



N-Methylpiperidine

Safety Data Sheet

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

Date of Compilation	: December 01, 2008
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N-Methylpiperidine

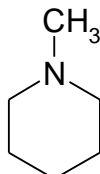
Safety Data Sheet

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SECTION 1: Identification

1.1. Identification

PRODUCT NAME	: N-Methylpiperidine
CAS RN	: 626-67-5
EC#	: 210-959-9
SYNONYMS	: 1-Methylpiperidine, Piperidine, 1-methyl-
SYSTEMATIC NAME	: 1-Methylpiperidine
MOLECULAR FORMULA	: C ₆ H ₁₃ N
STRUCTURAL FORMULA	



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

- N-Methylpiperidine is used as an intermediate in the synthesis of pharmaceutical industry and agrochemicals like Mepiquat chloride.

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

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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 CLASSIFICATION

Flammable Liquids: Category 2
Acute Toxicity oral: Category 4
Acute Toxicity Dermal: Category 4
Acute Toxicity Inhalation: Category 3
Skin corrosion / irritant: Category 1B
Serious eye damage/eye irritation: Category 1
Hazardous to the aquatic environment (long-term): Category 3



Hazard Pictogram: GHS 02, GHS 06, GHS 05

Signal Word: Danger!

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H225: Highly flammable liquid and vapour.
- H302: Harmful if swallowed.
- H312: Harmful in contact with skin.
- H331: Toxic if swallowed.
- H314: Causes severe skin burns and eye damage.
- H412: Harmful to aquatic life with long lasting effects.



N-Methylpiperidine

Safety Data Sheet

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

PRECAUTIONARY STATEMENTS

- P210: Keep away from heat/sparks/open flames/hot surfaces.No smoking.
- P233: Keep container tightly closed.
- P243: Take precautionary measures against static discharge.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P271: Use only outdoors or in a well-ventilated area.
- P273: Avoid release to the environment.
- P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P302+352: IF ON SKIN: Wash with plenty of soap and water.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P363: Wash contaminated clothing before reuse.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- 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.

SECTION 3 : Composition/information on ingredients

Substance	CAS No.	EC No.	Purity	GHS-US Classification
N-Methylpiperidine	626-67-5	210-959-9	>99%	H225: Highly flammable liquid and vapour. H302: Harmful if swallowed. H312: Harmful in contact with skin. H331: Toxic if swallowed. H314: Causes severe skin burns and eye damage. H412: Harmful to aquatic life with long lasting effects.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1 Route of exposure: Inhalation skin, eye and ingestion.

4.1.2 Advice

- 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:**

Eyes: Causes severe eye damage.

Skin: Causes severe skin burns, Harmful in contact with skin.

Ingestion: Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause central nervous system effects and/or neurological effects.

Inhalation: Toxic if inhaled.

- **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.



N-Methylpiperidine

Safety Data Sheet

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

- **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, carbon dioxide, and alcohol resistant foam. 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 carbon dioxide.
- 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.

Minor Spills

- Clean up all spills immediately following relevant Standard Operating Procedures.
- Avoid breathing vapors and contact with skin and eyes.
- Wear protective clothing, boots, impervious gloves and safety glasses.
- Wipe up.
- Decontaminate all equipment.

Major Spill

- Alert Emergency Responders and tell them location and nature of hazard.
- 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.

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.



N-Methylpiperidine

Safety Data Sheet

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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.
- Take precautionary measures against static discharges.
- 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 dry and ventilated place.
- Keep dry & protected from direct sunlight.
- Store away from incompatible materials.
- Keep securely closed when not in use.
- Keep only in original container.
- Keep away from sources of ignition.

7.3. Specific end use(s)

- Not available

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

8.1.1 Exposure Limits Values

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
N-Methylpiperidine	Not available	Not available	Not available

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.
- **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 Industrial hygiene:

- Immediately change contaminated clothing.
- Apply skin protective barrier cream.
- 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.



N-Methylpiperidine

Safety Data Sheet

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

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1.	Appearance	Clear colorless to light yellow liquid.
2.	Odor	Odorless
3.	Odor Threshold	Not Available
4.	pH	7.4 to 7.8 (10% aq. Solution @20 °C)
5.	Melting point/Freezing point	-103.23°C at 1013 hPa
6.	Boiling Point	105 – 108° C @ 760 mmHg
7.	Flash point	3°C (37.40° F)
8.	Evaporation rate (n-BuAc=1)	Not available
9.	Flammability	Highly Flammable
10.	Upper/lower flammability or Explosive limits	Lower: 0.90 Vol % Upper: 11.50 Vol %
11.	Vapor pressure	35.7 hPa @ 20° C
12.	Vapor density (air=1)	Not available
13.	Specific gravity (water=1)/Density	0.817 g/cm3
14.	Solubility	Miscible in water. Soluble in polar solvents like methanol ,ethanol etc.
15.	Partition coefficient : n-(Octanol / water)	1.15 at 25°C
16.	Auto-ignition temperature	215° C at 1013HPa
17.	Decomposition temperature	Not available
18.	Viscosity	Not available
19.	Explosive property	No
20.	Oxidizing property	No

SECTION 10: STABILITY AND REACTIVITY

Reactivity

- Not available.

Chemical stability

- Stable under normal temperature and pressures.

Possibility of hazardous reactions

- Hazardous Polymerization: Not reported.

Conditions to avoid

- Keep away from High temperature, heat, flame, ignition temperature, moist condition, mechanical shock and incompatible materials.

Incompatible materials

- Acids, Bases, Oxidizing agents, Acid chlorides, Carbon dioxide and Acid anhydrides.

