHS-US classification |
|--------------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-Amino-5-methylpyridine | 1603-41-4 | >98% | Acute Toxicity Oral: Category 3 Acute Toxicity Dermal: Category 3 Skin irritation: Category 2 Serious eye damage/eye irritant: Category 2A |

SECTION 4: First aid measures

4.1. Description of first aid measures

Key symptoms

- **Acute effects:**

Eyes: Irritation, redness, pain, burns, loss of vision.

Skin: Irritation, pain, redness, burns. Behavioral somnolence observed in test animals.

Ingestion: Abdominal pain, burning sensation, diarrhea, shock or collapse, sore throat or vomiting. May include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Exposure can cause gastrointestinal disturbance.

Inhalation: Sore throat, cough, burning sensation, shortness of breath, labored breathing, headache, nausea and vomiting. Exposure can cause headache, dizziness, heaviness and weakness of the arms and legs. Continued exposure may progress to convulsions and death.

- **Chronic effects:**

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

FIRST AID:

- **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.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Appropriate extinguishing media: Dry chemical powder, chemical foam, and alcohol resistant foam. Water may also be used. Water sprays Water may be in effective. Water sprays 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.

Special Protective Equipment and Precautions for Fire Fighter:

- 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.

Unusual fire and explosion hazard:

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



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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.
- 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.

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.
- Use non-sparking tools.

7.2. Storage

- Store in a cool, well ventilated place.
- Store in a flame proof area.
- 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 |
|--------------------------|-------------|-------------|-------------|
| 2-Amino-5-methylpyridine | None listed | None listed | None listed |

Exposure Limits (International):

- Not available.

OSHA Vacated PELs:

- No OSHA Vacated PELs are listed for this chemical.

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

- DNEL and PNEC data not available.

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.

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.



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- **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.
- 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:

- Wash hands and face after working with substance.
- Immediately change contaminated clothing.
- Apply skin protective barrier cream.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

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

| Sr.No. | Parameter | Typical value |
|--------|-----------------------------|----------------------------|
| 1. | Appearance | Yellowish solid crystals |
| 2. | Odor | Characteristic |
| 3. | Odor Threshold | Not available |
| 4. | Melting point | 76-77°C |
| 5. | Boiling point | 227 °C @760 mm Hg |
| 6. | Flash point | 118 ^o C |
| 7. | Evaporation rate (n-BuAc=1) | Not available |
| 8. | Explosive limits | Not available |
| 9. | Vapor pressure | Not available |
| 10. | Vapor density (air=1) | Not available |
| 11. | Specific gravity (water=1) | Not available |
| 12. | Solubility | 100 g/L in water (at 20°C) |
| 13. | pH | Not available |
| 14. | Log Kow (octanol/water) | 1.02 |
| 15. | Auto-ignition temperature | Not available |
| 16. | Decomposition temperature | Not available |
| 17. | Viscosity | Not available |
| 18. | Flammability | Non Flammable |
| 19. | Oxidizer | No |
| 20. | Corrosive material | No |
| 21. | Explosive material | No |

SECTION 10: STABILITY AND REACTIVITY

- **Stability:** Oxidizes and darkens with time. Heat and light accelerate this process.
- **Conditions to avoid:** Keep away from High temperature, sparks, moist condition, mechanical shock, incompatible materials, ignition sources, excess heat. Strong Heating,
- **Incompatible chemicals:** Strong oxidizing agents.
- **Hazardous decomposition products:** Thermal decomposition may produce carbon monoxide and oxides of nitrogen, carbon dioxide & nitrogen, Hydrogen chloride, hydrogen cyanide and irritating and toxic fumes.
- **Hazardous Polymerization:** Will not occur.



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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a) Acute toxicity

- 2-Amino-5-methylpyridine causes skin, eyes and respiratory tract irritation. It is toxic if swallowed. Target Organ is Central Nervous system.

RTECS#: TJ5141000

ACUTE ORAL LD50(RAT) = 200mg/kg

ACUTE DERMAL LD50:(GUINEA PIG) = 400 mg/kg

a) Skin corrosion/irritation

- Causes skin irritation.

b) Serious eye damage/irritation

- Causes eye irritation.

c) Respiratory or skin sensitization

- Causes irritation to respiratory system.

d) Germ cell Mutagenicity

- No data is available.

e) Carcinogenicity

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

f) Reproductive toxicity

- No data is available.

g) STOT-single exposure

- No data is available.

h) STOT-repeated exposure

- No data available.

i) Aspiration Hazards

- No data available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity:

It is expected to be chronically toxic to fish and other aquatic organisms.

