



2-Chloro-5-nitropyridine

Safety Data Sheet

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

Date of Compilation:	October 15, 2009
Date of Revision:	February 25, 2021
Due date of Revision:	January 2024
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Version Number:	0567Gj Ghs02 Div.3 sds 2-Chloro-5-nitropyridine
Supersedes date:	June 23, 2020
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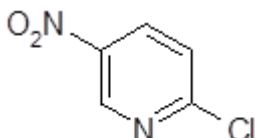
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product identification	: 2-Chloro-5-nitropyridine;
CAS RN	: 4548-45-2
EC#	: 224-908-3
Trade name	: 2-Chloro-5-nitropyridine
Systematic name	: 2-Chlor-5-nitro-pyridin
Synonyms	: 2-Chlor-5-nitro-pyridin; 2-Chloro-5-nitropyridine
Molecular Formula	: C ₅ H ₃ ClN ₂ O ₂
Structural Formula	



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

1.2.1. Relevant identified uses

- 2-Chloro-5-nitro-pyridine is used as an intermediate in the synthesis of Active Pharmaceutical Ingredients.

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 +91-5924-252353 to 252360 Contact Department-Safety: Ext. 7424 F +91-5924-252352

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

CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBERS :

North America: 1-800-255-3924

International: +1-813-248-0585

India: 000-800-100-4086

Brazil: 0-800-591-6042

Mexico: 01-800-099-0731

China: 400-120-0751

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS US CLASSIFICATION

Acute Toxicity: Category 4	H302	Harmful if swallowed.
Skin corrosion / irritant: Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritant: Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (Single exposure): Category 3	H335	May cause respiratory irritation

2.2. Label elements

GHS US CLASSIFICATION



Hazard Pictogram: GHS 07

Signal Word: Warning!

Hazard and precautionary statements:

Jubilant Ingrevia Limited



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Hazard Statements

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation
- H335: May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

- P261: Avoid breathing dust/fume/gas/mist/vapors/sprays.
- P270: Do not eat drink or smoke when using this product.
- P271: Use only outdoors or in well-ventilated place.
- P264: Wash hands, eyes and face thoroughly after handling.
- P280: Wear protective gloves/clothing and eye/face protection.
- P362: Take off contaminated clothing and wash before reuse.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor or physician.
- P330: Rinse mouth.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- 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.
- P403+P233: Store in a well ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container to local/regional/national/international regulations

2.3 Other Hazards

- Not available. For further details see section 12.

SECTION 3 : Composition/information on ingredients

Substance	CAS No.	EINECS No.	Purity	GHS US CLASSIFICATION
2-Chloro-5-nitropyridine	4548-45-2	224-908-3	≥ 98%	Acute Toxicity: 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 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. Monitor for respiratory distress. Apply artificial respiration if not breathing.
- **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.

- The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

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

- Notes to Physician: Treat Symptomatically

SECTION 5: FIRE-FIGHTING MEASURES



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5.1. Extinguishing media.

- *Appropriate extinguishing media:* Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- *Unsuitable Extinguishing Media :* No information available

5.2. Special hazards arising from the substance or mixture.

- Thermal decomposition can lead to release of irritating gases and vapors.
- Vapor is heavier than air and may travel along the ground to distant ignition sources and flash back. Vapors may accumulate in a confined area and form explosive mixture.
- **Hazardous Combustion Products:** Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride gas, Nitrogen oxides (NO_x), Phosgene
- **Explosion data**
Sensitivity to Mechanical Impact: No information available.
Sensitivity to Static Discharge No information available.

5.3. Advice for firefighters.

- As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
- Thermal decomposition can lead to release of irritating gases and vapors

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.
- Alert Emergency Responders and tell them location and nature of hazard.
- Shut off all possible sources of ignition and increase ventilation.
- Avoid breathing vapors and contact with skin and eyes.
- Avoid dust formation.
- Keep people away from and upwind of spill/leak.
- Evacuate personnel to safe areas.

6.2. Environmental precautions.

- Clean up all spills immediately and prevent, by spillage from entering drains or water and watercourses.
- Inform authorities in event of contamination of any public sewers, drains or water bodies.

6.3. Methods and material for containment and cleaning up.

- Methods for containment: Prevent further leakage or spillage if safe to do so
- Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly..

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 dust, 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)

- No data available.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION



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8.1. Control parameters:

8.1.1 Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Chloro-5-nitropyridine	Not Listed	Not Listed	Not 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.
- Hands:** Wear appropriate protective gloves to prevent skin exposure or as described below.

In full contact:

Glove Material: Nitrile rubber

Layer Thickness: 0.11 mm

Breakthrough time: > 480 Min

In splash contact:

Glove Material: nitrile rubber

Layer Thickness: 0.11 mm

Breakthrough time: > 480 Min

- Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- Clothing:** Wear appropriate protective gloves and clothing to prevent skin exposure.
- 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).

