



Prepared date: 1 October 2015
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Safety Data Sheet

【1】 PRODUCT AND COMPANY INFORMATION

Product name Heat-treated Bovine Protein ELISA Kit Ver.2

Manufacturer's name Morinaga BioScience, Inc.
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SDS No. GHS-BH-11

【2】 HAZARDS IDENTIFICATION

kit contains mixtures of hazardous and non-hazardous substances. Below are materials identified as potentially hazardous.

(1) Sodium lauryl sulfate, water

Human health hazard

Serious eye damage · Eye irritation : Category 2B

Specific target organ systemic toxicity (single exposure) : Category 3

Specific target organ systemic toxicity (repeated exposure) : Category 2

Environmental hazard

Hazardous to the aquatic environment (acute hazard) : Category 3

Pictogram or symbol




Signal word : danger



Hazard statement : Causes serious eyes irritation.
May cause respiratory irritation
May cause damage to organs(kidney) through prolonged or repeated exposure.
Harmful to an aquatic life.

Cautions

Safety measures : Wear appropriate protective gloves, glasses, clothing, face shield, or mask.
: Wash protective equipment thoroughly after use.

First-aid measures : If in eyes: Rinse cautiously with water for several minutes.
Get medical treatment
: If on skins: Remove contaminated clothing and the substance.
Rinse cautiously with water. Immediately get medical treatment.

(2) Sodium sulfite, water	
Human health hazard	
Serious eye damage · Eye irritation	: Category 2B
Pictogram or symbol	
Signal word	: Warning
Hazard statement	: Causes serious eyes irritation.
Cautions	
First-aid measures	: If in eyes: Rinse cautiously with water for several minutes. Get medical treatment Wash hands thoroughly after handling.

(3) Sulfuric acid	
Human health hazard	
Skin corrosion · Irritation	: Category 1A
Serious eye damage · Eye irritation	: Category 1
Specific target organ systemic toxicity (single exposure)	: Category 1
Specific target organ systemic toxicity (repeated exposure)	: Category 1
Pictogram or symbol	 
Signal word	: Danger
Hazard statement	: Causes severe skin burns and eye damage. : Causes serious eye damage. : Causes damage to organs (respiratory organs) : Cause damage to organs (respiratory organs) through prolonged or repeated exposure.
Cautions	
Safety measures	: Do not breathe dust, mist, and vapor. : Do not eat, drink, or smoke when using this product. : Wear appropriate protective gloves, glasses, clothing, face shield, or mask. : Wash protective equipment thoroughly after use.
First-aid measures	: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. : If swallowed: Rinse mouth, do not induce vomiting. Immediately get medical treatment. If in eyes: Rinse cautiously with water for several minutes. Get medical treatment : If on skins: Remove contaminated clothing and the substance. Rinse cautiously with water. Immediately get medical treatment. : Wash hands thoroughly after use.

【3】 COMPOSITION/INFORMATION ON INGREDIENTS

(1) Sodium lauryl sulfate, water	
Substance/Mixture	: Substance
Chemical name or commercial name	: Sodium n-dodecyl sulfate
Synonyms	: Sodium lauryl sulfate
Ingredients and composition	: Sodium lauryl sulfate, water solution. The content is not disclosed
Formula	: CH ₃ (CH ₂) ₁₀ CH ₂ OSO ₃ Na
CAS-No.	: 151-21-3
TSCA Inventory	: Registered

EINECS 2057881

- (2) Sodium sulfite, water
 Substance/Mixture : Substance
 Chemical name or commercial name : Sodium sulfite, water
 Ingredients and composition : Sodium sulfite, water solution. The content is not disclosed
 Formula : Na₂SO₃
 CAS-No. : 7757-83-7
 TSCA Inventory : Registered
 EINECS : 2318214
- (3) Sulfuric acid
 Substance/Mixture : Substance
 Chemical name or commercial name : Sulfuric acid
 Ingredients and composition : Water solution contains 0.5mol/L sulfuric acid.
 Formula : H₂SO₄
 CAS-No. : 7664-93-9
 TSCA Inventory : Registered
 EINECS : 2316395
 Dangerous and hazardous ingredients : sulfuric acid

