



SUBJECT Safety Data Sheet (SDS)

SERVICE LOCATION TÜV SÜD China
TÜV SÜD Products Testing (Shanghai) Co., Ltd.
B-3/4, No.1999 Du Hui Road, Minhang District
Shanghai 201108, P.R. China

CLIENT NAME Shanghai Haiheng Industrial Co., Limited

CLIENT ADDRESS 3/F, Building 6, No.1258, Xinzhu Road, Minhang District, Shanghai, China

The sample information was submitted and identified on applicant's behalf to be:

SAMPLE NAME Synthetic Nicotine

PREPARED PERIOD 17-Nov-2021~23-Nov-2021

SERVICE REQUESTED Prepared according to EU regulation No. 2020/878

Prepared By

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Report Drafter

Authorized By

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Authorized Signatory

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Synthetic Nicotine

*Prepared according to EU regulation No. 2020/878

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

Product identifier

Product Name	Synthetic Nicotine
Product Model	Content above 99.50%
CAS No.	54-11-5
EC No.	200-193-3
Molecular Formula	C ₁₀ H ₁₄ N ₂
REACH Registration Number	-
UFI	Not applicable

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

Relevant identified uses	Used in e-cigarette smoke oil and pharmaceutical intermediates, etc.
Uses advised against	No special instructions.

Details of the supplier of the Safety Data Sheet

Name of the company	Shanghai Haiheng Industrial Co., Limited
Address of the company	3/F,Building 6,No.1258, Xinzhu Road,Minhang District,Shanghai,China
Post code	200030
Telephone number	+86-21-64986432
Fax number	+86-21-58319740
E-mail address	nicotine@haihengpharma.com

Emergency telephone number

Emergency telephone number	+86-18939810493
Opening hours	24h



2 Hazards identification

CLP classification according to Regulation (EC) No. 1272/2008

Acute Toxicity – Oral	Category 2
Acute Toxicity – Dermal	Category 2
Acute Toxicity – Inhalation	Category 2
Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard	Category 2

GHS Label elements

Synthetic Nicotine

Hazard pictograms	 
Signal word	Danger

Hazard statements

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

Precautionary statements

Prevention

P260	Do not breathe gas/mist/vapour/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash face and hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.

Response

P310	Immediately call a POISON CENTER/doctor.
P320	Specific treatment is urgent (see related instructions on this label).
P321	Specific treatment (see related instructions on this label).
P330	Rinse mouth.
P391	Collect spillage.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.

Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Other hazards

Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Synthetic Nicotine	Not PBT/vPvB



Synthetic Nicotine

- ◆ Results of endocrine disrupting properties assessment

Results of endocrine disrupting properties assessment	Insufficient information, temporarily unable to evaluate
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- ◆ Other

	Not applicable.
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3 Composition/information on ingredients

Substance/mixture

	Substance
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Component	Weight % content (or range)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific Conc. Limits, M-factors
Synthetic Nicotine CAS: 54-11-5 EC: 200-193-3 Index No.: 614-001-00-4	100	Acute Toxicity – Oral, Category 2, H300; Acute Toxicity – Dermal, Category 2, H310; Acute Toxicity – Inhalation, Category 2, H330; Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard, Category 2, H411	H3302:ATE = 0.19 mg/L (dusts/mists) H3002:ATE = 5 mg/kg H3102:ATE = 70 mg/kg

4 First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
Ingestion	Give a slurry of activated charcoal in water to drink. Refer for medical attention.
Inhalation	Fresh air, rest. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms/effects, acute and delayed

1	Please see section 11.
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Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Dry chemical, carbon dioxide or alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter or spread fire.

