2-Methoxy-5-nitropyridine

Safety Data Sheet

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

Date of Compilation : April 02, 2024

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Version Number : 0643Gj Ghs00 Div.3 sds 2-Methoxy-5-nitropyridine

Supersedes date : Not applicable

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2-Methoxy-5-nitropyridine

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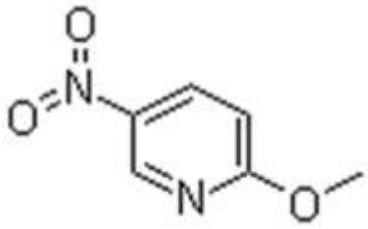
According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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

1.1. Product identifier

Product name : 2-Methoxy-5-nitropyridine
CAS RN : 5446-92-4
EC# : 226-661-7
Trade name : 2-Methoxy-5-nitropyridine.
Systematic Name : 2-Methoxy-5-nitropyridne.
Synonyms : 6-Methoxy-3-nitropyridine; 2-METHOXY-5-NITROPYRIDINE;5-NITRO-2-METHOXY PYRIDINE;METHOXY(2-)-5-NITROPYRIDINE;Pyridine,2-methoxy-5-nitro-;2-Methoxy-5-nitropyridine.
Molecular Formula : $C_6H_6N_2O_3$
Structural Formula :



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

1.2.1 Identified uses

2-Methoxy-5-nitropyridine is used for research and development purposes only. It is probably used as an intermediate in the pharmaceutical industry. It can be used to prepare 6-methoxy-pyridin-3-ylamine.

Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

1.4.

FACTORY & REGISTERED OFFICE: Jubilant Ingrevia Limited, Bhartiagram, Gajraula, And District: Amroha, Uttar Pradesh-244223, India
T +91-5924-267437& +91-5924-267438

1.5.

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

1.6. 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 4	H302
Skin corrosion / irritant: Category 2	H315
Serious eye damage/eye irritation: Category 2	H319
Specific organ toxicity single exposure: Category 3	H335

2.2. Label Elements

GHS US Classification

Hazard Pictogram: GHS 07

Signal Word: Warning!

GHS 07: Exclamation Mark

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

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

PRECAUTIONARY STATEMENTS

- P264: Wash hands, eyes and face thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves/clothing and eye/face protection.
- P271: Use only outdoors or in a well-ventilated area.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P330: Rinse mouth.
- P332 + P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- P305 + P351 + P338: IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rising.
- P337 + P313: If eye irritation persists: Get medical advice/attention.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- 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 INGREDIENTS

Chemical	CAS #	EC#	Purity	GHS US Classification
2-Methoxy-5-nitropyridine	5446-92-4	226-661-7	>98%	Skin corrosion / irritant: Category 2 Serious eye damage/eye irritation: Category 2 Acute Toxicity Oral: Category 4 Specific organ toxicity single exposure: Category 3

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Key symptoms

Acute effects

- Rinse eyes cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek medical attention.
- Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell.

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

Acute effects:

- 2-Methoxy-5-nitropyridine is harmful if swallowed, irritating to skin, eyes and may cause irritation to mucous membrane and upper respiratory tract.

Chronic effects:

- Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions

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

- Consult a physician. Show this safety data sheet to the doctor in attendance.
- **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:** Remove contaminated clothing. Wash off with plenty of water. Wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor.
- **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell. Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce 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. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- *Appropriate extinguishing media*: Dry chemical powder, carbon dioxide, and alcohol resistant foam. Water may also be used. 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 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.

5.3. Special hazards arising from substance

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

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.
- Use non-sparking tools.

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

- Wear protective gloves/clothing and eye/face protection.
- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Ground and secure containers when dispensing or pouring product.
- 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.
- Avoid contact with skin and eyes.
- Provide appropriate exhaust ventilation at the workplace.

7.2. Conditions for safe storage, including any incompatibilities

- Store at ambient temperature.
- Keep container tightly closed in a dry and well-ventilated place.
- Keep in original container.
- Store away from incompatible materials.

7.3. Specific end use(s)

- 2-Methoxy-5-nitropyridine is used for research and development purposes only. It is probably used as an intermediate in the pharmaceutical industry. It can be used to prepare 6-methoxy-pyridin-3-ylamine.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Chemical name	STEL (ppm)	NIOSH	OSHA	ACGIH
2-Methoxy-5-nitropyridine	None available	None available	None available	None available

Exposure Limits (International):

- Not available.

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

- DNEL and PNEC data not available.

8.2. 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.

8.3. Personal Protection

- **Eye/face protection:** Safety goggles/ Chemical Safety glasses and Face shield.
- **Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
- **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:** 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 the substance.
- Under no circumstances eat or drink at the workplace.

