



2-chloro-5-trifluoromethylpyridine

Safety Data Sheet

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

Date of Compilation	: 22 December 2010
Date of Revision	: April 02, 2024
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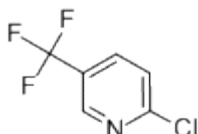
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

PRODUCT NAME	: 2-chloro-5-trifluoromethylpyridine
CAS RN	: 52334-81-3
EC#	: 257-856-5
SYNONYMS	: 2,5-CTF,CTF-5
SYSTEMATIC NAME	: 2-chloro-5-(trifluoromethyl)pyridine
MOLECULAR FORMULA	: C ₆ H ₃ ClF ₃ N
STRUCTURAL FORMULA	



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

1.2.1. Relevant identified uses

This product is mainly applied to the production of agrochemicals such as Fluazifop-P-butyl or pharmaceuticals.

1.2.2. 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

2.1. Classification of the substance or mixture

GHS-US classification

- Flammable liquid: Category 4
- Acute Toxicity (oral): Category 4
- Acute Toxicity (Inhalation): Category 4
- Specific target organ toxicity – single exposure: Category 1
- Specific target organ toxicity – repeated exposure: Category 1

2.2. Label Elements

Hazard Pictogram: GHS08

Signal Word: Danger!



HAZARD AND PRECAUTIONARY STATEMENTS:



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HAZARD STATEMENTS

- H227: Combustible liquid
- H302: Harmful if swallowed.
- H332: Harmful if Inhaled
- H370: Causes damage to organs <Central Nervous System>.
- H372: Causes damage to organs <Liver, Central and Peripheral Nervous System> through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS

- P210: Keep away from flames and hot surfaces.-No smoking.
- P260: Do not breathe duct/fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well ventilated area.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves /protective clothing.
- P301+P312: If SWALLOWED: Immediately call a POISON CENTER or doctor or 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.
- P307+P311: IF exposed: Call a POISON CENTER or doctor/physician.
- P363: Wash contaminated clothing before reuse.
- P370+P378: In case of fire: Use water for extinction.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose to content/container in accordance with local/regional/national/international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	CAS #	EC#	Purity	GHS US Classification
2-Chloro-5-(Trifluoromethyl)Pyridine	52334-81-3	257-856-5	>98%	<ul style="list-style-type: none">• Flammable liquid: Category 4• Acute Toxicity (oral): Category 4• Acute Toxicity (Inhalation): Category 4• Specific target organ toxicity – single exposure: Category 1• Specific target organ toxicity – repeated exposure: Category 1

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

- **If inhaled:** Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. If symptoms persist, call a physician.
- **In case of skin contact:** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
- **In case of eye contact:** Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- **If swallowed:** Clean mouth with water and drink afterwards plenty of water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.

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

Symptoms: No specific symptoms known.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

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SECTION 5 : FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- Use water spray, dry chemical, carbon dioxide, or appropriate foam.

5.2. Special hazards arising from the substance or mixture

- **Fire hazard:** Combustible liquid, Hazardous combustion gases and vapours possible in the event of fire.
- **Explosion hazard:** Explosive under influence of flame. Containers may explode when heated.
- **Reactivity in case of fire:** During fire, gases hazardous to health may be formed. In combustion emits toxic fumes. Carbon oxides. Nitrogen oxides (NO_x). Hydrogen fluoride (HF). Hydrogen chloride (HCl).
- **Hazardous decomposition products in case of fire:** Hazardous decomposition products may be released during prolonged heating like smokes, poisonous fume, Carbon oxides. Nitrogen oxides (NO_x). Hydrogen fluoride (HF). Hydrogen chloride (HCl).

5.3. Advice for firefighters

- **Precautionary measures fire:** Appropriate self-contained breathing apparatus may be required.
- **Firefighting instructions:** Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. In case of major fire, evacuate area.
- **Protective equipment for firefighters:** Do not enter fire area without proper protection equipment, including respiratory protection

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

- Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.
- Avoid dust vapours, mist or gas formation. Avoid breathing vapours, mist or gas. Avoid contact with skin and eyes.
- Wear protective clothing, full boots, impervious gloves, safety glasses and Self Contained Breathing Apparatus (SCBA), as may be deemed appropriate

6.2. Environmental precautions

- Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release

6.3. Methods and materials for containment and cleaning up

- Clean up all spills immediately following relevant Standard Operating Procedures.
- Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust.
- Place spillage in appropriately labeled container for disposal. Wash spill site.

