

Trade name: Nicotine

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS06 GHS09

- Signal word *Danger*
- Hazard statements
H301 Toxic if swallowed.
H310 Fatal in contact with skin.
H411 Toxic to aquatic life with long lasting effects.
- Precautionary statements
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P310 Immediately call a POISON CENTER or doctor/physician.
P361 Remove/Take off immediately all contaminated clothing.
P321 Specific treatment (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.1 Chemical characterization: Substances
- CAS No. Description
54-11-5 nicotine
- Identification number(s)
- EC number: 200-193-3
- Index number: 614-001-00-4
- Additional information:
Chemical Formula: C10H14N2
Molecular weight: 162.2
% concentration: 99.99 %

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- General information: *Seek medical treatment.*
- After inhalation:
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: *Immediately wash with water and soap and rinse thoroughly.*
- After eye contact: *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- After swallowing: *Do not induce vomiting; call for medical help immediately.*
- 4.2 Most important symptoms and effects, both acute and delayed *No further relevant information available.*

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- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
Suitable extinguishing agents:
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:**
Do not use extinguishing media containing oxidizing agents.
- **5.2 Special hazards arising from the substance or mixture** *Emits toxic fumes under fire conditions*
- **5.3 Advice for firefighters**
Protective equipment:
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** *Keep ignition sources away - Do not smoke.*
- **7.2 Conditions for safe storage, including any incompatibilities**
Storage:
Requirements to be met by storerooms and receptacles:
Store in a cool, dry, well-ventilated area away from incompatible substances.
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store protected from light and air.
- **7.3 Specific end use(s)**
Used as an insecticide, acts as stimulant in mammals. Widely used as a therapeutic agent

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

54-11-5 nicotine

JOELV (EU)	0.5 mg/m ³
	Skin

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

Respiratory protection:

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles

Body protection: Protective work clothing

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

- | | |
|------------------|----------------------------|
| Form: | Liquid |
| Colour: | Deep brown yellow |
| Odour: | Slight fish odor when warm |
| Odour threshold: | Not determined. |

pH-value:	10.2
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· Change in condition	
Melting point/Melting range:	-79 °C
Boiling point/Boiling range:	243-248 °C
· Flash point:	101 °C (closed cup)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	244 °C
· Decomposition temperature:	No data available.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	0.7 Vol %
Upper:	4 Vol %
· Oxidizing properties	Not available.
· Vapour pressure at 25 °C:	0.038 mmHg
· Density at 20 °C:	1.0092 g/cm ³
· Relative density	1.032 g/cm ³
· Vapour density	5.61 g/L
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient (n-octanol/water):	1.17 log POW
· Viscosity:	
Dynamic:	Not determined.
· 9.2 Other information	Soluble in alcohol, ether, chloroform Surface Tension: 39.6 dyne/cm Index of refraction : 1.539

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
Stable at room temperature in closed containers.
- **10.3 Possibility of hazardous reactions**
Hygroscopic, as the material absorbs moisture. Reacts violently with strong oxidants.
- **10.4 Conditions to avoid** Avoid contact with air, light
- **10.5 Incompatible materials:** Avoid contact with strong oxidizing agents, strong acids
- **10.6 Hazardous decomposition products:**
Yields carbon monoxide, carbon dioxide, nitrogen oxides on decomposition.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

Oral	LD50	50 mg/kg (rat)
		9.2 mg/kg (dog)
Dermal	LD50	140 mg/kg (rat)
		50 mg/kg (rat)

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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

Danger through skin adsorption.

EFFECTS OF SHORT-TERM EXPOSURE:

The substance irritates the eyes and the skin. The substance may cause effects on the cardiovascular system and central nervous system, resulting in convulsions and respiratory failure. Exposure far above the OEL may result in death.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

Animal tests show that this substance possibly causes toxic effects upon human reproduction. Prolonged exposure can cause convulsions, stomach pains, vomiting, and diarrhea. The effects may be delayed.