- Fish 96-hr LC50 = 172.275 mg/l (Estimated).
- Fish 14-day LC50 = 111.235 mg/l (Estimated).
- Daphnia 48-hr LC50 = 1.363 mg/l (Estimated).

Persistence and degradability

- It is not expected to be readily biodegradable in aerobic and anaerobic conditions.
- The PBT Profiler has estimated that 2-Amino-5-methylpyridine is expected to be found predominantly in soil and its persistence estimate is based on its transformation in this medium.

Bioaccumulative potential

- BCF = 1.217 (Estimated)
- Log Kow = 1.02 (Estimated)

Based on the Log Kow and Bioconcentration factor value it is expected to have low potential to concentrate in fatty tissue of fish and aquatic organisms.

Mobility in soil (Predicted)

- Log Koc = 1.861 (estimated).
- Henry's Law Constant = 2.664E-007 atm-m³/mole.
- Log Kow = 1.02 (estimated).

Other adverse effects

- **Environment Fate:**
- Based on environmental modeling, it is estimated to be persistent in the environment and is expected to be found predominantly in soil. It is also expected to be found in water but not in sediment. It has low potential to bio accumulate and does not biodegrade readily.

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.



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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/ARD/RID/IMO/IMDG.

| S.No | Agency | UN Number | Proper Shipping name | Hazard Class | Packing Group |
|--------------------|---------|-------------------|-----------------------------------------------------------|--------------|---------------|
| Land Transport | ADR/RIC | UN 2811 | TOXIC SOLID, ORGANIC, N.O.S.(2-Amino-5-methylpyridine) | 6,(6.1) | III |
| Maritime Transport | IMDG | UN 2811 | TOXIC SOLID, ORGANIC, N.O.S.(2-Amino-5-methylpyridine) | 6,(6.1) | III |
| Air Transport | IATA | UN 2811 | TOXIC SOLID, ORGANIC, N.O.S.(2-Amino-5-methylpyridine) | 6,(6.1) | III |
| Hazard Label | | Toxic, 6,(6.1) | | | |

Environmental hazards:

- Marine pollutant: No

SECTION 15: REGULATORY INFORMATION

- European Union Information**
- Classification as per CLP Regulation 1272/2008:**
- Hazards Class and Category:** Acute tox oral cat.3; Acute tox dermal Cat.3, skin irritation Cat.2; Eye irritation Cat.2
- Hazard Statements:** H301; H311; H315; H319

| Chemical Inventory Lists: | Status |
|---------------------------|---------------|
| TSCA: | Present |
| EINECS: | 216-503-5 |
| Canada(DSL/NDSL): | Listed/NDSL |
| Japan: | Not available |
| Korea: | Not available |
| Australia: | Not available |
| China: IECSC | Present |

US information

- TSCA**
CAS# 1603-41-4 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.
- SARA**
- Section 302 (RQ)**
None of the chemicals in this material have an RQ.
- Section 302 (TPQ)**
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.



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- **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# 1603-41-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
- **California No Significant Risk Level:**
None of the chemicals in this product are listed.

SECTION 16: OTHER INFORMATION

Compilation information of safety data sheet

| | |
|----------------------|---------------------------------------------------|
| Date of compilation | : November 10, 2011 |
| Chemical | : 2-Amino-5-methylpyridine |
| CAS # | : 1603-41-4 |
| File Name | : 0018Gj Ghs09 Div.3 sds 2-Amino-5-methylpyridine |
| Revision Number | : 09 |
| Date of Issue of SDS | : December 14, 2015 |
| Revision Due Date | : November, 2017 |
| Supersedes date | : September 02, 2015 |

(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.
- RTECS= Registry of Toxic Effects of Chemical Substances.
- NTP=National Toxicology Programm.
- 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/NDL= 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, Authorisation and Restriction of Chemicals.
- CLP = Classification, Labelling and Packaging.
- LD / LC = Lethal Doses / Lethal Concentration.
- GHS = Globally Harmonised 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.

(b) 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

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 and specific property of the product.

(End of Safety Data Sheet)