



2-Amino-5-methylpyridine

Safety Data Sheet

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

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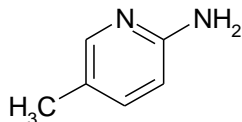
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SECTION 1: IDENTIFICATION

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 Fluazuron, 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 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

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.



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- P270: Do not eat, drink or smoke when using this product.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- 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	100%	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 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 at ambient temperature in a well-ventilated place.
- 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:

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- 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.
- **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	72-76°C
5.	Boiling point	227 °C @760 mm Hg
6.	Flash point	118°C
7.	Evaporation rate (n-BuAc=1)	Not available
8.	Explosive limits	Not available
9.	Vapor pressure	0.0278 mm Hg at 25°C (by Modified Grain Method)
10.	Vapor density (air=1)	Not available
11.	Specific gravity (water=1)	Not available
12.	Solubility	1000 mg/L in water (at 20°C)
13.	pH	Not available
14.	Log Kow (octanol/water)	1.08
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

10.1. Reactivity

- No data available



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10.2. Chemical stability

- Stable under normal temperature and pressures.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Not reported.

10.4. Conditions to avoid

- Keep away from heat, sparks, flame, high temperature and incompatible chemicals. Avoid contact with water.

10.5. Incompatible materials

- Moisture, contact with water, oxidizing agents, strong acids and nitriles.

10.6. Hazardous decomposition products

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

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#: T.J5141000

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:

- No data available.

Persistence and degradability

- It is not expected to be readily biodegradable in aerobic and anaerobic conditions.
- 2-Amino-5-methylpyridine is expected to be found predominantly in soil.

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.



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- 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.

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.

S.No	Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
Land Transport	US DOT	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 (Active)
EINECS:	216-503-5
Canada(DSL/NDSL):	Listed/NDSL
Japan:	Not available
Korea:	Not available
Australia:	Not available
China: IECSC	Present

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

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2-Amino-5-methylpyridine is not listed

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

SARA 311/312 : See section 2 for more information

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

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

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

EU Information

Water hazard class (WGK): WGK 3 (Severely hazardous to water)

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: 2-Amino-5-methylpyridine is not 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 Ghs14 Div.3 sds 2-Amino-5-methylpyridine
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(a) 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.
- 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.
- 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, 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.

(b) 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



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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)
