

1: Identification of substance / mixture

1. Product Identifier

Substance

Product Name **(S)-3-(1-Methylpyrrolidin-2-yl)pyridine**
Product Code 241305
CAS Number 54-11-5
Other Names Nicotine
IUPAC
MFCD Number MFCD00006369
EC/EINECS 200-193-3
REACH Number 01-2120066934-47-xxxx Index-No 614-001-00-4

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

Research and Development

3. Details of the supplier of the safety data sheet

Fluorochem Ltd
Unit 14, Graphite Way
Hadfield
Derbyshire
SK13 1QH
UK

Telephone: +44(0)1457 860111
Fax: +44(0)1457 892799
Email: sds@fluorochem.co.uk



4. Emergency telephone number

+44(0)7855 268577 -

2. Hazards Identification

1. Classification of the substance or mixture

H300 + H310 + H330	Acute Tox. 2	
H411	Aquatic Chronic 2	

2. Label elements

Signal Word **Danger**



Hazard Statements

H300 + H310 + H330	Fatal if swallowed , in contact with skin or if inhaled
H411	Toxic to aquatic life with long lasting effects.

Precautionary Phrases

P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents/container to local regulations

3. Other Hazards

Additional precautionary phrases are located throughout the safety data sheet

3. Composition / Information on Ingredients

1. Substances

Product Name	Hazards	Concentration
(S)-3-(1-Methylpyrrolidin-2-yl)pyridine		

CAS Number: 54-11-5 EC/EINECS: 200-193-3 : 01-2120066934-47-xxxx	H300 + H310 + H330, H411 Acute Tox. 2, Aquatic Chronic 2
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<=100%

4. First Aid Measures

1. Description of first aid measures

Skin Contact Wash immediately with plenty of soap and water.
Transfer to hospital if there are burns or symptoms of poisoning.

Eye Contact Rinse opened eye for several minutes under running water.
Transfer to hospital for specialist examination.

Ingestion Wash out mouth with water.

Inhalation Remove casualty from exposure ensuring one's own safety whilst doing so.
Transfer to hospital as soon as possible.

2. Most important symptoms and effects

There may be irritation and redness.

3. Indication of any immediate medical attention

No additional measures required

5. Firefighting measures

1. Extinguishing Media

Suitable Carbon dioxide.
Alcohol or polymer foam.
Dry chemical powder.

Unsuitable no data

2. Special Hazards arising from the substance or mixture

In combustion toxic fumes may form.

3. Advice for Fire Fighters

Wear self-contained breathing apparatus.
Wear protective clothing to prevent contact with skin and eyes.

6. Accidental Release Measures

1. Personal Precautions

Evacuate the area immediately.
Do not attempt to take action without suitable protective clothing – see section 8 of SDS.

2. Environmental Precautions

Do not discharge into drains or rivers.
Contain the spillage using bunding.

3. Methods & Materials

P391: Collect spillage.
Mix with sand or vermiculite.
Transfer to a closable, labelled salvage container for disposal by an appropriate method.

4. Preventing the occurrence of secondary hazards.

No Special Measures Required

7. Handling and Storage

1. Personal Precautions

<i>Safe Handling</i>	Ensure there is sufficient ventilation of the area. P273: Avoid release to the environment.
<i>Protection against explosions and fires</i>	Keep ignition sources away- do not smoke (smoking kills)

2. Conditions for safe storage, including any incompatibilities

<i>Managing Storage Risks</i>	Store in cool, well ventilated area. Keep container tightly closed.
<i>Storage Controls</i>	No special requirements
<i>Maintaining Integrity</i>	Store away from oxidising agents
<i>Other advice</i>	no further information available

3. Specific End Uses

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

8. Exposure Controls/Personal Protection

1. Control Parameters

No Data Available

2. Exposure Controls

<i>General protective and hygiene measures</i>	Wash hands during breaks and at the end of handling the material Immediately remove any contaminated clothing
<i>Engineering measures</i>	Ensure there is sufficient ventilation of the area.
<i>Eye / Face Protection</i>	Safety Glasses with side-shields.
<i>Hand protection</i>	Protective gloves.
<i>Respiratory protection</i>	Use breathing protection with high concentrations
<i>Skin protection</i>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practice. Wash and dry hands. Protective clothing.
<i>Other personal protection advice</i>	no data

9. Physical and Chemical Properties

1. Physical and Chemical Properties

Appearance	Clear colourless to reddish yellow liquid
Odour	Characteristic
Odour threshold	No Data Available
PH	10.2 (8.1g/L H2O soln. 20°C)
Melting point / Freezing point	-80°C
Initial boiling point and boiling range	91°C/0.4kPa
Flash point	95°C
Evaporation rate	No Data Available

Flammability(solid, gas)	No Data Available
Upper/lower flammability or explosive limits	Upper: 4% / Lower: 0.7%
Vapour pressure	0.006kPa/20°C
Vapour density	5.6
Relative density	1.02
Solubility(ies):	Ether, Alcohols, Chloroform, Petroleum ether. Misc
Partition coefficient: n-octanol/water	1.2
Auto-ignition temperature	240°C
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive properties	No Data Available
Oxidising properties	No Data Available

2. Other Information

No additional information available

10. Stability and Reactivity

1. Reactivity

Hygroscopic

2. Stability

Stable under normal conditions.

