

SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

STANDARD™ M10 SARS-CoV-2

Document No.: SDS-M-NCOV-03-01

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1. IDENTIFICATION

A. Product name

- STANDARD™ M10 SARS-CoV-2

Reference Number : M-NCOV-03

Catalog Number : 11COV10A

B. Recommended use and restriction on use

- General use : Others

- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

○ Manufacturer information

- Company name : SD Biosensor, Inc.

- Address : 16, Deogyong-daero 1556beon-gil, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea

- Emergency telephone number : +82-31-300-0400

2. HAZARD IDENTIFICATION

A. GHS Classification

- Flammable liquids: Category3

- Acute toxicity (oral) : Category4

- Acute toxicity (dermal) : Category5

- Acute toxicity (inhalation: vapor) : Category5

- Skin corrosion/irritation : Category2

- Specific target organ toxicity(Single exposure) : Category3(Narcotic effects)

- Specific target organ toxicity(Repeated exposure) : Category2

B. GHS label elements

○ Hazard symbols



○ Signal words

- Warning

○ Hazard statements

- H226 Flammable liquid and vapour

- H302 Harmful if swallowed

- H313 May be harmful if contact with skin.

- H315 Causes skin irritation

- H333 May be harmful if inhaled.

- H336 May cause drowsiness and dizziness.

- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)

○ Precautionary statements

1) Prevention

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

- P264 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/hearing protection.

2) Response

- P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P302+P312 IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell.
- P321 Specific treatment
- P330 Rinse mouth.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash before reuse.

3) Storage

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

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification

- Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Ethanol	Alcohol anhydrous ; Alcohol dehydrated ; Ethyl alcohol ; Ethanol solution ; Alcohol ; Fermentation alcohol ; Algrain ; Ethyl hydrate ; Ethyl hydroxide	64-17-5	<35
Guanidine, monohydrochloride	Guanidine, hydrochloride (1:1) ; Guanidinium chloride ; Guanidine chloride ; Guanidinium hydrochloride ;	50-01-1	<10
Guanidine isothiocyanate	Not available	593-84-0	<10
Sodium hydroxide	Caustic soda ; Sodium hydroxide ; Sodium hydrate ; Ascarite	1310-73-2	<1
Ethylenediaminetetraacetic acid	Acetic acid, 2,2',2",2'''-(1,2-ethanediyldinitrilo)tetrakis- ; 3,6-Diazaoctanedioic acid, 3,6-Bis(carboxymethyl)- ; 2-[2-(Bis(carboxymethyl)amino)ethyl-(carboxymethyl)amino]acetic acid ; Ethylenediamine-N,N,N',N'-tetraacetic acid ; N,N'-1,2-Ethanediyldis[N-(carboxymethyl)glycine] ; (Ethylenedinitrilo)tetraacetic acid ; Ethylenebisiminodiacetic acid ;	60-00-4	<1
N-Lauroylsarcosine sodium salt	Not available	137-16-6	<1

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Wash thoroughly after handling.

C. Inhalation contact

- Take specific treatment if needed.
- When exposed to large amounts of steam and mist, move to fresh air.

- Get medical attention immediately.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Avoid use of water jet for extinguishing
- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

B. Specific hazards arising from the chemical

- This material is classified flammable, however it is in small vials and is unlikely to cause significant flammability hazard in use.
- Causes skin irritation
- Harmful if swallowed
- May be harmful if contact with skin.
- May be harmful if inhaled.
- May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.
- Do not approach the tank surrounded by fire until it is extinguished.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

- If large amounts have been spilled, inform the relevant authorities.
- Prevent runoff and contact with waterways, drains or sewers.

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Dike for later disposal.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.

- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- **ACGIH TLV**
 - [Ethanol] : STEL, 1000 ppm (1880 mg/m³)
 - [Sodium hydroxide] : Ceiling 2 mg/m³
- **OSHA PEL**
 - [Ethanol] : 1900
 - [Sodium hydroxide] : 2

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Consider warning properties before use.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- **Eye protection**
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- **Hand protection**
 - Wear appropriate chemical resistant glove.
- **Skin protection**
 - Wear appropriate chemical resistant protective clothing.
- **Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	Not available
B. Odor	Not available
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	0 °C (32 °F)
F. Initial Boiling Point/Boiling Ranges	100 °C (212 °F)
G. Flash point	29 °C (85 °F) - closed cup
H. Evaporation rate	Not available

