Beacle

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MATERIAL SAFETY DATA SHEET

CHEMICAL IDENTITY Sulfuric acid

1. Product and Company Identification

PRODUCT NAME:	Stop Solution：a component of below products HBs S Antigen Quantitative ELISA Kit, Rapid-II (BCL-SHP-21), HB Pre-S1 Antigen Quantitative ELISA Kit, Rapid (BCL-S1HP-01), HB Pre-S2 Antigen Quantitative ELISA Kit, Rapid (BCL-S2HP-01), Easy ELISA constructor(BCL-EEC-01), Leishmaniasis antibody detection ELISA kit (BCL-LEI-01), Filariasis antibody detection ELISA kit (BCL-FIL-01)
PRODUCT CODE:	BCL-SS2、BCL-SS3、BCL-ESS-01
CHEMICAL IDENTIFICATION:	Sulfuric acid
CONTENT IN THE PRODUCT:	9.80%
RECOMMENDED USE:	HBsAg S, Pre-S1 and Pre-S2 antigen detection by ELISA (for research use only) ELISA construction for detecting antigen-specific antibody (for research use only) Leishmania and Filariasis antibody detection of Urine by ELISA (for research use only)
MANUFACTURER :	Beacle Inc.
SUPPLIER :	Beacle Inc. Address: 14-1 Yoshida-Kawaracho, Sakyo-ku, Kyoto, Japan Tel: +81-75-762-5055 Fax: +81-75-762-3055 Emergency: +81-75-762-5055 technical-support@beacle.com

(THE BELOW DESCRIPTION IS APPLIED FOR THE IDENTIFIED CHEMICAL OF 95%)

2. Hazards Identification

GHS hazard class and category

PHYSICAL HAZARDS	EXPLOSIVES	—
	FLAMMABLE GASES	—
	FLAMMABLE AEROSOLS	—
	OXIDIZING GASES	—
	GASES UNDER PRESSURE	—
	FLAMMABLE LIQUIDS	—
	FLAMMABLE SOLIDS	—
	SELF-REACTIVE SUBSTANCES AND MIXTURES	—
	PYROPHORIC LIQUIDS	—
	PYROPHORIC SOLIDS	—
	SELF-HEATING SUBSTANCES AND MIXTURES	—
	SUBSTANCES AND MIXTURES WHICH, IN	—
	OXIDIZING LIQUIDS	—
	OXIDIZING SOLIDS	—
	ORGANIC PEROXIDES	—
	CORROSIVE TO METALS	—
HEALTH HAZARDS	ACUTE TOXICITY – ORAL	5
	ACUTE TOXICITY – DERMAL	—
	ACUTE TOXICITY – INHALATION (GAS)	—
	ACUTE TOXICITY – INHALATION (VAPOURS)	—
	ACUTE TOXICITY – INHALATION (DUST/MIST)	2
	SKIN CORROSION/IRRITATION	1A-1C
	EYE DAMAGE/IRRITATION	1
	SENSITIZATION – RESPIRATORY	—
	SENSITIZATION – SKIN	—
	GERM CELL MUTAGENICITY	—
	CARCINOGENICITY	—
	TOXIC TO REPRODUCTION	—
	SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY	1(respiratory system)
	SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY	1(respiratory system)
	ASPIRATION TOXICITY	—
ENVIRONMENTAL HAZARD	HAZARDOUS TO THE AQUATIC ENVIRONMENT-	3
	HAZARDOUS TO THE AQUATIC ENVIRONMENT –	—

LABEL ELEMENTS

SYMBOL

SIGNAL WORD Danger

HAZARD STATEMENTS
May be harmful if swallowed
Fatal if inhaled
Causes severe skin burns and eye damage
Causes serious eye damage
Causes damage to organs (respiratory system)
Causes damage to organs through prolonged or repeated exposure (.respiratory system)
Harmful to aquatic life

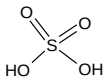
PREVENTTION
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product
Wear respiratory protection.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid contact during pregnancy/while nursing.
Use personal protective equipment as required.
Use only outdoors or in a well-ventilated area.
Wash hands thoroughly after handling
Avoid release to the environment.