6.4. Reference to other sections

- For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Wear protective gloves/clothing and eye/face protection.
- Avoid contact with skin and eyes.
- Control dust formation. Do not breathe dust.
- Wash hands thoroughly after handling.
- Avoid inhalation of high concentrations of vapours.
- Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.
- Avoid contact with naked flames and hot surfaces as there is a fire risk.
- Take precautionary measures against static discharges.
- Avoid contact with acids.
- 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.

7.2. Storage

- Store at ambient temperature in a dry and well-ventilated place.
- Keep container tightly closed when not in use.
- Do not store in open or unlabeled containers.
- Store away from incompatible materials
- Keep away from all heat sources, including direct sun-light, open flame, source of ignition, sparks etc.
- Take precautionary measures against static discharges.
- Keep away from acids.

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SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Chloro-5-(Trifluoromethyl)Pyridine	Not Listed	Not Listed	Not Listed

Exposure Limits (International):

- 2-chloro-5-(trifluoromethyl) pyridine: 2 ppm (15 mg/m³) LTEL (8 hr TWA) Mexichem UK Limited Company Standard.

8.2. Exposure controls

Appropriate Engineering Controls:

- General industrial hygiene practice.
- 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.

8.3. Personal Protection

- Body protection:**
Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Respiratory protection:**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- Eye protection:**
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Hand protection:**
The use of resistant protective gloves is recommended.
Skin protection creams do not protect as effectively against the substance as protective gloves. Therefore suitable protective gloves should be preferred as far as possible.

Occupational hygiene:

Take heed of usual occupational hygiene measures when handling chemical substances, especially wash the skin with soap and water before breaks and at the end of work and apply fatty skin-care products after washing.
Avoid contact with eyes. In case of contact rinse the affected eye(s).
Change clothing that has become wet and do not reuse until completely dry.
Increased risk of combustion from wicking.

Additional Information

- Only use protective equipment in accordance with national/international regulations. Follow the national regulation about wearing personal protective equipment and the warranty given.
- Apply skin protective barrier cream
- Do not inhale substances, work under hood.

Control of environmental exposure

- Do not let product enter drains.
- Wash hands and face after working with the substance.
- Under no circumstances eat or drink at the workplace.
- Do not inhale substances, work under hood.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr. No.	Parameter	Typical value
1.	Appearance	Colorless to light yellow liquid or crystal.
2.	Molecular weight	181.5
3.	Odor	Solvent like Odor
4.	Odor Threshold	No data available



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5.	pH	Not available
6.	Melting point	30.2 °C
7.	Boiling point	152 °C
8.	Flash point	65°C
9.	Evaporation rate (n-BuAc=1)	No data available
10.	Flammability	No data available
11.	Upper/lower flammability or Explosive limits	No data available
12.	Vapor pressure	40mm Hg at 70°C
13.	Vapor density (air=1)	No data available
14.	Density	1.417 at 25°C
15.	Solubility	Sparingly soluble in water, soluble in most organic solvents
16.	Partition coefficient (Octonol /water)	2.41 (estimated)
17.	Auto-ignition temperature	No information available
18.	Decomposition temperature	No information available
19.	Viscosity	No information available
20.	Explosive property	No information available
21.	Oxidizing property	Non oxidising

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** No data available
- **Chemical Stability:** Stable under recommended storage condition
- **Possibility of Hazardous Reactions:** No data available
- **Conditions to avoid:** Exposure to light. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition
- **Incompatible chemicals:** Strong oxidizing agents, strong acids, azo diazo compounds and hydrazine.
- **Hazardous decomposition:** Thermal decomposition may produce Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx), Hydrogen fluoride, Hydrogen chloride. Forms explosive mixture with air on intense heating.
- **Hazardous Polymerization:** Not reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

(a) Acute Toxicity

LD50 Oral-750 mg/kg (Worst case assumed LD50 based on ip LD50)

LD50 Intraperitoneal - mouse - 750 mg/kg

LD50 (Dermal) Rat: Not available

LD50 (Inhalation) Rat: 19 mg/l (4 hr)

RTECS# US7530000

CAS# 52334-81-3:

(b) Skin Corrosion/Irritation;

- Not irritating

(c) Serious Eye Damage/Irritation;

- Not irritating.

