

Material Safety Data Sheet

<Sungsu Biotech Material Safety Data Sheet>

Revision Date: 2019. 11. 04

product name	Sungsu clean hand disinfectant gel (ethanol)
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This MSDS is prepared in accordance with Article 41 of the Korean Industrial Safety and Health Act.

Print Date 20 Feb. 03

1. Information on chemicals and companies

end. Product Name: Seongsu clean hand dog gel (ethanol)

I. Recommended use of the product and restrictions on use

Recommended use:

Sterilization of hands and skin

Restrictions on use: No data available Manufacturer / Supplier / Distributor

Information

Supplier Name: Seongsu Biotech

Address: 1257beon-san, Sannae-ro, Dong-gu, Daejeon

Information service or emergency phone number: 1600-3661

2. Hazards identification

1) Hazard Classification

Flammable Liquids Category 2

Serious eye damage / eye irritation Category 2A

Germ cell mutagenicity Category 1B Reproductive toxicity substance classification 1A

Specific target organ system toxicity-single exposure Category 3 Respiratory tract irritation

Specific target organ system toxicity-repeated exposure

2). Warning signs

pictograms



Signal word: Danger

Hazard statements

H225 Highly flammable liquid or vapor

H319 Causes serious eye irritation.

H335 May cause respiratory irritation

H340 May cause genetic defects

H360 May damage fertility or the unborn child

H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements

- prevention

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, sparks, open flames and hot surfaces.
-No smoking.

P240 Ground / bond container and receiving equipment.

P241 Use explosion-proof electrical, ventilating, lighting · ... equipment.

P242 Use only non-sparking tools

P243 Take precautionary measures against static discharge.

P260 Do not breathe dust, fumes, gas, mist, vapor, ... · spray.

Wash 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.

P280 Wear protective gloves / protective clothing / eye protection / face protection.

P281 Wear suitable personal protective equipment.

- Response

P314 Get medical advice / attention if you feel unwell.

P304 + P340 If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.

P308 + P313 If exposed or touched, get medical advice / attention.

P337 + P313 If eye irritation persists, get medical advice / attention.

P370 + P378 To put out fire in case of fire. Use.

P303 + P361 + P353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P305 + P351 + P338 0 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if possible. Keep washing.

- Save

P405 Store locked up.

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

P403 + P235 Store in a well-ventilated place. Keep cool.

- Disposal

P501 Dispose of contents and container (according to the description in the related regulation).

3) Other hazards not included in the hazard category

NFPA

Ethyl Alcohol: -Health-0, -Fire-3, -Reactivity-0

3. Composition / information on ingredients

Chemical name	Common name	CAS number	Content (g)
ETHYL ALCOHOL	ETHANOL	64- 17- 5	62.0g
Glycerin	Glycerin	56-81-5	Appropriate amount
Propylene glycol	Propylene glycol	57-55-6	Appropriate amount
T o c c o p h e r o l Acetate	T o c c o p h e r o l Acetate	58-95-7	Appropriate amount
Isopropyl myristate	Isopropyl myristate	110-27-0	Appropriate amount
Carbomer	Carbomer	9003-01-4	Appropriate amount
Purified water	Purified water	7732-18-5	35-40
Total			100.0g

4. First Aid Measures

1). When in the eyes:

Lift the eyelids and wash off with plenty of water.

Get medical attention.

2). When in contact with the skin:

Wash off with plenty of soap and water.

Wash contaminated clothing thoroughly before reuse.

Get medical attention.

3). Inhalation:

Do not perform oral breathing.

Get medical attention.

Move to fresh air immediately.

If breathing is difficult, give oxygen.

If not breathing, give artificial respiration.

4). When eaten:

Do not induce vomiting.

Get medical attention.

Do not feed anything if unconscious.

If conscious, provide 2–4 cups of water or milk immediately.

5). Most important symptoms and effects, both acute and delayed

Ethyl alcohol:

Addiction / Exposure

– Ethyl alcohol is toxic for oral, inhalation, transdermal, intravenous, intraarterial, intraperitoneal and skin routes.

Joint intake with sedative sleeping pills or neurostabilizers may increase the toxic effects of ethyl alcohol.

– Acute exposure

– Dosing associated with central nervous system insufficiency may result in death, lethargy, respiratory depression, or death.

– Other effects include high fever, hypoglycemia (especially in infants and children), acidosis, electrolyte anxiety, gastrointestinal upset and bleeding. Ethyl alcohol vapors cause central nervous system depression and eye and upper respiratory tract irritation.

Ethyl alcohol penetrates the placenta and affects the development of abnormalities such as fetal alcohol syndrome or in newborns.

May cause acute poisoning.