3. Possibility of Hazardous Reactions

no hazardous reactions known

4. Conditions to Avoid

Air sensitive.

5. Incompatible Materials

Oxidising agents.
Strong acids.

6. Hazardous Decomposition Products

In combustion emits toxic fumes.
In combustion emits toxic fumes of carbon dioxide / carbon monoxide.
In combustion emits toxic fumes of nitrogen oxides.

11. Toxicology information

1. Information

<i>Acute Toxicity</i>	<p>orl-rat LD50:50 mg/kg skn-rbt LD50:50 mg/kg ipr-rat LD50:14560 ug/kg scu-rat LD50:23.5 mg/kg</p>
<i>Skin corrosion/irritation</i>	irritant for skin and mucous membranes
<i>Serious eye Damage/irritation</i>	irritant effect
<i>Respiratory or skin sensitisation</i>	No sensitizing effect known
<i>Germ Cell mutagenicity</i>	<p>mmo-smc 100 ppm (-S9) dlt-mus-ipr 10 mg/kg/2D-I cyt-hmn-mmr 200 umol/L/24H dna-mus-ipr 18.2 ug/kg</p>
<i>Carcinogenicity</i>	not known
<i>Reproductive toxicity</i>	<p>orl-wmn TDLo:40 ug/kg(24W preg) orl-mus TDLo:642 mg/kg(21D pre/1-21D preg) orl-rat TDLo:22 mg/kg(20D post) ipr-rat TDLo:42500 ug/kg(6-22D preg)</p>
<i>STOT-single exposure</i>	

not known

STOT-repeated exposure not known

Aspiration hazard not known

2. Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

12. Ecological Information

1. Toxicity

not known

2. Persistence and degradability

not known

3. Bio-Accumulative Potential

5

4. Mobility and Soil

Log Pow: 1.2

Soil adsorption (Koc): 100

Henry's Law constant(PaM³/mol): 3.0 x 10⁻⁴

5. Results of PBT & vPvB assessment

not known

6. Other adverse effects

Water hazard class 2 (self assessment); hazardous for water.

Toxic to aquatic life with long lasting effects.

13. Disposal Considerations

1. Waste Treatment Methods

Disposal Operations

Disposal of Packaging Disposal must be made according to official regulations.

14. Transport Information

Air (ICAO)

1. **UN Number:** 1654
2. **Shipping Name:** Nicotine
3. **Transport hazard class(es):** : 6.1 Sub Class :



4. **Packing group:** II
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:**

Road (ADR)

1. **UN Number:** 1654
2. **Shipping Name:** NICOTINE
3. **Transport hazard class(es):** : 6 Sub Class :



- 4. **Packing group: II**
- 5. **Environmental hazards:**
- 6. **Special Precautions for user:**
- 7. **Transport in bulk:**

Sea (IMDG)

- 1. **UN Number: 1654**
- 2. **Shipping Name: Nicotine**
- 3. **Transport hazard class(es) : 6.1** Sub Class :



- 4. **Packing group: II**
- 5. **Environmental hazards:**
- 6. **Special Precautions for user:**
- 7. **Transport in bulk:** IBCINS: IBC02
IBCPPROV: -
UNTANKINS: -
TANKPROV: -

15. Safety, health, environmental and national regulations

1. Safety, health, environmental and national regulations:

product is not subject to any additional regulations or provisions

2. Safety Assessment

No Chemical Safety Assessment

16. Other Information

1. Other Information:

ADR: Accord European sur le transport des marchandises Dangereuses par Route(European Agreement concerning the International Carriage of Dangerous Goods by road)
RID:Reglement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association
ICAO:International Civil Aviation Organization
ICAO-TI: Technical Instructions by the ICAO
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS:Chemical Abstracts Service

2. Associated risk phrases according to European directive 67/548/EEC

3. Disclaimer

The product listed is for research and development purposes only and not for human or animal use. As such, in most cases, the toxicological, ecological and physicochemical properties have not been fully determined and the product should be treated with respect and always handled under suitable conditions by appropriately qualified personnel. The responsible party shall use this datasheet only in conjunction with other sources of information gathered by them, and should make an independent judgement of suitability, to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this material safety data sheet, or in combination with any other product or process, is the responsibility of the user.