



MATERIAL SAFETY DATA SHEET

1. PRODUCT INFORMATION

Product Name: Human Carcinoembryonic Antigen (CEA)ELISA Kit
Catalog Number: EL10052
Product Use: For Research Use Only. Not for Diagnostic Use.
MSDS Number: MSDS0054
Revision Date: November 21, 2006
Revision Number: 0
Manufacturer: Yes Biotech Laboratories Ltd. (Anogen)
2355 Derry Road East, Unit 23
Mississauga, ON
L5S 1V6
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Emergency Number: CHEMTREC: 1-800-424-9300 (Canada or US)

2. HAZARDOUS INGREDIENTS

SUBSTRATE B

Chemical Name	CAS #	%
Acetone	67-64-1	20 vol/vol

STOP SOLUTION

Chemical Name	CAS #	%
Sulfuric Acid (2N)	7664-93-9	9.8 vol/vol

3. PHYSICAL DATA

Stop Solution (2N Sulphuric Acid)

Physical State: Liquid
Appearance and Odour: Clear, colourless, oily liquid, odourless unless heated
>1.0 mg/m³
Odour Threshold: 1.50-1.84
Specific Gravity: <0.001 mmHg at 20°C (96-100% solution)
Vapour Pressure: 3.4 (air=1) (conc.)
Vapour Density: N/A
Evaporation Rate: 274°C (conc.)
Boiling Point: 10°C (conc.)
Freezing Point: <0.1
pH: N/A
Coefficient of water/oil distribution:



4. FIRE AND EXPLOSION HAZARD

Conditions of Flammability	Acetone (20%) in substrate B is extremely flammable liquid and vapour. Vapour may cause flash fire.
Extinguishing Media	Small fire: Use DRY chemical powder Large Fire: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build up, auto-ignition or explosion.
Flash Point/Method	-18.1°C/Closed Cup
UEL	N/A
LEL	N/A
Auto-ignition Temp.	N/A
Hazardous Combustion Products	Carbon Oxides (CO, CO ₂)
Explosion Data	Extremely flammable in the presence of static discharge.

5. REACTIVITY DATA

Reactivity Data is based on pure forms of the substances

Acetone

Conditions of Instability:	The product is stable
Incompatibilities:	Extremely reactive with oxidizing agents, acids.
Conditions of Reactivity:	N/A
Hazardous Decomposition Products:	Carbon oxides

Sulphuric Acid

Conditions of Instability	Normally stable (Hygroscopic)
Incompatibilities	Most metals, oxidizers, reducers, bases, metal carbonates, cyanides, sulphides, carbides, oxides, metal acetylides, hydrides, halogens, organic or combustible materials, perchlorates, acetonitrile, permangantes, alcohols, picrates
Conditions of Reactivity	Contact with metals produces highly flammable hydrogen gas. Addition of water liberates excessive heat.
Hazardous Decomposition Products	SO _x , H ₂



6. TOXICOLOGICAL PROPERTIES/ HEALTH HAZARD DATA

Acetone

ROUTE OF ENTRY:

- **Skin contact:** Irritant
- **Skin absorption:** N/A
- **Eye contact:** Irritant
- **Inhalation:** Hazardous
- **Ingestion:** Hazardous

LC50: N/A

LD50: 5340 MG/KG (rabbit)

Exposure Limits: N/A

Effects of Acute Exposure: Irritant to the eye. Inflammation of the eye is characterized by redness, watering and itching. Skin inflammation is characterized by itching scaling, reddening or occasionally blistering

Effects of Chronic Exposure: N/A

Irritancy: Draize Test Rabbit:

Eye = 20 mg/24h: Reaction Moderate

Skin=500 mg/24h: Reaction Mild

Sensitization to Product: N/A

Carcinogenicity: This material is not known to cause cancer in animals or humans

Reproductive Toxicity: Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effect on Chemical Substances (RTECS: AL3150000)

Teratogenicity: N/A

Mutagenicity: Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effect on Chemical Substances (RTECS: AL3150000)

Toxicologically Synergistic Products: None found

Sulphuric Acid

ROUTE OF ENTRY:

- **Skin contact:** Causes severe burns
- **Skin absorption:** N/A
- **Eye contact:** Causes severe burns
- **Inhalation:** Causes severe burns
- **Ingestion:** Causes severe burns

LC50: N/A

LD50: N/A

Exposure Limits: TLV: 1mg/m³

Effects of Acute Exposure: This product can cause severe burns upon contact while the vapours or mist are corrosive and can cause severe irritation or damage to the nose, throat and lungs. Ingestion of this product causes pain, nausea and vomiting and may be fatal if large doses are ingested.



