Safety Data Sheet

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

Product Identification: 2-Amino-5-chloropyridine (CAPE) 0146Gj Ghs12 Div.3 sds 2-Amino-5-chloropyridine (CAPE)

Date of issue: February 19, 2024

Date of Compilation : October 30, 2012

Date of Revision : February 19, 2024

Revision due date : January 2027

Revision Number : 13

Version Number : 0146Gj Ghs13 Div.3 sds 2-Amino-5-chloropyridine(CAPE)

Supersedes date : January 02, 2024

Supersedes version : 0146Gj Ghs12 Div.3 sds 2-Amino-5-chloropyridine

SECTION 1.: IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY

1.1 Product identification: 2-Amino-5-chloropyridine; CAS RN; 1072-98-6; EC# 214-020-4

1.1.1. **Trade name:** 2-Amino-5-chloropyridine (CAPE).

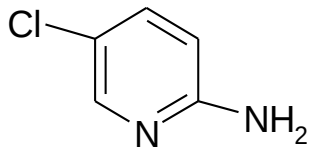
1.1.2. **Systematic Name:** 2-Amino-5-chloropyridine.

1.1.3. **Synonyms:** 2-Pyridinamine, 5-chloro-, 5-Chloro-2-pyridylamine, CAPE

1.1.4. **Other Languages**: De: 5-Chlor-2-pyridylamin.
Es: 5-cloro-2-piridilamina.
Fr: 5-chloro-2-pyridylamine.

1.1.5 **Molecular Formula** $C_5H_5ClN_2$

1.1.6. **Structural Formula:**



1.2 **Identified uses:** 2-Amino-5-chloropyridine is used as an intermediate in the pharmaceutical industry for the manufacture of Zopiclone, Zolpidem (hypnotic agents), Alpidem (an anti-anxiety drug). It is also used as an intermediate in the agrochemical industry for the manufacture of Clodinafop.

Uses advised against: None.

1.3 Company / supplier: ***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,

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Uttar Pradesh-201301 India.
PHONE NO: +91-120-4361000
FAX NO : +91-120- 4234881 / 84 / 85 / 87 / 95 / 96
Email: support@jubl.com
Website: www.jubilantingrevia.com

1.4 Emergency telephone:

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: HAZARDS IDENTIFICATION

2.1 Classification of the substance
GHS US CLASSIFICATION

Skin irritation: Category 2	H315
Acute toxicity oral: category 4	H302

Label elements

Pictograms:

GHS 07-Exclamation mark

Signal word: Warning!

Hazard and precautionary statements:

Hazard Statements

- H315: Causes skin irritation.

- H302: Harmful if swallowed.

PRECAUTIONARY STATEMENTS

Prevention

- P264: Wash clothes thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P270: Do not eat, drink or smoke when using this product.

Response

- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.

Disposal

- 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 INGERDIENTS

Substance	CAS No.	EINECS No.	Purity	GHS US CLASSIFICATION		
				Hazard Classes and categories	Pictograms Signal Words	Hazard Statements
2-Amino-5-chloropyridine	1072-98-6	214-020-4	> 98%	Skin irritation: Category 2 Acute toxicity oral: category 4	GHS 07	H315 H302

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. 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. Toxic vapours may be released on thermal decomposition including nitrogen oxides, carbon monoxide and cyanide.
- **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.

- ***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.

- ***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 may be in effective. Do not use water jet or fog (spray) to extinguish. 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. Special hazards arising from the substance or mixture.

- 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.

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).
- Chemical is water-soluble. Report any run-off of firewater's 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.

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.

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 ventilated place.
- Store away from incompatible materials.
- Keep securely closed when not in use.

7.3. Specific end use(s)

- 2-Amino-5-chloropyridine is used as an intermediate in the pharmaceutical industry for the manufacture of Zopiclone, Zolpidem (hypnotic agents), Alpidem (an anti-anxiety drug). It is also used as an intermediate in the agrochemical industry for the manufacture of Clodinafop.

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-chloropyridine	None listed	None listed	None listed

8.1.2Exposure 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.