- Chronic exposure—examples of chronic symptoms include drug dependence, malnutrition, neurological effects (forgetfulness, dementia, drowsiness, etc.), Myocardial disease of the heart, hepatotoxicity, gastrointestinal bleeding, esophageal arteriovenous node and pancreatitis. Repeated skin exposure can dry out the skin. Exposure to a combination of ethyl alcohol and certain other compounds may have a higher toxic effect.
- People with high physical dependence can cause withdrawal syndrome if they withdraw.

Potential hazards to the body

- Inhalation or contact with substances may cause irritation or burns of the eyes and skin.
- Fires may produce irritating, corrosive or toxic gases.
Vapors may cause dizziness or asphyxiation.
- Fire extinguishing water from fire extinguishing may cause pollution.

6). First Aid and Precautions for Physician: No data available

5. Fire Fighting Measures

1). Suitable (and Inappropriate) Extinguishing Media

- Suitable extinguishing media: Alcohol-resistant foam, water, powder extinguishing agent, carbon dioxide
- Unsuitable extinguishing media: No data available
- In case of large fire: Use alcohol-resistant foam or spray large quantity with fine water spray.

2). Specific hazards arising from the chemical

- pyrolysis products ethyl alcohol: carbon oxides
- Fire and explosion hazard

Ethyl alcohol: Risk of serious fire. Vapor is heavier than air.

May ignite from source and spread rapidly. Vapor / air mixtures are explosive.

3) Special protective equipment and precautions for firefighters

Ethyl alcohol:

Move containers from fire area if you can do it without risk.

- Spray for several hours after cooling to cool container.

- Do not approach both ends of the tank.
 - In the event of a fire at the loading or unloading or storage location, the unmanned hose holder or
 - Cool the container by sprinkling with a monitor nozzle.
 - Keep unnecessary people away, isolate hazard area and deny entry.
 - Leave it to ride.
 - Evacuate immediately if the safety device is activated or discolored due to fire.
 - For tanks, rail cars and tank trucks:
 - Evacuation radius: 0.8 km (1/2 mile) Stop leak first and try to extinguish. Spray in large quantities with a fine spray.
 - Do not scatter spilled material with high-pressure water streams.
 - Spray for several hours after cooling to cool container.
 - Scatter in a protected place or a place with a safe distance.
 - Do not breathe the substance itself or combustion products.
 - Avoid the lowland with the wind.
- Water may be ineffective due to fire extinguishing

6. ACCIDENTAL RELEASE MEASURES

- 1) Measures and protective equipment necessary to protect the human body:
 - Remove all sources of ignition.
 - Sprinkle water to reduce the generation of vapors.
 - Avoid contact with heat, flames, sparks or other sources of ignition.

Stop leak if you can do it without risk.
- 2). Measures necessary to protect the environment
 - Waiting: No data
 - Soil: No data
 - Underwater: No data
- 3) Purification or Removal Method
 - Small spill: No data
 - Large spill: No data

7. Handling and storage

1) Precautions for safe handling:

- Do not pressurize, cut, weld, solder, bond, drill, grind or heat.
- Avoid contact with eyes, skin and clothing.
- Empty containers containing material residue (liquid, vapor) can be dangerous.
- In transporting materials, use grounded containers.
- Use spark-proof tools and explosion-proof equipment.
- Do not ingest or inhale.
- Avoid contact with heat, sparks and flame.
- Wash thoroughly after handling.
- Handle only in well ventilated areas.

2) Safe way of storage:

- Avoid contact with oxidizing materials.
- Store in a cool, dry and well-ventilated place.
- Avoid contact with heat, sparks and flame.
- Avoid contact with ignition sources.
- Grounding, equipotential grounding is required.
- Avoid contact with incompatible materials.
- Store in a sealed container.

8. Exposure Controls and Personal Protection

1) Exposure limits for chemicals, biological exposure limits, etc.

Ingredient	Domestic regulations	ACGHI Regulations	Biological Criteria	Exposure
ethyl alcohol	TWA- 1000ppm1900mg /m ³	TLV- TWA - 1000ppm	no data	

2). Appropriate engineering controls :

- Install local exhaust system and manage to maintain proper control wind speed.
- In the event of a risk of explosion concentrations, provide explosion protection to relevant ventilation equipment.
- Check for compliance with applicable exposure limits.

3) Personal Protective Equipment:

- respiratory protection

Ethyl alcohol:

Respiratory protection should be certified by the Korea Occupational Safety & Health Agency (marked "not"). 3300 ppm air mask.

Respirator (Front Type).

evacuation – Air respirator (for evacuation).

There is an immediate risk to unknown concentrations or other lives or health.

Blower Mask (Combined Airline Mask).

Respirator (Front Type).