Specific hazards arising from the substance or mixture

1	May emit poisonous fumes on fire.
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Synthetic Nicotine

2	Development of hazardous combustion gases or vapor possible in the event of fire.
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Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
2	Do not touch or walk through spilled material.
3	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
4	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
5	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
6	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	Do not touch or cross spills.
2	Cover with anti-solvent foam to reduce evaporation.
3	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-virus suits.
4	Spray water disperses the vapor and dilutes the liquid spill.
5	Do not touch broken containers and spills before putting on appropriate protective clothing.
6	Cut off the source of the leak as much as possible.
7	Keep leaks in a ventilated place.
8	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
9	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
10	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

7 Handling and storage

Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Keep away from heat/sparks/open flames/ hot surfaces.
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Synthetic Nicotine

- ◆ Measures to prevent aerosol and dust generation

1	Not applicable.
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- ◆ Advice on general occupational hygiene

1	Wash hands and face after using of the substances.
2	Replace the contaminated clothing immediately.

Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

Specific end use(s)

1	In addition to use mentioned in the first parts, unforeseen other specific end uses.
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8 Exposure controls/personal protection

Control parameters

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Synthetic Nicotine	USA - OSHA	-	0.5	-	-
	South Korea	-	0.5	-	-
	Ireland	-	0.5	-	-
	Germany (AGS)	-	0.5	-	1
	Denmark	-	0.5	-	1
	Australia	-	0.5	-	-

- ◆ Biological limit values

Biological limit values	No relevant regulations
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- ◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300.1~GBZ/T 300.160-2017; GBZ/T 300.161~GBZ/T 300.164-2018 Determination of toxic substances in workplace air (Series standard).

- ◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Synthetic Nicotine	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

- ◆ Predicted No Effect Concentration (PNEC)

Predicted No Effect	No information available
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Synthetic Nicotine

Concentration (PNEC)

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Set up emergency exit and necessary risk-elimination area.
4	Handle in accordance with good industrial hygiene and safety practice.

Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear appropriate chemical protective gloves.
Respiratory protection	Must wear appropriate personal dust proof gas mask.
Skin and body protection	Must wear appropriate chemical protective clothing and chemical resistant shoes.

9 Physical and chemical properties and safety characteristics

Physical and chemical properties

Physical state	Liquid
Colour	Colorless to yellowish
Odor	Slightly odor
Odor threshold	No information available
pH	10.2
Melting point/freezing point(°C)	-80
Initial boiling point and boiling range(°C)	243~248
Flash point(Closed cup,°C)	101
Evaporation rate	No information available
Flammability	Not flammable
Upper/lower explosive limits[%(v/v)]	Upper limit: 4; Lower limit: 0.7
Vapor pressure	0.06 hPa (20°C)
Vapor density(Air = 1)	5.61
Relative density(Water=1)	1.01
Solubility	Ethanol: 50mg/mL
n-octanol/water partition coefficient	1.2
Auto-ignition temperature(°C)	240
Decomposition temperature(°C)	247
Viscosity	No information available
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing
Particle characteristics	Not applicable

10 Stability and reactivity

| Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No information available.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	No information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

| Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Synthetic Nicotine	50mg/kg(Rat)	50mg/kg(Rabbit)	No information available

| Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Synthetic Nicotine	Not Listed	Not Listed

| Endocrine disrupting properties

Endocrine disrupting properties	No information available
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| Others

Synthetic Nicotine(Component)	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Reproductive toxicity(additional)	Based on available data, the classification criteria are not met

12 Ecological information

| Acute aquatic toxicity

Component	Fish	Crustaceans	Algae

Synthetic Nicotine

Synthetic Nicotine	LC ₅₀ : 4mg/L (96h)(Fish)	EC ₅₀ : 0.24mg/L (48h)(Crustaceans)	No information available
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Chronic aquatic toxicity

Chronic aquatic toxicity	No information available
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Persistence and degradability

Persistence and degradability	No information available
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Bioaccumulative potential

Bioaccumulative potential	No information available
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Mobility in soil

Mobility in soil	No information available
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Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Synthetic Nicotine	Not PBT/vPvB