Reponse
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy
If eye irritation persists, get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, seek medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
Store locked up.
Store container tightly closed in cool/well-ventilated place

DISPOSAL	Dispose of contents and container in accordance with regulation.

3. Composition/Information on Ingredients

Substance/Preparation	Preparation
Chemical name	Sulfuric Acid
Synonyms	Oil of vitriol, Hydrogen sulfate
Ingredient name	Sulfuric Acid
Composition(%)	9.80%
Chemical formula(MW)	H2SO4(98.08)
Structural Formula	
CAS No.	7664-93-9
Chemical No, Japan	(1)-430

4. First-Aid Measures

General procedures	Move victim to fresh air. Keep victim warm and quiet. Call emergency medical service Apply artificial respiration if victim is not breathing Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect
Inhalation	In case of accident by inhalation: remove casualty to fresh air and keep at rest. If breathing is week, irregular or has stopped, open his airway, loosen his collar and belt and administer
Skin contact	Removal of solidified molten material from skin requires medical assistance. For minor skin contact, avoid spreading material on unaffected skin. Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water. Remove all chemicals from contact with the victimƒs skin as quickly as possible. A delay of only seconds
Eye contact	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove all chemicals from contact with the victim's eyes immediately. A delay of only seconds may
Ingestion	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. If swallowed, rinse mouth with water (only if the person is conscious). Immediately give the person one or two glasses of milk or water, to dilute the chemical, do not attempt to
Precaution for first-aid persons	Protect yourself by wearing rubber gloves and air-tight safety goggles.
Information for the physician	Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed

5. Fire-Fighting Measures

Extinguishing Media	The product is non-flammable. In case of fire, use dry powder CO_2 dry sand.
Incompatible extinguishing media	Never use water. When material is not involved in fire: do not use water on material itself.
Specific Hazards with regard to Fire-Fighting	Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Toxic gases will form upon combustion of : sulfur oxides
Specific fire-fighting measures	This product is noncombustible. When surrounding fire, 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. Dry chemical powder, carbon dioxide or dry sand should be used for small fires.
Protection of fire-fighters	Firefighters should wear proper protective equipment

6. Accidental Release Measures

Measures for Handling Personnel	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Evacuate non essential personnel Wear proper protective equipment.
Measures for environmental effects	Attention should be given not to cause damage to the environment by flowing of spillage to rivers.
Measures when handling spilled substances	Shut off the leakage source to stop the leakage. For small spill, absorb spill with absorbent and move to a
Preventive measures for secondary accident	Keep unauthorized personnel away. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container.

7. Handling and Storage

Handling	
Preventive measures	(Exposure Control for handling personel) Wear proper equipment not to contact with skin or inhale the
Safety treatments	Contact with molten substance may cause severe burns to skin and eyes. Use with an enclosed system or a local exhaust ventilation.
Safety Measures/Incompatibility	Wear proper equipment not to inhale and contact with skin, eyes and clothes. Do not shock, overturn, drop, or drag containers.
Storage	
Incompatible materials	Corrodes many kinds of metals
Recommendation for storage	Keep tightly closed in dark cool place
Incompatible storage condition	Keep away from organic substances. Keep away from combustible materials
Recommendation on container and packaging materials	Glass, Teflon, polyvinyl chloride resin, etc.

