

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Nicotine

Print date: 01.07.2015

Product code:

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Nicotine

CAS No: 54-11-5
Index No: 614-001-00-4
EC No: 200-193-3

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

Use of the substance/mixture

professional use.

Uses advised against

not known

1.3. Details of the supplier of the safety data sheet

Company name: Alchem International SA
Street: Stabile Vedeggio 1 Via Industria
Place: CH-6814 Lamone
Telephone: +41 91 604 69 21
Contact person: Robin Ward
e-mail: rward@alcheminternational.com
Responsible Department: Dr.Gans-Eichler e-mail: info@tge-consult.de
Chemieberatung GmbH Tel.: +49 (0)251/924520-60
Raesfeldstr. 22 www.tge-consult.de
D-48149 Münster

1.4. Emergency telephone number:

+41 91 604 69 21 (Mo-Fr 9:00-16:00)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard categories:
Acute toxicity: Acute Tox. 1
Acute toxicity: Acute Tox. 3
Hazardous to the aquatic environment: Aquatic Chronic 2
Hazard Statements:
Fatal in contact with skin.
Toxic if swallowed.
Toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazardous components which must be listed on the label

3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO)

Signal word: Danger

Pictograms:



Hazard statements

H301 Toxic if swallowed.

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H310 Fatal in contact with skin.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.
P280 Wear suitable gloves.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P312 Call a POISON CENTER/doctor if you feel unwell.
P501 Dispose of waste according to applicable legislation.

2.3. Other hazards

This substance does not meet the criteria for classification as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
54-11-5	3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO)			>99,9 %
	200-193-3	614-001-00-4		
	Acute Tox. 1, Acute Tox. 3, Aquatic Chronic 2; H310 H301 H411			

Full text of H and EUH phrases: see section 16.

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider.
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of breathing difficulties administer oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. Call a physician immediately.

After contact with skin

Wash with plenty of water.
In case of skin contact, wash immediately with 3%-acetic acid and plenty of water. Immediately remove any wetted clothing, shoes or stockings. Call a physician immediately.

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Induce vomiting when the affected person is not unconscious. Never give anything by mouth to an unconscious person or a person with cramps.

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

Dizziness. excitation. spasms. vomiting. Heart circulatory collapse. Headache. unconsciousness.

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

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Suitable extinguishing media: Foam. Extinguishing powder. Carbon dioxide. Water spray.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire:

Carbon dioxide (CO₂). Carbon monoxide. Nitrogen oxides (NO_x).

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Contaminated fire-fighting water must be collected separately. Do not allow to enter into surface water or drains. Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove persons to safety. Provide adequate ventilation. Use appropriate respiratory protection. Do not breathe gas/fumes/vapour/spray. Wear personal protection equipment.

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Wear personal protection equipment.

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Treat the recovered material as prescribed in the section on waste disposal.

Clear contaminated areas thoroughly.

6.4. Reference to other sections

refer to chapter 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear personal protection equipment. Large-scale skin contact may cause severe poisoning.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

General protection and hygiene measures: refer to chapter 8

Read label before use.

Keep away from heat.

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7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep only in the original container in a cool, well-ventilated place. Keep locked up.

Recommended storage temperature: < 20 °C

Advice on storage compatibility

Do not store together with: Flammable liquids. Flammable solids. Food and fodder Gas. Pyrophoric substances. Substances and mixtures which, in contact with water, emit flammable gases Oxidizing solids Oxidizing liquids. Radioactive substances. Infectious substances.

Further information on storage conditions

Protect against: Light. UV-radiation/sunlight. heat. Cold moisture.

7.3. Specific end use(s)

Industrial manufacturing.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
54-11-5	Nicotine	-	0.5		TWA (8 h)	WEL
		-	1.5		STEL (15 min)	WEL

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective and hygiene measures

Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff.

Wash hands before breaks and after work. Remove contaminated clothing immediately and dispose off safely. Wash contaminated clothing prior to re-use. Used working clothes should not be worn outside the work area. Street clothing should be stored separately from work clothing.

Avoid contact during pregnancy/while nursing.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses. DIN EN 166

Hand protection

Wear suitable gloves.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Suitable material:

Butyl rubber. Thickness of glove material: (0,5 mm)

FKM (fluororubber). Thickness of glove material: (0,4 mm)

Breakthrough time ~480 min.

penetration time (maximum wearing period): ~160 min.

In the case of wanting to use the gloves again, clean them before taking off and air them well.

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Skin protection

Suitable protective clothing: Lab apron.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

aerosol or mist generation.

exceeding exposure limit values

Suitable respiratory protective equipment: Combination filter device (DIN EN 141).. Type: A-(P3)

The filter class must be suitable for the maximum contaminant concentration

(gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

Environmental exposure controls

This material and its container must be disposed of in a safe way.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless
Odour:	characteristic

	Test method
pH-Value:	10,2

Changes in the physical state

Melting point:	-79 °C
Initial boiling point and boiling range:	246 °C
Sublimation point:	No information available.
Softening point:	No information available.
Flash point:	101 °C
Sustaining combustion:	No data available

Explosive properties

No information available.

Lower explosion limits:	0,7 vol. %
Upper explosion limits:	4,0 vol. %
Ignition temperature:	240 °C

Oxidizing properties

No information available.

Vapour pressure: (at 20 °C)	0,056 hPa
Vapour pressure:	No information available.
Density (at 20 °C):	1,01 g/cm ³
Bulk density:	No information available.

Solubility in other solvents

No information available.

Viscosity / dynamic:	No information available.
Viscosity / kinematic:	No information available.
Flow time:	No information available.
Vapour density:	No information available.