SECTION 12: Ecological information

· 12.1 Toxicity

· **Aquatic toxicity:**

LC50 (48hr) 0.24 mg/L (Daphnia magna)

*LC50 (96hr) 4 mg/L (Fish *Onchorhynchus mykiss*(Rainbow trout))*

· 12.2 Persistence and degradability

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise

· 12.3 Bioaccumulative potential

Bioaccumulation Estimates from Log Kow (BCFWIN v2.17):

Log BCF from regression-based method = 0.201 (BCF = 1.588)

log Kow used: 1.17 (expkow database)

· 12.4 Mobility in soil

Soil Adsorption Coefficient (PCKOCWIN v1.66):

Koc : 2376

Log Koc: 3.376

· Ecotoxicological effects:

· **Remark:** Toxic for fish

· **Additional ecological information:**

· **General notes:**

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

· 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· **Recommendation**

Collect leaking liquid in sealable containers. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

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SECTION 14: Transport information

· 14.1 UN-Number · ADR, IMDG, IATA	UN1654
· 14.2 UN proper shipping name · ADR · IMDG, IATA	1654 NICOTINE, ENVIRONMENTALLY HAZARDOUS NICOTINE
· 14.3 Transport hazard class(es) · ADR, IMDG, IATA · Class · Label	6.1 Toxic substances. 6.1
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards: · Marine pollutant:	Environmentally hazardous substance, liquid; Marine Pollutant No
· 14.6 Special precautions for user · Danger code (Kemler): · EMS Number:	Warning: Toxic substances. 60 F-A,S-A
· 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code	 100 ml 2 D/E
· UN "Model Regulation":	UN1654, NICOTINE, ENVIRONMENTALLY HAZARDOUS, 6.1, II

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Labelling according to Regulation (EC) No 1272/2008
- Hazard pictograms Please refer section 2
- Signal word Danger
- Hazard statements Please refer section 2
- Precautionary statements Please refer section 2
- 15.2 Chemical safety assessment:
A Chemical Safety Assessment has not been carried out and shall be available at the time of REACH registration.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing MSDS: Product safety department.
- Contact:

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Mr. Pankaj Patel

Telephone number: 91-2646-651287 / 91-98250-73320

Fax number: 91-2646-227375

e-mail: jbpatel@bgpgroup.biz

Abbreviations and acronyms:

ADR: *Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

IMDG: *International Maritime Code for Dangerous Goods*

IATA: *International Air Transport Association*

GHS: *Globally Harmonized System of Classification and Labelling of Chemicals*

EINECS: *European Inventory of Existing Commercial Chemical Substances*

CAS: *Chemical Abstracts Service (division of the American Chemical Society)*

LC50: *Lethal concentration, 50 percent*

LD50: *Lethal dose, 50 percent*

Sources

• *REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006*

• *MSDS from chemcas.org*

(http://www.chemcas.com/material/cas/archive/54-11-5_v1.asp)

• *MSDS by International Chemical Safety Cards*

<http://actrav.itcilo.org/actrav-english/telearn/osh/ic/54115.htm>)

• *MSDS of Sciencelab.com, Inc., Texas*

(<http://www.sciencelab.com/msds.php?msdId=9926222>)

• *Chemspider database, (<http://www.chemspider.com/RecordView.aspx?rid=81d60e35-8c0e-4295-8688-c78b3331cfd3>)*

• *MSDS of Sigma Aldrich, USA (<http://www.sigmaaldrich.com/catalog/DisplayMSDSContent.do>)*

*** Data compared to the previous version altered.**

• *Section 2 : Hazard Identification – Changes in classification and Labelling*

• *Section 4 : First-aid measures*

• *Section 5 : Fire-fighting measures*

• *Section 6 : Accidental Release Measures*

• *Section 7 : Handling and Storage*

• *Section 8 : Exposure Controls / Personal Protection*

• *Section 9 : Physical and Chemical Properties*

• *Section 10 : Stability and Reactivity*

• *Section 11 : Toxicological Information*

• *Section 12 : Ecological Information*

• *Section 13 : Disposal Considerations*