【4】 FIRST AID MEASURES

- (1) Sodium lauryl sulfate, water
- (2) Sodium sulfite, water
 Inhalation : Remove the victim to fresh air. Blow nose and gargle
 Skin contact : Wash the affected areas under running water.
 Eye contact : Wash the affected areas under running water.
 Ingestion : Give the victim one or two glasses of water or saline and induce vomiting. Get medical treatment.
- (3) Sulfuric acid
 Inhalation : Remove the victim to fresh air, and keep him warm.
 Skin contact : Wash the affected areas under running water.
 Eye contact : Wash the affected areas under running water.
 Ingestion : Give the victim one or two glasses of water or milk with egg white. Do not induce vomiting. Get medical treatment.
 Anticipated acute and delayed symptoms. : If inhaled sulfuric acid mist, cause throat ache, cough, and shortness of breath.
 : If contacted skin, cause redness, ache, blister, and burn.

【5】 FIRE-FIGHTING MEASURES

- Extinguishing media : This product is noncombustible.
 Prohibited extinguishing media : None
 Particular fire fighting : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
 Protection for firefighters : Firefighters should wear protective equipment.

【6】 ACCIDENTAL RELEASE MEASURES

- (1) Sodium lauryl sulfate, water
- (2) Sodium sulfite, water
 Cautions for personnel : Wear proper equipment and avoid contact with skin and inhalation of vapor.
 Cautions for environmental : Attention should be given not to cause damage to the environment by flowing of spillage to rivers.
 : In case of the dilution of copious water, do not cause damage to the environment by untreated wastewater.
 Removal measures : Absorb spill with paper or cloth.
 : Wash thoroughly with water

- (3) Sulfuric acid
- | | |
|-------------------------------|---|
| Cautions for personnel | : Wear proper equipment and avoid contact with skin and inhalation of vapor. |
| Cautions for environmental | : Attention should be given not to cause damage to the environment by flowing of spillage to rivers. |
| | : In case of the dilution of copious water, do not cause damage to the environment by untreated wastewater. |
| Removal measures | : Absorb spill with paper or cloth. |
| | : Wash thoroughly with water |
| Prevention of second accident | : Do not contact with organic substances or combustible substances. |

【7】 HANDLING AND STORAGE

- Handling
- | | |
|------------------------------|--|
| Engineering measures | : Wear proper protective equipment not to contact with skin or |
| | : Handle not to generate aerosol or vapor. |
| Cautions for safety handling | : Use with an enclosed system or a local exhaust ventilation |
- Storage
- | | |
|-------------------------------------|---|
| Adequate storage condition | : Store in a dark, cool place and tightly closed. |
| Safety adequate container materials | : Glass, polyethylene, polypropylene |

【8】 EXPOSURE CONTROL/PERSONAL PROTECTION

- (1) Sodium lauryl sulfate, water
- (2) Sodium sulfite, water
- | | |
|----------------------------------|---|
| Engineering measures | : Use only with adequate ventilation and in closed systems. |
| Control parameters | |
| ACGIH(2009) | : Not applicable |
| Protective equipment | |
| Respiration protective equipment | : Not necessary |
| Hands protective equipment | : Impervious protective gloves |
| Eyes protective equipment | : Safety goggles |
- (3) Sulfuric acid
- | | |
|----------------------------------|---|
| Engineering measures | : Use only with adequate ventilation and in closed systems. |
| Control parameters | |
| ACGIH(2009) | : 0.2mg/m ³ (TLV-TWA) |
| Protective equipment | |
| Respiration protective equipment | : If necessary, wear a chemical cartridge respirator with acidic grass. |
| Hands protective equipment | : Impervious protective gloves |
| Eyes protective equipment | : Safety goggles |

【9】 PHYSICAL AND CHEMICAL PROPERTIES

- (1) Sodium lauryl sulfate, water
- | | |
|------------------|-------------------------|
| Appearance | : Liquid |
| Color | : Colorless |
| Odor | : Odorless |
| pH | : 7.0-9.0 |
| Boiling point | : Not Available |
| Melting point | : Not Available |
| Flash point | : Noncombustible |
| Specific gravity | : Approx. 1.0 g/mL |
| Solubility | : Water: Freely soluble |
- (2) Sodium sulfite, water
- | | |
|---------------|-----------------|
| Appearance | : Liquid |
| Color | : Colorless |
| Odor | : Odorless |
| pH | : 9.0-11.0 |
| Boiling point | : Not Available |
| Melting point | : Not Available |