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Yellow Colored Light Solid.
2.	Odor	Odorless
3.	Odor Threshold	Not available
4.	pH	5-6 (16g/l water @20°C)
5.	Melting point/Freezing point	105-108 °C
6.	Boiling Point	256.6±20.0 °C at 760 mmHg
7.	Flash point	158°C (316°F)
8.	Evaporation rate (n-BuAc=1)	Not applicable (As it is a solid)
9.	Flammability	No information available
10.	Upper/lower flammability or Explosive limits	No information available
11.	Vapor pressure	0.0±0.5 mmHg at 25°C (Estimated)



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12.	Vapor density (air=1)	No information available
13.	Specific gravity (water=1)/Bulk density	1.5±0.1 g/cm ³ (estimated)
14.	Solubility	Slightly Soluble in water. Soluble in Toluene and DMF...
15.	Partition coefficient : n-(Octonol / water)	1.27
16.	Auto-ignition temperature	540 °C (1004 °F)
17.	Decomposition temperature	No information available
18.	Viscosity	No information available
19.	Explosive property	No information available
20.	Oxidizing property	No information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- None known, based on information available.

10.2. Chemical stability

- Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization: Hazardous polymerization does not occur, None under normal processing.

10.4. Conditions to avoid

- Incompatible products.

10.5. Incompatible materials

- Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

- Thermal decomposition may produce Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen chloride gas. Nitrogen oxides (NO_x). Phosgene

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a) Acute toxicity

RTECS#: US7175000

ACUTE ORAL LD₅₀ (Rat) = 738.87 mg/kg (Predicted Oral rat LD50 from Consensus method)

LdLo (Intraperitoneal) mouse: 500 mg/kg

- Harmful if swallowed.

b) Skin corrosion/irritation

- Causes skin irritation

c) Serious eye damage/irritation

- Causes serious eye irritation.

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-chloro-5-nitropyridine 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.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1 Ecotoxicity:

- Fathead minnow LC50 (96 hr) : 24.26 mg/L (Predicted Fathead minnow LC50 (96 hr) from Consensus method by US EPA Test Tool)



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- Daphnia magna LC₅₀ (48 hr): 43.14 mg/L (Predicted Daphnia magna LC₅₀ (48 hr) from Consensus method by US EPA Test Tool)
- Based on the predicted values it is expected to be non toxic to aquatic organisms with long lasting effects.

12.2. Persistence and degradability

- 2-Chloro-5-nitro-pyridine is unexpected to be persistent in the environment
- It is expected to be found predominantly in soil. It is also expected to be found in water, but not in sediment.
- It is not expected to be readily biodegradable in aerobic and anaerobic conditions.

12.3. Bioaccumulative potential

- BCF = 3.183 (Estimated)
- Log Kow = 1.27. Low potential to bioaccumulate
- 2-chloro-5-nitropyridine is not expected to bioaccumulate in the food chain because it does not exceed the BCF criteria..

12.4. Mobility in soil

2-Chloro-5-nitropyridine	
Log Koc	2.25 (Estimated).
Henry's Law constant	1.30E-006 atm-m ³ /mole
Log Kow	1.27. Low potential to bioaccumulate

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. 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 rinsates..

SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be non-Hazardous for transport by Air/Rail/Road and Sea and thus it is not regulated by IATA/ICAO/ARD/RID/IMO/IMDG/ US DOT.

ADR/ RID	IMDG	IATA
14.1. UN number		
Not Dangerous Good	Not Dangerous Good	Not Dangerous Good
14.2. UN proper shipping name		
Not Dangerous Good	Not Dangerous Good	Not Dangerous Good
14.3. Transport hazard class(es)		
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14.4. Packing group		
--	--	--
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

- **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture.**
- European/International Regulations.
- European Labelling in Accordance with EC Directives.

Classification (as per Regulation (EC) No 1272/2008):



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- **Hazards Class and Category:** 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 ; H335
- **Hazard Statements:** H302;H315, H319, H335

Chemical Inventory Lists:	Status
TSCA:	Not Listed
EINECS:	224-908-3
Canada(DSL/NDSL):	Not Listed
Japan:	Not Listed
Korea:	Listed
Australia:	Not Listed
China: IECSC	Not Listed

Biocidal Products Directive (Directive 98/8/EC) Information:

There is no information in ESIS for this substance with respect to the BPD.

Classification and Labelling Information:

This substance is not classified in the Annex I of Directive 67/548/EEC as such, but it may be included in one of the group entries.

Export and Import of Dangerous Chemicals (Regulation (EC) No 689/2008) Information:

This substance is not listed in the Annex I of Regulation (EC) No 689/2008.

HPV-LPV (High and Low Production Volume) Information:

This substance has not been reported by EU Industry as an HPVC or LPVC.

IUCLID & OECD Chemical Data Sheets and Export Files Information:

Not available for this substance.

European Priority Lists and Risk Assessment (Council Regulation (EEC) No 793/93) Information:

This substance is not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.).

CANADA

The substance is not specified in any of the list and there is no control measure imposed on the substance.

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

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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
- 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



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- 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, Labeling and Packaging
- LD / LC = Lethal Doses / Lethal Concentration
- GHS = Globally Harmonized System
- ADR = Accord European 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

(a) 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

(b) List of hazard statements

Hazards Statements	
	<ul style="list-style-type: none">• H302: Harmful if swallowed.• H315: Causes skin irritation.• H319: Causes serious eye irritation• H335: May cause respiratory irritation.

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)