9.1. Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1)	Appearance	White to light yellow solid
2)	Odor	Faint odor – characteristic odor
3)	Odor Threshold	Not available
4)	pH	Not available

5)	Melting point/Freezing point	105 - 110 °C
6)	Boiling Point	258.9±20.0 °C Press: 760 Torr (Estimated)
7)	Flash point	130°C (266.00°F)
8)	Evaporation rate (n-BuAc=1)	Not available
9)	Flammability	Non-Flammable
10)	Upper/lower flammability or Explosive limits	Not available
11)	Vapor pressure	0.0216 Torr at Temp: 25 °C (Estimated)
12)	Vapor density (air=1)	Not available
13)	Relative density	Not available
14)	Solubility	Insoluble in water
15)	Partition coefficient : n-(Octonol / water)	1.55 (estimated)
16)	Auto-ignition temperature	445°C (833.00°F)
17)	Decomposition temperature	Not available
18)	Viscosity	Not available
19)	Explosive property	Not available
20)	Oxidizing property	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No information available

10.2. Chemical stability

Stable under normal condition of temperature and pressure. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place.

10.3. Possibility of hazardous reactions

Hazardous Polymerization: Not Reported.

10.4. Conditions to avoid

Keep away from heat, moisture and incompatible chemicals. Avoid excessive heat and light.

10.5. Incompatible materials

Strong oxidizing agents, strong acids and bases.

10.6. Hazardous decomposition products

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

- 2-Methoxy-5-nitropyridine is Harmful if swallowed, irritating to skin, eyes and may cause irritation to mucous membrane and upper respiratory tract.

RTECS#: Unlisted

LD50 Oral Rat: 1213.18 mg/kg (Predicted Oral rat LD50 from Consensus method)

Skin corrosion/irritation	:	Causes skin irritation.
Eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	No data available
Germ cell Mutagenicity	:	No data Available
Carcinogenicity	:	Not listed by IARC and OSHA. IARC : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC
Reproductive toxicity	:	No data available
STOT-single exposure	:	May cause irritation to respiratory system.
STOT- repeated exposure	:	No data available.
Aspiration Hazards	:	No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

- Fathead minnow LC_{50} (96 hr): 55.74 mg/L (Predicted Fathead minnow LC50 (96 hr) from Consensus method)
- The Chemical is insoluble in water and Fish ChV is 64mg/l.This indicates that a saturated aqueous solution of the chemical (one where the maximum water solubility has been reached) does not have a concentration high enough to allow potential toxic effects to be expressed

12.2. Persistence and degradability

- 2-Methoxy-5-nitropyridine is to be found predominantly in soil and its persistence estimate is based on its transformation in this medium. Its half-life in soil, 75 days, exceeds the EPA criteria of >= 2 months (and <= 6 months). It is also expected to be found in sediment, but not in eater. Therefore, 2-Methoxy-5-nitropyridine is estimated to be persistent in the environment.

12.3. Bio accumulative potential

2-Methoxy-5-nitropyridine (5446-92-4)	
Log Kow	1.55 (estimated). Low potential to bio accumulate.
Bio concentration Factor	3.115

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

2-Methoxy-5-nitropyridine (5446-92-4)	
Koc	154 at pH 1at Temp: 25°C(Estimated)Low sorption
Henry's Law Constant	5.034E-007atm-m^3.mole.. It is having low volatility from aqueous bodies.
Log Kow	1.55 (estimated). Low potential to bio accumulate.

12.5. Results of PBT and vPvB assessment

- The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII.

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 reinstates.

Contaminated packaging

- Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

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

Transport	Agency	Class	UN Number
Land Transport	ADR/RID	Not Dangerous good	Not Applicable
Maritime Transport	IMDG	Not Dangerous good	Not Applicable
Air Transport	IATA	Not Dangerous good	Not Applicable

SECTION 15: REGULATORY INFORMATION

Classification as per CLP Regulation 1272/2008::

- **Hazards Class and Category:** Acute Tox. Cat. 4, Skin Irrit.cat.2, Eye irrit.cat.2A, STOT SE cat 3.
- **Hazard Statements:** H302, H315; H319; H335.

US information

- **TSCA**
  - CAS# 5446-92-4 is not listed on the TSCA inventory.
- **EPA**
  - CAS# 5446-92-4 is not listed on the EPA inventory. This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:
  - These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.
  - The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on an MSDS sheet.
  - **OSHA:** None of the chemicals in this product are considered highly hazardous by OSHA.
- **WHIMS Canada –** DSL/NDSL
  - CAS# 5446-92-4is not listed in DSL/NDSL.

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation	: April 02, 2024
Chemical	: 2-Methoxy-5-nitropyridine
CAS #	: 5446-92-4
File Name	: 0643Gj Ghs00 Div.5 sds 2-Methoxy-5-nitropyridine
Revision Number	: 00
Date of Issue of SDS	: 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

- 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.
- OELTWA= Occupational Exposure Limit Time Weighted Averages.
- 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.
- SARA= Superfund Amendments and Reauthorization Act.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- BCF = Bio Concentration Factor.
- 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 merchandises.
- 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

- 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.

Internet

- RTECS
- Pubchem

d) List of hazard statements

Hazards Statements	• 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)