- Eye Protection:

Wear a safety face shielded from fugitives and harmful liquids and can be used with safety glasses.

Install face wash and emergency washing equipment (shower) in the immediate work area.

- hand protection:

Wear suitable chemical resistant gloves.

- body protection:

Wear suitable chemical resistant clothing.

9. Physical and chemical properties

characteristic	product
1). Exterior	no data
2). smell	no data
3). smell	no data
4). pH	no data
5). Melting point / freezing point	°C
6). Initial boiling point and boiling range	~ °C
7). Flash Point	°C
8). Evaporation rate	no data
9). Flammability (solid, gaseous)	no data
10). Upper / lower limit of flammable or explosive range	~ vol%
11). Vapor pressure	mmHg
12). Solubility	g/100ml
13). Vapor density	no data
14). specific gravity	no data

15). n-octanol / water partition coefficient	no data
16). Spontaneous combustion temperature	°C
17). Decomposition temperature	°C
18). Viscosity	kg/m· s
19). Molecular Weight	no data

► characteristic

characteristic	ethyl alcohol	Remark
1). Exterior	Physical state: liquid Color: Colorless	
2). smell	Alcohol smell	
3). smell	no data	
4). pH	no data	
5). Melting point / freezing point	- 117°C	
6). Initial boiling point and boiling range	79 °C	
7).Flash Point	13°C (c.c.)	
8). Evaporation rate	1.4 (carbon tetrachloride = 1)	
9). Flammability (solid, gaseous)	no data	
10). Upper / lower limit of flammable or explosive range	3.3 ~ 19vol%	
11). Vapor pressure	5.8kPa (20°C)	
12). Solubility	1E+006 mg/L at 25°C	
13). Vapor density	1.6	
14). specific gravity	0.8	
15). n-octanol / water partition coefficient	- 0.32	
16). Spontaneous combustion temperature	363°C	
17). Decomposition temperature	no data	
18). Viscosity	no data	
19). Molecular Weight	46.1	

10. Stability and Reactivity

1) Chemical stability

Ethyl alcohol: Stable at room temperature and normal pressure.

2) Possibility of hazardous reactions

Ethyl Alcohol: Not polymerized.

3) .Conditions to avoid

Ethyl Alcohol: Avoid contact with heat, flames, sparks and other ignition sources.
Containers may rupture or explode if exposed to heat.

4) .Incompatible materials

Ethyl Alcohol: Halocarbon Compound, Metal, Metal Salt, Oxidizer, Halogen,
Peroxide, Acid, Metal Oxide, Base, Flammable

5) .Hazardous Decomposition Products

Ethyl Alcohol: Forms Carbon Oxide During Pyrolysis

11. Toxicological Information

1) .Information about likely exposure routes

inhalation through respiratory system

Ethyl alcohol : May cause irritation, shortness of breath, headache, drowsiness, dizziness and loss of coordination.

Ingestion through mouth

Ethyl alcohol : Hypothermia or fever, changes in blood pressure, nausea, vomiting, shortness of breath, irregular heartbeat, drowsiness, loss of coordination, vocal intestines

May cause pain, emotional changes, loss of coordination, blindness, pupillary dilation, convulsions, and lethargy.

skin contact

Ethyl alcohol: May cause irritation.

eye contact

Ethyl alcohol: May cause irritation.

2) Delayed, acute and chronic effects from short and long term exposure

○ Acute Toxicity

-Oral: Not classified

(Contents of which classification information could not be confirmed: 100.0%)

Ethyl Alcohol: LD50 6200mg / kg (rat)

-Dermal: No data available (Content of ingredient for which classification information could not be confirmed: 80.0%)

Ethyl Alcohol: No data available

Inhalation:

Mixture calculation for inhalation part does not apply for the time being

Ethyl Alcohol: LC50 20000ppm / 10hours (Rat)

○ Skin corrosion / irritation: Not classified

Ethyl Alcohol: Unclassified / Non-irritating

○ Serious eye damage / eye irritation: Serious eye damage / irritation Category 2A

(Contents from which classification information cannot be identified: 100.0%)

Ethyl Alcohol: Serious eye damage / eye irritation Category 2A / Moderate irritation

○ Respiratory sensitization: No data available (Content of component which cannot be identified as classification information: 80.0%)

Ethyl Alcohol: No data available

○ Skin sensitization: No data available (Content of ingredient which cannot be identified as classification: 80.0%)

Ethyl Alcohol: No data available

○ Carcinogenicity: Not classified (Content of ingredients for which classification information could not be confirmed: 100.0%)

