

SECTION 1: Identification**1.1. Product**

10% Nicotine in Propylene Glycol Solution

Further trade names

This MSDS covers the following products in all container sizes:

· 10% Nicotine in PG

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

For use in the manufacture of e-liquid for electronic cigarettes or other ENDS products.

Uses advised against

Do not use undiluted in electronic cigarettes or other ENDS products.

1.3. Supplier

Avail Valor, LLC. 820 Southlake Blvd. Richmond, Virginia 23236 800-382-8245

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. 4

Acute toxicity: Acute Tox. 3

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Harmful if swallowed.

Toxic in contact with skin.

Harmful 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**

H302

Harmful if swallowed.

H311

Toxic in contact with skin.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
P302+P352	IF ON SKIN: Wash with plenty of water.
P501	Consult the appropriate authorities about waste disposal.

2.3. Other hazards

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****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)			< =10 %
	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**

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 all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin

Remove contaminated clothing immediately and dispose of safely. After contact with skin, wash immediately with: Water and soap. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. If eye irritation persists: Get medical advice/attention.

After ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately.

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

following inhalation: Dizziness.
If skin irritation or rash occurs: Get medical advice/attention.
Following eye contact: eye defects.
after ingestion: vomiting.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.
Water spray.
alcohol resistant foam.
dry extinguishing powder.

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

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.
Move undamaged containers from immediate hazard area if it can be done safely.

Additional information

Use water spray jet to protect personnel and to cool endangered containers.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation.
Wear personal protection equipment. (See section 8.)
Do not breathe gas/fumes/vapor/spray.
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 empty into drains.
Discharge into the environment must be avoided.
Inform competent authorities in case of accidental release. (Larger quantities) Consult the appropriate authorities about waste disposal.

6.3. Methods and material for containment and cleaning up

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

See protective measures under point 7 and 8.

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

When using do not eat, drink or smoke. Keep out of the reach of children.

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Avoid contact with skin, eyes and clothes. Do not breathe gas/fumes/vapour/spray.

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.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep locked up. Keep only in the original container in a cool, well-ventilated place. Protect from moisture.

Recommended storage temperature: at room temperature.

Advice on storage compatibility

Do not store together with: Explosives. Gas. Oxidizing liquids. Oxidizing solids. Self-reactive substances and mixtures. Organic peroxides. Ammonium nitrate. Combustible toxic substances. Non-combustible toxic substances. Radioactive substances. Infectious substances.

Further information on storage conditions

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

7.3. Specific end use(s)

To use in electronic cigarettes.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
56-81-5	Glycerol, mist	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
54-11-5	Nicotine	-	0.5		TWA (8 h)	WEL
		-	1.5		STEL (15 min)	WEL
57-55-6	Propane-1,2-diol, total vapor and particulates	150	474		TWA (8 h)	WEL
		-	-		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.

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.

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:

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.

Do not empty into drains.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid	
Color:	colorless to light amber	
Odor:	characteristic	Test method
pH-Value (at 20 °C):		not determined
Changes in the physical state		
Melting point:		not determined
Initial boiling point and boiling range:		184 (PG) °C
Flash point:	101 (3-(N-methyl-2-pyrrolidinyl)pyrid	
Sustaining combustion:		No data available
Explosive properties		
not explosive.		
Lower explosion limits:	0,7 (3-(N-methyl-2-pyrrolidinyl)pyridine, nicotin	
Upper explosion limits:	4 (3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine	
Ignition temperature:	240 (3-(N-methyl-2-pyrrolidinyl)pyridine, nicot	
Oxidizing properties		
No information available.		
Vapour pressure: (at 20 °C)		0,2 (PG) hPa

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Vapour pressure:
(at 50 °C) 0,00337(VG) hPa

Density (at 20 °C): not determined

Water solubility: miscible.

Solubility in other solvents
not determined

Partition coefficient: not determined

Viscosity / dynamic:
(at 20 °C) not determined

Viscosity / kinematic:
(at 20 °C) not determined

Flow time: not determined

Vapour density: not determined

Evaporation rate: not determined

Solvent content: No information available.

9.2. Other information

Solid content: not determined

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

Protect from moisture. Keep away from heat.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition productsCan be released in case of fire: Carbon dioxide (CO₂). Carbon monoxide. Nitrogen oxides (NO_x).**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

No information available.

Acute toxicity

Harmful if swallowed.

Toxic in contact with skin.

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

Based on available data, the classification criteria are not met.

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.

Sensitizing effects

Based on available data, the classification criteria are not met.

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

Skin sensitization:

Method: OECD Guideline 429 (Skin Sensitization: Local Lymph Node Assay)

Species: Mouse

Result: negative.

literature information: ECHA Dossier

STOT-single exposure

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Based on available data, the classification criteria are not met.

Severe effects after repeated or prolonged exposure

Based on available data, the classification criteria are not met.

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

NOAEL: 1,25 mg/kg (EFSA, 2009)

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

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

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

Based on available data, the classification criteria are not met.

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)			

12.1. Bioaccumulative potential Partition

coefficient n-octanol/water

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

12.2. Mobility in soil

No information available.

12.3. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.4. 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

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
Classified as hazardous waste.

Contaminated packaging

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

SECTION 14: Transport information**Land transport (ADR/RID)**

- 14.1. UN number:** UN 3144
- 14.2. UN proper shipping name:** NICOTINE PREPARATION, LIQUID, N.O.S. (3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO))
- 14.3. Transport hazard class(es):** 6.1

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14.4. Packing group: III
 Hazard label: 6.1



Classification code: T1
 Special Provisions: 43 274
 Limited quantity: 5 L
 Excepted quantity: E1
 Transport category: 2
 Hazard No: 60
 Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number: UN 3144
14.2. UN proper shipping name: NICOTINE PREPARATION, LIQUID, N.O.S. (3-(N-methyl-2-pyrrolidinyl)pyridine, nicotine (ISO))
14.3. Transport hazard class(es): 6.1
14.4. Packing group: III
 Hazard label: 6.1



Classification code: T1
 Special Provisions: 43 274 802
 Limited quantity: 5 L
 Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number: UN 3144
14.2. UN proper shipping name: NICOTINE PREPARATION, LIQUID, N.O.S. (Nicotine)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: III
 Hazard label: 6.1



Marine pollutant: NO
 Special Provisions: 43, 223, 274
 Limited quantity: 5 L
 Excepted quantity: E1
 EmS: F-A, S-A

Air transport (ICAO)

14.1. UN number: UN 3144

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<u>14.2. UN proper shipping name:</u>	NICOTINE PREPARATION, LIQUID, N.O.S. (Nicotine)
<u>14.3. Transport hazard class(es):</u>	6.1
<u>14.4. Packing group:</u>	III
Hazard label:	6.1



Special Provisions:	A3 A4 A6
Limited quantity Passenger:	2 L
Passenger LQ:	Y642
Excepted quantity:	E1
IATA-packing instructions - Passenger:	655
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	663
IATA-max. quantity - Cargo:	220 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

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

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): not determined

2004/42/EC (VOC): not determined

Additional information

This preparation is hazardous in the sense of regulation (EC) No 1272/2008 [GHS].

-2012/18/CE (SEVESO III) Annex I, Part 1: none

-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

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

Rev. 1,0 , 25.03.2014

Rev. 1,1 25.06.2015 ; 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
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.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information is correct to our present-day knowledge. The information is intended to give provide advise for safe handling of the product named in this SDS regarding storage, processing, transport, and disposal. The information cannot be transfer to other products. If the product is mixed with other products or processed, the information contained in this SDS is not necessarily valid for the new make-up material.