Effects of Chronic Exposure:	Repeated skin contact with this product may lead to dermatitis while repeated inhalation may cause bronchitis, conjunctivitis, respiratory infections, emphysema and digestive disturbances. Another symptom of exposure may be erosion and discoloration of the teeth
Irritancy:	Standard Draize Test: eye, rabbit 1380 mg- severe; Rinsed Draize Test: Eye, rabbit 5 mg/30s- severe
Sensitization to Product:	N/A
Carcinogenicity:	N/A
Reproductive Toxicity:	N/A
Teratogenicity:	N/A
Mutagenicity:	N/A
Toxicologically Synergistic Products:	None found

7. FIRST AID MEASURES

Skin: Flush the contact area with lukewarm running water for at least 15 minutes. Remove contaminated clothing, taking care not to spread the chemical. If contamination is extensive, remove clothing under running water. Discard or decontaminate clothing under running water. Discard or decontaminate clothing before use. Unless contact has been slight, seek medical attention. Seek medical attention if irritation persists.

Eye: Flush the contaminated eye(s) for at least 15 minutes with lukewarm running water, holding the eyelids open. Take care not to rinse contaminated water in to the non-affected eye. Always seek medical attention for accidents involving the eyes.

Inhalation: Take proper precautions to ensure your own safety before attempting rescue. Remove source of contamination or move victim to fresh air. If breathing has stopped, trained personnel should begin artificial respiration, or if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Seek medical attention.

Ingestion: Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Rinse mouth thoroughly with water to dilute. Have victim drink 200-400 mL of water to dilute. For **sulphuric acid**, do NOT induce vomiting. For **acetone or EDTA**, induce vomiting if victim is conscious. If breathing has stopped, trained personnel should begin artificial respiration, or if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Seek medical attention.



8. PREVENTIVE MEASURES

Acetone

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work station location.

Personal protective equipment:

- **Gloves**
- **Respiratory Protection**
- **Eye Protection**
- **Clothing:**

Impervious Gloves
Dust respirator.
Safety goggles
Synthetic apron

Storage Requirements:

2-10°C

Handling Procedures and Equipment:

Keep away from heat, sparks and flame. Do not ingest. Do not breathe gas/ fumes/ vapour/ spray. Do not get in eyes, on skin or on clothing.

Leak or Spill Clean-Up:

Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Cover with DRY each, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapours. Prevent entry into sewers, basements or confined areas.

Disposal:

Follow all federal, provincial and local regulations for disposal. Use only licensed disposal and waste hauling companies. Disposal of small amounts of spilled material may be handled as described under "Leak or Spill Clean-up". Large spills must be dealt with separately and handled by qualified disposal companies.

Special Shipping Information:

Follow all TDG regulations

Sulphuric Acid

Engineering Controls:

Engineering control methods to reduce hazardous exposures are preferred. Methods include mechanical ventilation (dilution and local exhaust), process or personnel enclosures, control of process conditions, and process modification. Administrative controls and personal protective separate from other exhaust ventilation systems. Exhaust directly to the outside.

Personal protective equipment:

- **Gloves**
- **Respiratory Protection**
- **Eye Protection**
- **Clothing:**

Nitrile, high grade PVC or neoprene
Fume hood, respirator as appropriate
Chemical safety goggles or face shield
Plastic apron, sleeves and boots as appropriate

Storage Requirements:

2-10°C

Handling Procedures and Equipment:

Keep away from materials that can burn. Avoid generating mist. Follow routine safe handling procedures. When diluting ALWAYS ADD ACID TO WATER. NEVER WATER TO ACID.



Leak or Spill Clean-Up:	Before dealing with spillage take necessary protective measures, inform others to keep at a safe distance and, for flammable materials, shut off all possible sources of ignition. Spread soda ash liberally over the spillage. Transfer to container and arrange removal by disposal company. Wash site of spillage thoroughly with water
Disposal:	Follow all federal, provincial and local regulations for disposal. Use only licensed disposal and waste hauling companies. Disposal of small amounts of spilled material may be handled as described under "Leak or Spill Clean-up". Large spills must be dealt with separately and handled by qualified disposal companies.
Special Shipping Information:	Follow all TDG regulations

9. PREPARATION INFORMATION

Prepared by: Technical Services Department
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Date of Preparation: November 21, 2006

The above information is believed to be correct, does not purport to be all-inclusive, and shall be used only as a guide. Yes Biotech Laboratories Ltd. shall not be liable for any damages resulting from handling or from contact with the above product.