Flash point	: Noncombustible
Specific gravity	: Approx. 1.1 g/mL
Solubility	: Water: Freely soluble

(3) Sulfuric acid	
Appearance	: Liquid
Color	: Colorless
Odor	: Odorless
pH	: Strong acidity
Boiling point	: Approx. 100°C
Melting point	: Approx. -2°C
Flash point	: Noncombustible
vapor density	: 3.4
Specific gravity	: 1.030g/ml (20°C)
Solubility	: Water: Freely soluble

【10】 STABILITY AND REACTIVITY

(1) Sodium lauryl sulfate, water

Stability	: Stable under normal usage
Reactivity	: May react with strong oxidizing substances.
Incompatible conditions	: Light, heat
Incompatible materials	: Oxidizing substances
Hazardous decomposition products	: Toxic fumes of sulfur oxides (Sox), carbon monoxide

(2) Sodium sulfite, water

Stability	: Stable under normal usage
Reactivity	: oxidized gradually in air
Incompatible conditions	: Light, heat
Incompatible materials	: Oxidizing substances
Hazardous decomposition products	: Sulfur oxides

(3) Sulfuric acid

Stability	: Stable under normal usage
Reactivity	: May react with alkaline substances.
Incompatible conditions	: Light, heat
Incompatible material	: Alkaline substances
Hazardous decomposition products	: Sulfur oxides

【11】 TOXICOLOGICAL INFORMATION

(1) Sodium lauryl sulfate, water

Acute toxicity, Oral	: Out of category
Acute toxicity, Dermal	: Out of category
Inhalation (gas)	: Not possible to classify because of insufficient data
Inhalation (dust, mist)	: Not possible to classify because of insufficient data
	: If swallowed, may cause nausea, vomiting, abdominal pain.
	Rat oral LD50=1290mg/kg (as sodium lauryl sulfate)
	Rat intraperitoneal LD50=210mg/kg (as sodium lauryl sulfate)
Skin corrosiveness	: Out of category
Irritation to skin, eyes	: Causes serious eyes irritation.(Category 2B)
	Since cause moderate irritation to the eyes of rabbit, it was classified into category 2B.
Respiratory sensitization or skin sensitization	
Respiratory sensitization	: Not possible to classify because of insufficient data
Skin sensitization	: Not possible to classify because of insufficient data
Mutagenicity	: Out of category
Carcinogenic effects	: Not possible to classify because of insufficient data
Effects on the reproductive system	: Not possible to classify because of insufficient data

Specific target organ systemic toxicity(Single exposure)
 : Causes stimulation to respiratory organs.(Category 3)
 Based on descriptions that respiratory tract irritation is seen by aerosol exposure in mouse, a rabbit, and agonies pig and that respiratory tract irritation is seen by short terms exposure, it was classified into category 3.

Specific target organ systemic toxicity(repeated exposure)
 : May cause damage to organs(kidney) through prolonged ore repeated exposure(category 2)
 It is Witten that there were vacuolar degeneration of kidney tubular epithelial cells, and atrophic of kidney glomerulus. Since these symptoms were found within the scope of the guidance value of Category2, it was classified into category 2(kidney).

Aspiration hazard : Not possible to classify because of insufficient data

(2) Sodium sulfite, water

Acute toxicity, Oral : Out of category

Acute toxicity, Dermal : Not possible to classify because of insufficient data

Inhalation (gas) : Not possible to classify because of insufficient data

Inhalation (dust, mist) : Not possible to classify because of insufficient data
 (as Sodium sulfite)

Rat oral LD50=3560mg/kg

Skin corrosiveness : Out of category

Irritation to skin, eyes : Causes serious eyes irritation.(Category 2B)

Since cause moderate irritation to the eyes of rabbit, it was classified into category 2B.

