SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name **Collagen Binding Assay ELISA Kit**

Other Names N/A
Product Codes CBAE-1
Product Use For Investigational Use Laboratory Reagent
Date of Issue August 2015
Manufacturer DSRV, Inc
330 Waterloo Valley Rd. Suite 200
Mt. Olive, NJ 07828, USA

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SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Component	Description	Volume/Configuration	Hazard Information
Microplate	Collagen Coated 96 well ELISA plate in strip format	16 wells x 6 strips	No Hazards
Normal Standard	von Willebrand Factor (vWF) antigen from human plasma	2 vials, lyophilized	No Hazards (*)
Cryoprecipitate	Control containing cryoprecipitate from human plasma	2 vials, lyophilized	No Hazards (*)
Cryosupernatant	Control containing cryosupernatant from human plasma	2 vials, lyophilized	No Hazards (*)
Conjugate	Anti-vWF, HRP-conjugated antibody	1 vial, lyophilized	No Hazards
Wash Solution	40x ELISA wash buffer	2 vials, 11 mL each	See below (Merthiolate)(**)
Stop Solution	Stopping Solution	1 vial, 11 mL	See below (Sulfuric Acid)
Substrate	TMB solution	1 vial, 11 mL	No Hazards

SECTION 3 HAZARDS IDENTIFICATION

Component	CAS Number	Molecular Weight	Chemical Formula
Sulfuric Acid	7664-93-9	98.08	H_2SO_4
Merthiolate	54-64-8	404.81	$2\text{-}(C_2H_5HgS)C_6H_4CO_2Na$

** Sodium azide (0.01% ~ 0.02%) is included as preservative. Although it is not considered hazardous at this level, please note that accumulated sodium azide may react with lead or copper plumbing to form highly explosive metal azides. Thorough flushing of plumbing is recommended.*
*** Merthiolate is included as anti-bacterial agent at very low concentration.*

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EMERGENCY OVERVIEW

Ingredients	Sulfuric Acid	
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)	Causes severe skin burns and eye damage, H314 May cause cancer, H350	
Pictogram:		
Signal word	Danger	
Hazard statement(s):	H314	Causes severe skin burns and eye damage.
	H350	May cause cancer
Precautionary statement(s):	P201	Obtain special instructions before use
	P281	Use personal protective equipment as required
	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a POISON CENTER or doctor/physician.

Ingredients	Merthiolate (Thiomersal)	
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)	Not hazardous	
Pictogram:	No hazard symbol	
Signal word	Warning	
Hazard statement(s):	H313	May be harmful in contact with skin.
	H333	May be harmful if inhaled.
Precautionary statement(s):	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P302+P352	IF ON SKIN: Wash with plenty of soap and water.

SECTION 4 FIRST AID MEASURES

General advice	Move out of dangerous area. Consult a physician.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5 FIRE FIGHTING MEASURES

Condition of flammability	Not flammable or combustible.
Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Fire & Explosion Hazards	There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Fire Fighting Equipment	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up	Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Avoid inhalation of vapor or mist.
Conditions for safe storage	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits
Not applicable

Engineering Controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal Protection

Respiratory protection

- Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

- Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

- Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

- Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Property	**Sulfuric acid**	**Merthiolate**
Physical State	Liquid	Powder
Colour	Clear, colorless	Beige
Odour	Acrid	No data available
pH	1.2 at 5 g/l	6.7 - 8.2 at 10 g/l at 20 °C (68 °F)
Boiling Point	290 °C (554 °F)	No data available
Melting Point	3 °C (37 °F)	234 °C (453 °F) - Decomposes on heating.
Specific Gravity	Not relevant	No data available
Water Solubility	Soluble	No data available

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SECTION 10 STABILITY AND REACTIVITY