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	Characteristic
3.	Odor Threshold	Not available
4.	pH	Not Available
5.	Melting point/Freezing point	134-138°C
6.	Boiling Point	127-128 °C @11 mmHg
7.	Flash point	160^0C
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability	No
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	1 g/L in water (at 20°C)
15.	Partition coefficient : n-(Octonol / water)	1.17
16.	Auto-ignition temperature	>700 °C
17.	Decomposition temperature	Not available
18.	Viscosity	Not available
19.	Explosive property	No
20.	Oxidizing property	No

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- No data available.

10.2. Chemical stability

- Stable under normal temperature and pressures.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Not expected.

10.4. Conditions to avoid

- Keep away from heat, sparks, flame, high temperature and incompatible chemicals, dust generation, u.v. light, strong oxidants.

10.5. Incompatible materials

- Strong-oxidizing agents, strong acids, strong bases.

10.6. Hazardous decomposition products

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a) Acute toxicity

- 2-Amino-5-chloropyridine causes skin irritation. It is harmful if swallowed.

- **RTECS#**: Not listed
- **ACUTE ORAL LD50 (RAT)** = >800 mg/kg
- **ACUTE DERMAL LD50 (RABBIT)** = Not available
- **ACUTE INHALATION LC50 (RAT)** = Not available

b) Skin corrosion/irritation

- Causes skin irritation.

c) Serious eye damage/irritation

- No data is available.

d) Respiratory or skin sensitization

- No data is 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-chloropyridine is not found to be carcinogenic.

g) Reproductive toxicity

- No data is available.

h) STOT-single exposure

- No data is available.

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 LC_{50} (96 hr)-134.98 mg/L (Predicted Fathead minnow LC50 (96 hr) from Consensus method)

12.2. Persistence and degradability

- Not readily biodegradable

12.3. Bio accumulative potential

- BCF = 1.6(Estimated)
- Log Kow = 1.17 (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.

12.4. Mobility in soil

- Log Koc = 1.73 (Estimated).
- Henry's Law Constant = 1.85E-009 atm-m3/mole
- Log Kow = 1.17 (Estimated).

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 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 bioaccumulate 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.
- 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 rinsates.

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 Harmful 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, Skin Irrit. Cat.2,
- **Hazard Statements:** H302;H315

Chemical Inventory Lists:	Status
TSCA:	Not listed
EINECS:	214-020-4
Canada(DSL/NDSL):	Not listed
Japan:	Not listed
Korea:	Not listed
Australia:	Not listed
China: IECSC	Not listed
Taiwan (TCSI)	Listed
New Zealand (NZloC)	Listed

US information

US information

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

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

SARA 311/312 : See section 2 for more information

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

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

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

EU Information

Water hazard class (WGK): WGK 3 (Severe hazards to water)

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006:

2-Amino-5-chloropyridine is not listed

SECTION 16: OTHER INFORMATION

(a) Compilation information of safety data sheet

Chemical: 2-Amino-5-chloropyridine
CAS #: 1072-98-6
File Name: 0146Gj Ghs13 Div.3 sds 2-Amino-5-chloropyridine
Revision Number: 13
Date of Issue of SDS: February 19, 2024
Revision Due Date: January, 2027

(b) 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 Adminstration 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 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/NDSL= Domestic/Non-Domestic Substances List
- CSR=Chemical Safety Report
- BCF = Bio Concentration Factor
- DNEL = Derived No Effect Level
- PNEC = Predicted No Effect Concentration
- TLV = Threshhold 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

(c) 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

Internet

- RTECS

(d) List of Hazard statements, precautionary statements.

Hazards Statements	• H315: Causes skin irritation. • H302: Harmful if swallowed.
Precautionary Statements	P264; P270; P280; P301+P312; P330; P302+P352; P332+P313; P362; P501

Company's Declaration:

Information contained in this SDS is believed to be correct but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. This SDS shall be used as a guide only. Jubilant Ingrevia Limited makes no warranties expressed or implied of the adequacy of this document for any particular purpose.

(End of Safety Data Sheet)