Respiratory sensitization or skin sensitization

Respiratory sensitization : Not possible to classify because of insufficient data

Skin sensitization : Not possible to classify because of insufficient data

Mutagenicity : Out of category

Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system

: Not possible to classify because of insufficient data

Specific target organ systemic toxicity(Single exposure)

: Not possible to classify because of insufficient data

Sulfite salt is oxidized and is converted to sulfate ion inside bodies, but digestive organs are irritated because of isolated sulfite ion. If human swallowed 4g of the substance, they have poisoning digestive organs. However, it is not possible to classify because of insufficient date

Specific target organ systemic toxicity(repeated exposure)

: Not possible to classify because of insufficient data

Aspiration hazard : Not possible to classify because of insufficient data

(3) Sulfuric acid

Acute toxicity, Oral : Out of category

Acute toxicity, Dermal : Not possible to classify because of insufficient data

Inhalation (vapor) : Not possible to classify because of insufficient data

Inhalation (dust, mist) : Out of category

Rat oral LD50=44580mg/kg (as calculated value)

Rat inhalation LC50=7230ppm/l/4H (as calculated value)

Skin corrosiveness : Causes severe skin burns. (Category1A)

Irritation to skin, eyes : Causes serious eye damage. (Category1)

In case of human accident of sulfuric acid, severe eye damage with lysed anterior chamber of the eyes was recognized. 5% solutions caused mild irritation or rabbit eyes, and 10% solutions caused severe irritation on rabbit eyes.

Respiratory sensitization or skin sensitization

Respiratory sensitization : Not possible to classify because of insufficient data

Skin sensitization : Out of category

Sulfuric acid has no human skin sensitization.

Mutagenicity : Not possible to classify because of insufficient data

Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system

- : Out of category
Inhalation studies of sulfuric acid of rabbits and mice during the period of embryo organogenesis, the dose that does not recognized toxicity on dams appears no embryo toxicity and tetraagenicity on both species. As the main toxicity is direct irritation and corrosion on the local tissue, there is no concern of reproductive toxicity.

Specific target organ systemic toxicity(Single exposure)

- : Cause damage to organs (respiratory organs) (category 1)
In inhalation studies of sulfuric acid of human in the low concentration, irritation symptoms of respiratory tract like cough, shortness of breath are recognized. In the high concentration, acute effects like cough, shortness of breath, bloodstained sputum evacuation and continuing effects like decreased function of lungs, emphysema are recognized. In inhalation studies of guinea pig for eight hours, lung bleeding and dysfunction are recognized.

Specific target organ systemic toxicity(repeated exposure)

- : Cause damage to organs (respiratory organs) through prolonged or repeated exposure. (category 1)
In inhalation studies of sulfuric acid of rats for 28 days, at the guidance concentration range of category 1, cell growth on pharyngeal mucosa is recognized. In repeated inhalation studies of guinea pig, in the same concentration, respiratory tract and lung disorder are recognized. in inhalation, studies of cynomolgus monkeys for 78 weeks, at the guidance concentration range of category 1, histological alteration like hyperplastic cell on bronchiole, thickened lung wall are recognized.

Aspiration hazard

- : Not possible to classify because of insufficient data

【12】 ECOLOGICAL INFORMATION

(1) Sodium lauryl sulfate, water

Eco toxicity

Fish toxicity

Acute aquatic toxicity : Category3 American Lobster LC50=0.72mg/L/96H

Chronic aquatic toxicity : Not possible to classify because of insufficient data

(2) Sodium sulfite, water

(3) Sulfuric acid

Eco toxicity

Fish toxicity

Acute aquatic toxicity : Not possible to classify because of insufficient data

Chronic aquatic toxicity : Not possible to classify because of insufficient data

【13】 DISPOSAL CONSIDERATIONS

(1) Sodium lauryl sulfate, water

(2) Sodium sulfite, water

Residual disposal

- : Dilute with copious water and adjust the pH of the solution. After that, flush in drains.

Containers

- : Or entrust approved waste disposal companies with the disposal
- : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

(3) Sulfuric acid

Residual disposal

- : Add the chemical gradually in alkaline water solution like calcium hydroxide, sodium carbonate to neutralized and flush in a drain with a large amount of water.

Containers

- : Or entrust approved waste disposal companies with the disposal
- : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

【14】 TRANSPORT INFORMATION

UN class : Not applicable
UN-Number: : Not applicable

【15】 REGULATORY INFORMATION

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

【16】 OTHER INFORMATION

References : Encyclopedia Chemical, Kyoritsu Shuppan Co., Ltd.

The information contained herein is based on several references and the present state of our knowledge. However, the MSDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information , and it does not represent a guarantee the properties of the product