Hazardous decomposition products

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

SECTION 11: TOXICOLOGICAL INFORMATION

a) Acute toxicity

- N-Methylpiperidine is Toxic if inhaled, harmful if swallowed and on contact with skin. It causes severe skin burns and eye damage. It is irritating to tissues of the mucous membranes and upper respiratory tract. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound

RTECS#: TN1225000

Oral LDLo – Rabbit : 25mg/kg

Oral, Rat LD50 : 490 mg/kg

Inhalation,Rat LC50 : 4.8mg/l

Dermal,Rat LD50: >1000 - < 2000 mg/kg

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Safety Data Sheet

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

- a) **Skin corrosion/irritation**
 - Causes severe skin burns
- b) **Serious eye damage/irritation**
 - Causes serious eye damage.
- c) **Respiratory or skin sensitization**
 - No data available.
- d) **Germ cell Mutagenicity**
 - No data available.
- e) **Carcinogenicity**
 - Not listed by NTP, IARC and OSHA.
 - Not present on the EU CMR list.
 - 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.
- f) **Reproductive toxicity**
 - According to the information presently available N-Methylpiperidine has not been tested for its ability to affect reproduction.
- g) **STOT-single exposure**
 - No data available.
- h) **STOT- repeated exposure**
 - No data available.
- i) **Aspiration Hazards**
 - No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

12.1.1 Ecotoxicity:

- Short term Toxicity: 96 -h LC₅₀ (*Danio rerio*)- 46.4 to 100 mg/l
- Short term Toxicity to aquatic invertebrates: 48 -EC50 (*Daphnia magna*)- >100 mg/l
- Long-term toxicity to aquatic invertebrates: 21-d NOEC: 2.2 mg/l

12.2. Persistence and degradability

- The substance is not readily biodegradable (according to OECD criteria), but biodegradable (The degree of biodegradation was 97% after 21 days).

12.3. Bioaccumulative potential

- BCF = 2
- Log Kow = 1.15

In accordance with column 2 of Annex IX, the study does not need to be conducted if the substance has a low potential for bioaccumulation (for instance a log Kow ≤ 3). The measured log Kow is <<3 and indicates no potential for bioaccumulation. In addition, measured and calculated BCF values are < 10

12.4. Mobility in soil (Estimated)

- Log Koc= 2.4. Low sorption.
- Henry's Law Constant = 3.46 X 10⁻⁰⁵ atm/m³ mole at 25 degrees. It is volatile from aqueous bodies.
- Log Kow=1.15 (estimated). Low potential to bioaccumulate.

12.6. Other adverse effects.

- **Environment Fate:**
Based on the environmental modeling, this material has a low potential to get absorbed in the organic matter of soil and is not volatile from water 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 after burner and scrubber exert extra care in igniting as this material is highly flammable.
- 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 Hazardous for transport by Air/Rail/Road and Sea and thus regulated by IATA/ ICAO/ US DOT/ TDG/ IMO/ IMDG.

N-Methylpiperidine

Safety Data Sheet

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S.No	Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
Land Transport	US DOT	UN 2399	1-METHYLPIPERIDINE	3(8)	II
Maritime Transport	IMDG	UN 2399	1-METHYLPIPERIDINE	3(8)	II
Air Transport	IATA	UN 2399	1-METHYLPIPERIDINE	3(8)	II
Hazard Label		Flammable, Corrosive	 		

Environmental hazards:

- Marine pollutant: No

SECTION 15: REGULATORY INFORMATION

Classification as per CLP Regulation 1272/2008:

- **Hazards Class and Category:** Flammable Liquids: Category 2, Acute Toxicity oral: Category 4, Acute Toxicity Dermal: Category 4
Acute Toxicity Inhalation: Category 3, Skin corrosion / irritant: Category 1B, Serious eye damage/eye irritation: Category 1, Hazardous to the aquatic environment (long-term): Category 3
- **Hazard Statements:** H225, H302, H312, H331, H314, H412

<u>Chemical Inventory Lists:</u>	<u>Status</u>
<u>TSCA:</u>	<u>Listed (Active)</u>
<u>EC Inventory</u>	<u>Listed</u>
<u>Canada(DSL/NDSL):</u>	<u>Listed (NDSL)</u>
<u>Japan:</u>	<u>Listed</u>
<u>Korea:</u>	<u>Not Listed</u>
<u>Australia:</u>	<u>Listed</u>
<u>China: IECSC</u>	<u>Listed</u>
<u>Philippines</u>	<u>Listed</u>

US information

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

N-Methylpiperidine is not listed

SARA 302/304 : N-Methylpiperidine is not listed



N-Methylpiperidine

Safety Data Sheet

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

SARA 311/312 : See section 2 for more information

California Prop. 65: N-Methylpiperidine is not listed

CAA (Clean Air Act): N-Methylpiperidine is not listed

CWA (Clean Water Act): N-Methylpiperidine is not listed

EU Information

Water hazard class (WGK): WGK 2 (obviously hazardous to water)

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: N-Methylpiperidine is not listed

SECTION 16: OTHER INFORMATION

Compilation information of safety data sheet

Date of Compilation : December 01, 2008
Chemical : N-Methylpiperidine
CAS # : 626-67-5
File Name : 0519Gj Ghs04 Div.3 sds N-Methylpiperidine
Revision Number : 04
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Supersedes date : January 02, 2024

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.
- NTP=National Toxicology Program.
- IARC= International Agency for Research on Cancer.
- NFPA= National Fire Protection Association.
- 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.
- 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.

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

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)