Property	Sulfuric acid	Merthiolate
Stability	Stable at normal temperatures and pressure. Avoid heating.	Stable under recommended storage conditions.
Materials to avoid	Bases, Halides, Organic materials, Carbides, fulminates, Nitrates, picrates, Cyanides, Chlorates, alkali halides, Zinc salts, permanganates, e.g. potassium permanganate, Hydrogen peroxide, Azides, Perchlorates., Nitromethane,phosphorous, Reacts violently with:, cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III) oxide, Powdered metals	Strong oxidizing agents, Strong acids, Strong bases
Hazardous Decomposition Products	Product is unlikely to spontaneously decompose. Toxic/noxious gas may be released when H_2SO_4 causes decomposition of other chemicals (e.g. cyanides, sulphides).	Other decomposition products - No data available

SECTION 11 TOXICOLOGICAL INFORMATION

Sulfuric acid:

Acute toxicity: LD50 Oral – rat – 2,140 mg/kg
LC50 Inhalation – rat – 2 h – 510 mg/m^3
Skin corrosion/irritation: Skin – rabbit – extremely corrosive and destructive to tissue
Serious eye damage/eye irritation: Eyes – rabbit – corrosive to eyes
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity: The International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong-inorganic acid mists containing sulfuric acid is carcinogenic to humans (Group 1).
Reproductive toxicity: no data available
Teratogenicity: no data available
Aspiration hazard: no data available
Potential Health Effects
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin: May be harmful if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns. Causes severe eye burns.
Ingestion: May be harmful if swallowed.
Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema. Effects may be delayed.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Synergistic effects: no data available
Additional information: RTECS: WS5600000

Merthiolate (Thiomersal):
Acute toxicity: LD50 Oral - Rat - 75 mg/kg
Inhalation: No data available
Behavioral:Ataxia. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Nutritional and Gross Metabolic: Changes in: Metabolic acidosis.
LD50 Subcutaneous - Rat - 98 mg/kg
Skin corrosion/irritation: No data available
Serious eye damage/eye irritation:
Eyes – Rabbit
Result: Mild eye irritation

Respiratory or skin sensitisation
Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.
Germ cell mutagenicity
Hamster
Lungs
Micronucleus test

Mouse
Micronucleus test
Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
No data available
Specific target organ toxicity - single exposure
No data available
Specific target organ toxicity - repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Liver - Irregularities - Based on Human Evidence

SECTION 12 ECOLOGICAL INFORMATION

The ingredients in this product are not classified as toxic to the environment.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal must be made according to official regulations.

SECTION 14 TRANSPORT INFORMATION

No special transport requirements.

SECTION 15 REGULATORY INFORMATION

OSHA Hazards:
Sulfuric acid: Target organ effect, Corrosive
SARA 302 Components: The following components are subject to reporting levels established by SARA Title III, Section 302:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
SARA 311/312 Hazards:
Sulfuric acid: Acute Health Hazard, Chronic Health Hazard
Merthiolate (Thiomersal): Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components: Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
Pennsylvania Right To Know Components:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01
Merthiolate (Thiomersal): CAS-No. 54-64-8; Revision Date: 2007-07-01
New Jersey Right To Know Components:
Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01

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Merthiolate (Thiomersal): CAS-No. 54-64-8; Revision Date: 2007-07-01

California Prop. 65 Components:

WARNING! This product contains a chemical known to the State of California to cause cancer: Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-09-28

SECTION 16 OTHER INFORMATION

Label Text

Please read all labels and product inserts carefully before using this product.

Acronyms

ADG	Australian Code for the Transport of Dangerous Goods by Road and Rail
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
CAS Number	Chemical Abstracts Service Registry Number
IARC	International Agency for Research on Cancer
NCCLS	National Committee for Clinical Laboratory Standards (www.nccls.org)
NIOHS	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission (Australia)
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (U.S.A.)
RTECS	Registry of Toxic Effects of Chemical Substances
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons (Australia)
UN Number	United Nations Number

Preparation

This MSDS has been prepared according to international guidelines and is suitable for use in Canada, USA, Mexico, Japan, Europe, UK, Australia and other countries.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

MSDS prepared by DSRV.

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