(d) Respiratory Or Skin Sensitization;

- not sensitizing

(e) Germ Cell Mutagenicity;

- cyt-mus-lym 600 mg/L
- msc-mus-lym 800 mg/L

(f) Carcinogenicity;



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- Not listed by ACGIH, IARC, NTP, or CA Prop 65.
- Not listed by NTP, IARC and OSHA.

- Not present on the EU CMR list.

(g) Reproductive Toxicity;

- No information available.

h) Repeated Dose Toxicity:

- Affects the nervous system and is also toxic specifically to the liver.

i) Aspiration Hazard:

- No information available.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

(a) Ecotoxicity:

Based largely or completely on information for a similar material. Material is harmful to aquatic organisms on an acute basis (LC50 or EC50 is >10 mg/L in the most sensitive species tested).

(b) Persistence and Degradability

It is expected to be not readily biodegradable.

(c) Bioaccumulative Potential (estimated)

BCF-18.13L/Kg (BCF = <100)

Log Kow= 2.41

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 relative to its surroundings.

(d) Mobility (Predicted):

Koc= 272 (Between 150 and 500). Log Koc=2.435 (estimated) Potential for mobility in soil is medium (Koc is between 150 and 500).

Henry's Law Constant 2.87E-003 atm-m³/mole at 25 degrees. It is expected to be volatile from aqueous phase.

Log Kow=2.41.

(e) Environment Fate:

Based on the environmental modeling, this material has a low potential to get absorbed in the organic matter of soil and is expected to be volatile from aqueous 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.

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 rinses.

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 /IMO/IMDG.

ADR/ RID/ DOT	IMDG	IATA
14.1. UN number		
Not Hazardous substance	Not Hazardous substance	Not Hazardous substance
14.2. UN proper shipping name		
Not Hazardous substance	Not Hazardous substance	Not Hazardous substance
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available		

SECTION 15: REGULATORY INFORMATION



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Classification as per CLP Regulation 1272/2008:

Hazards Class and Category:

- Acute Toxicity (oral): Category 4
- Acute Toxicity (Inhalation): Category 4
- Specific target organ toxicity – single exposure: Category 1
- Specific target organ toxicity – repeated exposure: Category 1

Hazard Statements: H302, H312, H370, H372

Chemical Inventory Lists:	Status
TSCA:	Not Listed
EC Inventory	Listed
Canada(DSL/NDSL):	Not Listed
China Catalog of Hazardous chemicals 2015	Not Listed
New Zealand Inventory of Chemicals (NZIoC)	Not Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed
Inventory of Existing and New Chemical Substances (ENCS)	Listed (MITI No. 5-5431)
Japan ISHL Existing Substances List (ISHL)	Listed
China: IECSC	Listed
Existing Chemicals List (KECI)	Listed
Australian Inventory of Chemical Substances (AICS)	Not Listed

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation : December 22, 2010
Chemical : 2-Chloro-5-(Trifluoromethyl)Pyridine
CAS # : 52334-81-3
File Name : 0613 Gj Ghs04 Div.05 sds 2-Chloro-5-(Trifluoromethyl)Pyridine
Revision Number : 04
Date of Revision : April 02, 2024
Revision Due Date : March, 2027
Supersedes date : Not applicable

b) A key or legend to aberrations and acronyms used in the safety data sheet

- 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.
- IARC= International Agency for Research on Cancer.
- TSCA= Toxic Substances Control Act.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- TLV = Threshold Limit Value.
- ACGIH = American Conference of Governmental Industrial Hygienists.
- REACH = Registration, Evaluation .Authorization and Restriction of Chemicals.
- CLP = Classification, Labeling and Packaging.
- GHS = Globally Harmonized System.
- IMDG-Code = International Maritime Code for Dangerous Goods.
- 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.



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- 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)