8. Exposure Control/Personal Protection

Control value	Not established.
Adopted value :	(Sulfuric acid contained in strong inorganic acid mists)
ACGIH 2005	TLV: 0.2 mg/m3 Thoracic fraction
(Sulfuric acid)	
JCGIH 2005	(ceiling limit) 1 mg/m3 (under study)
NIOSH REL	TWA 1 mg/m3
OSHA PEL	TWA 1 mg/m3
MAK	(Inhalable fraction) 0.1 mg/m3 Peak limitation category: I(1) Carcinogen category: 4 Pregnancy risk group: C

Engineering measures	Keep source tightly closed or install local exhaust ventilation. Provide shower and vanity unit nearby and make clear the location of these.
Personal protective equipment	
Respiratory protection	Wear positive pressure self-contained breathing apparatus (SCBA). Respirator for acidic vapor
Hand protection	Wear impervious glove made from chloroprene, as appropriate
Eye protection	Wear protective eyeglasses or chemical safety goggles.
Skin and body protection	To prevent any contact, wear impervious clothing such as apron, boots, or whole-body suits made from

9. Physical and Chemical Properties

Physical properties	
Appearance	Oily liquid
Color	Colorless
Odor	None
pH	Strong acid
Melting point	−32.0 C (93.10%), −16.5 C (95.05%), +3.0 C (98.00%)
Freezing point	−29.4 C (93.19%), −22.2 C (95.00%), −1.1 C (98.00%)
Boiling point	279 C (93.19%), 297 C (95.00%), 327 C (98.00%)
Flash point	—
Ignition temperature	—
Explosion	—
Vapor pressure	0.13 kPa (146 C)
Relative Vapor Density (Air=1)	3.4
Specific gravity/Density	About 1.84
Solubility	Solubility in water : Miscible
Octanol /water partition coefficient (log	—
Temperature of decomposition	—
Viscosity	—
Other data	Hygroscopic

10. Stability and Reactivity

Stability	This product is considered a stable material under normal and anticipated storage and handling conditions.
Reactivity	Generates heat when contacted with water.
Conditions to avoid	Sunlight, heat, contact with alkaline substances and combustible materials
Hazardous decomposition products	Toxic fumes of Sulfur oxides

11. Toxicological Information

Acute toxicity	
Labor standard law, Japan	Toxic
Emargency response guidebook	TOXIC; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe
Oral, Dermal, Inhalation Toxicities	
Oral	rat LD50 2140 mg/kg
Inhalation	mouse LC50 320 mg/m3/2H rat LC50 510 mg/m3/2H human TCL0 1 mg/m3/3H
Irritant propertie	Risks of serious damage to eyes. Causes severe burns. (1A-1C)
Irritant properties to skin/eye	rabbit 250 ug ; SEVERE (1) 5 mg/30S rinse ; SEVERE
Carcinogenic effects	(Sulfuric acid contained in strong inorganic acid mists) ACGIH-A2 : Suspected human carcinogen. (Strong Inorganic Acid Mists Containing Sulfuric Acid) IARC-Gr.1 : Carcinogenic to humans. (Strong Inorganic Acid Mists Containing Sulfuric Acid) NPT-Gr.a : Known to be Human Carcinogens.
Toxicity for reproduction	—
Allergenic and sensitizing effects	Not available
Chronic toxicity	Prolonged inhalation may cause upper respiratory infection, bronchitis, teeth acid erosion.
Mutagenic effects	Cytogenetic analysis : hamster ovary 4 mmol/l
Teratogenic effects	—
Narcotics and Psychotropics Control Law,	Raw PsychoDrug, >20kg

12. Ecological Information

Biotranspotability	—
Persistence and degradability	—
Bioaccumulative potential	—
Ecotoxicity	Harmful to aquatic organisms(3)
Fish toxicity	LD50/96H : 100-10 mg/l The lethal dose of fish: 6.3 mg/l/24H

13. Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material. Comply with all country, national and local regulations. Do not dump this product into sewers, on the ground or into any body of

14. Transport Information

UN No., UN CLASS	
UNNo.	2796
UN CLASS	8
PG	II
Proper shipping name	SULPHURIC ACID (9.8% solution)

15. Other information