I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	Not available
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with incompatible materials and condition.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- **Respiratory tracts**
 - Not available
- **Oral**
 - Harmful if swallowed
- **Eye·Skin**
 - Causes skin irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- **Acute toxicity**
 - * **Oral**
 - Product (ATEmix) : 300mg/kg < ATEmix <= 2000mg/kg
 - [Ethanol] : LD50 = 6200 mg/kg Rat (HSDB)
 - [Guanidine, monohydrochloride] : LD50 475 mg/kg Rat
 - [Ethylenediaminetetraacetic acid] : LD50 2580 mg/kg Rat (NITE)
 - [N-Lauroylsarcosine sodium salt] : LD50 > 2000 mg/kg Rat (GLP, Biotex, 2006)
 - * **Dermal**
 - Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
 - [Guanidine, monohydrochloride] : LD50 > 2000 mg/kg Rabbit
 - [Sodium hydroxide] : LD50 1350 mg/kg Rabbit (HSDB)
 - * **Inhalation**
 - Product (ATEmix) : 20.0mg/L < ATEmix <= 50.0mg/L
 - [Ethanol] : LC50 = 59.59 mg/L/4hr Rat (HSDB)
 - [Guanidine, monohydrochloride] : LC50 5.319 mg/ℓ 4 hr Rat
- **Skin corrosion/irritation**
 - Causes skin irritation

- **Serious eye damage/irritation**
 - Not available
- **Respiratory sensitization**
 - Not available
- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * **IARC**
 - [Ethanol] : Group 1
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - [Ethanol] : A3
 - * **NTP**
 - Not available
 - * **EU CLP**
 - Not available
- **Germ cell mutagenicity**
 - Not available
- **Reproductive toxicity**
 - Not available
- **STOT-single exposure**
 - May cause drowsiness and dizziness.
- **STOT-repeated exposure**
 - May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- **Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Ethanol] : LC50 >100 mg/l 96 hr Pimephales promelas (SIDS 2005)
 - [Guanidine, monohydrochloride] : LC50 1758 mg/l 48 hr
 - [Sodium hydroxide] : LC50 125 mg/l 96 hr (Gambusia affinis)
 - [Ethylenediaminetetraacetic acid] : LC50 41 mg/l 96 hr
- **Crustaceans**
 - [Ethanol] : LC50 5012 mg/l 48 hr Ceriodaphnia dubia (other guideline: ASTM E729-80) (ECHA)
 - [Sodium hydroxide] : EC50 40.4 mg/l 48 hr (Ceriodaphnia dubia) (ECHA)
 - [Ethylenediaminetetraacetic acid] : EC50 113 mg/l 48 hr
- **Algae**
 - [Ethanol] : ErC50 275 mg/l 72 hr Chlorella vulgaris (OECD Guideline 201) (ECHA)
 - [Ethylenediaminetetraacetic acid] : ErC50 6 mg/l 72 hr Selenastrum (NITE: MOE Eco-Toxicity Tests of Chemicals, 2002)

B. Persistence and degradability

- **Persistence**
 - [Ethanol] : log Kow -0.32 (ICSC)
 - [Guanidine isothiocyanate] : log Kow -4.04 (Estimate)
 - [Sodium hydroxide] : log Kow -3.88 (SRC)
- **Degradability**
 - [Ethanol] : BOD5/COD = 0.57 (IUCLID)

C. Bioaccumulative potential

- **Bioaccumulative potential**
 - [Ethanol] : BCF 1 (ECHA)
 - [Guanidine isothiocyanate] : BCF 3.162 (Estimate)
 - [Sodium hydroxide] : BCF -3.88 (SRC)

- [Ethylenediaminetetraacetic acid] : BCF 123 (NITE)

○ **Biodegradation**

- [Ethanol] : Biodegradability = 75 (%) 20 day (Aerobic, Other, readily biodegradable) (IUCLID)
- [Ethylenediaminetetraacetic acid] : BOD: 0% (NITE: Existing Chemical Safety Inspections Data)

D. Mobility in soil

- [Guanidine isothiocyanate] : Koc -0.961

E. Other adverse effects

- [Ethanol] : crustaceans(Daphnia magna): NOEC, 9d, = 9.6 mg/L, Algae(Skeletonema costatum): NOEC, 120h, = 3240mg/L (ECHA)

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act

- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

IMDG

UN number: 1170 Class: 3 Packing group: III EMS-No: F-E, S-D Proper shipping name: ETHANOL SOLUTION

IATA

UN number: 1170 Class: 3 Packing group: III Proper shipping name: Ethanol solution

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ **POPs Management Law**

- [Ethanol] : Not applicable
- [Guanidine, monohydrochloride] : Not applicable
- [Guanidine isothiocyanate] : Not applicable
- [Sodium hydroxide] : Not applicable
- [Ethylenediaminetetraacetic acid] : Not applicable
- [N-Lauroylsarcosine sodium salt] : Not applicable

○ **Information of EU Classification**

* **Classification**

- [Ethanol] : H225
- [Guanidine, monohydrochloride] : H302,H315,H319
- [Sodium hydroxide] : H314
- [Ethylenediaminetetraacetic acid] : H319

○ **U.S. Federal regulations**

* **OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable
- * **CERCLA Section 103 (40CFR302.4)**
 - [Sodium hydroxide] : 453.599 kg 1000 lb
 - [Ethylenediaminetetraacetic acid] : 2267.995 kg 5000 lb
- * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
- * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
- * **EPCRA Section 313 (40CFR372.65)**
 - Not applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2022-08-17

C. Revision number and Last date revised

- 1.0, 2022-03-30
- 2.0, 2022-08-17 (Information for Flammable liquid and vapor)

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).