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Evaporation rate: No information available.
 Solvent separation test: No information available.
 Solvent content: not determined

9.2. Other information

Solid content: not determined

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

heat. Oxidizing agents.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Can be released in case of fire: Carbon dioxide (CO₂). Carbon monoxide. Nitrogen oxides (NO_x).

Further information

No information available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution

Very toxic in contact with skin. The product is skin resorptive.

Acute toxicity

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
54-11-5	3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO)				
	oral	LD50	70 mg/kg	Rat.	ECHA Dossier
	dermal	LD50	50 mg/kg	Rabbit.	GESTIS

Irritation and corrosivity

3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO):

Irritant effect on the respiratory tract: slightly irritant but not relevant for classification.

Irritant effect on the eye:

Method: OECD Guideline 437 (Bovine Corneal Opacity and Permeability Test Method for Identifying Ocular Corrosives and Severe Irritants)

Species: in vitro

Result: negative.

literature information: ECHA Dossier

Irritant effect on the skin: slightly irritant but not relevant for classification.

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Sensitising effects

3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO):
 Skin sensitisation:
 Method: OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
 Species: Mouse
 Result: negative.
 literature information: ECHA Dossier

STOT-single exposure

No information available.

Severe effects after repeated or prolonged exposure

3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO):
 NOAEL: 1,25 mg/kg (EFSA, 2009)

Carcinogenic/mutagenic/toxic effects for reproduction

In-vitro mutagenicity: Ames test negative. (Salmonella typhimurium)
 [BRAMS,A, BUCHET,JP, CRUTZEN-FAYT,MC, DE MEESTER,C, LAUWERYS,R AND LEONARD,A;
 A COMPARATIVE STUDY, WITH 40 CHEMICALS, OF THE EFFICIENCY OF THE SALMONELLA
 ASSAY AND THE SOS CHROMOTEST (KIT PROCEDURE); TOXICOL. LETT. 38(1-2):123-133,
 1987]

Aspiration hazard

No information available.

Specific effects in experiment on an animal

Evidence for reproductive toxicity in experimental animals.

Additional information on tests

No information available.

Practical experience

Observations relevant to classification

No information available.

Other observations

No information available.

Further information

No information available.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
54-11-5	3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO)					
	Acute fish toxicity	LC50	4 mg/l	96 h		GESTIS
	Acute algae toxicity	ErC50	37 mg/l	72 h	Desmodesmus subspicatus	ECHA Dossier
	Acute crustacea toxicity	EC50	0,242 mg/l	48 h	Daphnia magna	ECHA Dossier

12.2. Persistence and degradability

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
54-11-5	3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO)			
	OECD 301B / ISO 9439 / EEC 92/69 annex V, C.4-C	71%	28	ECHA Dossier
	Easily biodegradable (concerning to the criteria of the OECD)			

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12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
54-11-5	3-(N-methyl-2-pyrrolidiny)pyridine, nicotine (ISO)	1,17

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No information available.

Further information

Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled.

Waste disposal number of waste from residues/unused products

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing dangerous substances
Classified as hazardous waste.

Waste disposal number of used product

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing dangerous substances
Classified as hazardous waste.


Contaminated packaging

Non-contaminated packages may be recycled.

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 1654
14.2. UN proper shipping name:	NICOTINE
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	II
Hazard label:	6.1
	
Classification code:	T1
Limited quantity:	100 mL
Excepted quantity:	E4

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Transport category: 2
 Hazard No: 60
 Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number: UN 1654
14.2. UN proper shipping name: NICOTINE
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1



Classification code: T1
 Special Provisions: 802
 Limited quantity: 100 mL
 Excepted quantity: E4

Marine transport (IMDG)

14.1. UN number: UN 1654
14.2. UN proper shipping name: NICOTINE
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1



Marine pollutant: YES
 Special Provisions: -
 Limited quantity: 100 mL
 Excepted quantity: E4
 EmS: F-A, S-A

Air transport (ICAO)

14.1. UN number: UN 1654
14.2. UN proper shipping name: NICOTINE
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1



Limited quantity Passenger: 1 L
 Passenger LQ: Y641
 Excepted quantity: E4
 IATA-packing instructions - Passenger: 654
 IATA-max. quantity - Passenger: 5 L
 IATA-packing instructions - Cargo: 662
 IATA-max. quantity - Cargo: 60 L

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14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes



Danger releasing substance: 3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO):

14.6. Special precautions for user

refer to chapter 6-8

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not relevant

Other applicable information

No information available.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

2010/75/EU (VOC): 0%

2004/42/EC (VOC): 100 % (1010 g/l)

Additional information

The substance is classified as hazardous according to Regulation (EC) 1272/2008 [GHS].
 -2012/18/CE (SEVESO III) Annex I, Part 1: H1 ; 5/20t
 -REACH 1907/2006 Appendix XVII: 3

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): 3 - highly water contaminating

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information**Changes**

Rev. 1,0; 06.12.2013; Initial release
 Rev. 1,01; 28.01.2014
 Rev. 1,02 05.05.2014
 Rev. 1,10 26.06.2015 ; Changes in chapter: 1-16

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
 CAS Chemical Abstracts Service
 DNEL: Derived No Effect Level
 IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
 International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
 LOAEL: Lowest observed adverse effect level

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LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OSHA: Concerning the International Transport of Dangerous Goods by Rail)
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
SARA: Superfund Amendments and Reauthorization Act
SVHC: substance of very high concern
TRGS Technische Regeln für Gefahrstoffe
TSCA: Toxic Substances Control Act
VOC: Volatile Organic Compounds
VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe
WGK: Wassergefährdungsklasse

Relevant H- and EUH-phrases (Number and full text)

H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.