Endocrine disrupting properties

Endocrine disrupting properties	No information available
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13 Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	A diamond-shaped hazard label with a dashed border. Inside the diamond is a skull and crossbones symbol, and the number '6' is centered at the bottom.
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IMDG-CODE

UN number	1654
UN proper shipping name	NICOTINE
Transport hazard class	6.1
Transport subsidiary hazard class	None
Packing group	II
Special provisions	-
Limited quantities	100mL
Excepted quantities	E4



Synthetic Nicotine

Marine pollutant (Yes or no)	Yes
EmS No.	F-A,S-A

IATA-DGR

UN number	1654
UN proper shipping name	NICOTINE
Transport hazard class	6.1
Transport subsidiary hazard class	None
Packing group	II
Excepted quantities	E4
Passenger and Cargo Aircraft Limited Quantity Packing Instructions	Y641
Passenger and Cargo Aircraft Limited Quantity Maximum net Quantity per Package	1 L
Passenger and Cargo Aircraft Packing Instructions	654
Passenger and Cargo Aircraft Maximum net Quantity per Package	5 L
Cargo Aircraft Packing Instructions	662
Cargo Aircraft Maximum net Quantity per Package	60 L
Special provisions	-
ERG code	6L

UN-ADR

UN number	1654
UN proper shipping name	NICOTINE
Transport hazard class	6.1
Transport subsidiary hazard class	None
Packing group	II
Special provisions	-
Limited quantities	100 ml
Excepted quantities	E4
Packing instructions	P001 IBC02
Special packing provisions	-
Mixed packing provisions	MP15
Portable tanks and bulk containers instructions	-
Portable tanks and bulk containers special provisions	-
ADR tank code	L4BH
ADR tank special provisions	TU15 TE19



Synthetic Nicotine

Vehicle for tank carriage	AT
Transport category(Tunnel restriction code)	2 (D/E)
Special provisions for carriage(Packages)	-
Special provisions for carriage (Bulk)	-
Special provisions for carriage (Loading, unloading and handling)	CV13 CV28
Special provisions for carriage (Operation)	S9 S19
Hazard identification No.	60
Notes	-

15 Regulatory information

International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIIC	ENCS
Synthetic Nicotine	√	√	√	√	√	√	√	√	√

[EINECS]	European Inventory of Existing Commercial Chemical Substances
[TSCA]	United States Toxic Substances Control Act Inventory
[DSL]	Canadian Domestic Substances List
[IECSC]	China Inventory of Existing Chemical Substances
[NZIoC]	New Zealand Inventory of Chemicals
[PICCS]	Philippines Inventory of Chemicals and Chemical Substances
[KECI]	Korea Existing Chemicals Inventory
[AIIC]	Australia. Inventory of Industrial Chemicals (AIIC)
[ENCS]	Japan Inventory of Existing & New Chemical Substances

European chemical inventory

Component	A	B	C	D	E	F	G
Synthetic Nicotine	x	x	x	√	√	x	x

[A]	Candidate list of Substances of Very High Concern for authorization under EU REACH regulation
[B]	Substances requiring authorisation under EU REACH regulation
[C]	Substances restricted under EU REACH
[D]	Pre-registered substances under EU REACH
[E]	Registered substances under EU REACH
[F]	Substance Evaluation – CoRAP under EU REACH
[G]	List of priority substances under EU water policy (Directive 2455/2001/EC)

Note:

- “√” Indicates that the substance included in the regulations.
- “x” No data or not included in the regulations.

16 Other information

Information on revision

Creation Date	2021/11/22
Revision Date	2021/11/22
Reason for revision	-



Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/substancesearch/index.action>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG	International Maritime Dangerous Goods
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

Note:

1. This test was carried out by external laboratory assessed as competent.
2. This report is for internal use only such as internal scientific research, education, quality control, product R&D.
3. This report replaces report 721668485-2, 721668485-2 is obsolete.