Ethyl Alcohol: ACGIH Group A4

○ Germ cell mutagenicity: Germ cell mutagenicity Category 1B

Ethyl Alcohol: Germ Cell Mutagenic Category 1B

○ Reproductive toxicity: Reproductive toxicity substance classification 1A (Content of components for which classification information cannot be identified: 100.0%)

Ethyl Alcohol: Reproductive Toxicity Category 1A

○ Target Organ Systemic Toxicity (Single Exposure): Specific Target Organ Toxicity (Single Exposure) Category 3 Respiratory tract irritation

Ethyl alcohol: Specific target organ toxicants (single exposure) Category 3 Respiratory tract irritation, Specific target organ toxic substances (

Single exposure) Category 3 Anesthesia

○ Target organ systemic toxicity (Repeated exposure): Specific target organ

toxicant (Repeated exposure) Category 1 (Check classification information.

Unrecognizable content: 100.0%)

Ethyl alcohol: Specific target organ toxicant (Repeated exposure) Category 1 (Soy), Specific target organ toxic material (Repeated furnace)

Ex) division 2 (nerve)

○ Aspiration hazard: No data available (Content of component which cannot be identified as classification: 80.0%)

Ethyl alcohol: No data available Numerical measures of toxicity (eg acute toxicity estimates): No data available

Ethyl Alcohol: Serious eye damage or irritant Category 2A

12. Environmental impact

Not classified, not classified

1) Aquatic terrestrial ecotoxicity

Ethyl Alcohol: Not classified, Not classified

Fish: No data available

Crustacean: LC50 5463.9 mg / L / 48 hours

Algae: no data available

2) .Persistence and Degradability

ethyl alcohol

Persistence: no data available

Degradability: BOD5 / COD = 0.57

3) Bioaccumulative potential

ethyl alcohol

Biodegradability: 45% (5 days, aerobic, other, easily decomposed)

Concentration: BCF: No data available

4) .Soil mobility

Ethyl Alcohol: No data available

5) .Other adverse effects

Ethyl Alcohol: No data available

13. DISPOSAL CONSIDERATIONS

1). Disposal Method:

Dispose of contents container in accordance with all local, regional, national and international regulations.

2) .DISPOSAL CONSIDERATIONS:

If specified in the Wastes Control Act, consider the precautions specified in the regulations.

14. Information necessary for transportation

ethyl alcohol

1). UN Number: 1170

2) UN proper shipping name:

Ethanol or ethanol solution, ETHYL ALCOHOL or ETHYL ALCOHOL SOLUTION

3) Hazard Class in Transportation: 3

4) Container Class: 2

5) .Marine pollutant: Applicable

6) Special safety measures that you need or need to know about transportation or means of transportation

Types of emergency measures in case of fire: F- E

Types of emergency measures in case of spill: S- D

15. Legal Regulations

ethyl alcohol

1) Industrial Safety and Health Law: Not applicable

2) Restrictions under the Toxic Chemicals Control Act: Not Applicable

3) Dangerous Goods Safety Control Act: Quaternary alcohols, 400 liters

4) Waste Management Law: No data available. Other national and foreign laws

Persistent Organic Pollutant Control Act: Not applicable

EU Classification Information

Confirmed classification results:

F; R11

Risk phrases: R11

Precautionary statements: S2, S7, S16

US management information

OSHA Regulation (29CFR1910.119): Not applicable

-CERCLA 103 Regulation (40CFR302.4): Not applicable

-EPCRA 302 Regulation (40CFR355.30): Not applicable

-EPCRA 304 Regulation (40CFR355.40): Not applicable

-EPCRA 313 Regulations (40CFR372.65): Not applicable

Rotterdam Convention Substances: Not applicable

Stockholm Conventional Substances: Not applicable

- Montreal Protocol Substances: Not applicable

16. Other notes

1). Source of material:

Corporate Solution From Thomson Micromedex (<http://csi.micromedex.com>)
ECB– European Chemical Substances Information System (ESIS)
(<http://ecb.jrc.it/esis>) ECOTOX Database, EPA (<http://cfpub.epa.gov/ecotox>)

IUCLID Chemical Data Sheet, EC– ECB
International Chemical Safety Cards (ICSC) (<http://www.nihs.go.jp/ICSC>)
TOXNET, U.S.National Library of Medicine (<http://toxnet.nlm.nih.gov>)
The Chemical Database, The Department of Chemistry at the University of Akron (<http://ull.chemistry.uakron.edu/erd>)
Industrial Addiction Manual, Shinkwang Publishing House
Dangerous Goods Information Management System, Fire and Disaster Prevention Agency (<http://hazmat.nema.go.kr>)
Chemical Information System, National Institute of Environmental Research (<http://ncis.nier.go.kr>)

2) Date of first writing: November 05, 2007

3) Date of last revision: November 4, 2019

4) Number of revisions: 4 times