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## MATERIAL SAFETY DATA SHEET

### -----Section 1. Identification-----

PRODUCT NO:	NAME:
54003B	2,4-D Microtiter Plate ELISA
54004B	2,4-D Coated Tube ELISA, 40T
54005B	2,4-D Coated Tube ELISA, 100T

### -----Section 2. Hazardous Ingredients-----

COMPONENT:	CAS#	%WT	EXPOSURE LEVELS
2,4-D 2,4-Dichlorophenoxy acetic acid	94-75-7	<1X10 <sup>-5</sup>	NIOSH 7/86 AG 6825 TXDS: orl-hmn TDL <sub>0</sub> 80 mg/kg orl-man LDL <sub>0</sub> 93 mg/Kg orl-rat LD <sub>50</sub> 370 mg/kg skn-rat LD <sub>50</sub> 1500 mg/kg skn-rbt LD <sub>50</sub> 1400 mg/kg orl-gpg LD <sub>50</sub> 469 mg/kg
Sulfuric acid Oil of Vitriol; Hydrogen Sulfate; Sulphuric Acid	7664-93-9	~1	OSHA/PEL 1 mg/m <sup>3</sup> ACGTH/TLV 1 mg/m <sup>3</sup>
1,2,6-Trihydroxyhexane Hexanetriol-1,2,6, Hexane-1,2,6-Triol	106-69-4	<5	TXDS: orl-rat LD <sub>50</sub> 15500 mg/kg ivn-rat LD <sub>50</sub> 5600 mg/kg skn-rbt LD <sub>50</sub> 20 gm/kg
Tris 2-amino-2-(hydroxymethyl)propane- 1,3-diol; trimethylaminomethane	77-86-1	~3	TXDS: orl-rat LD <sub>50</sub> 5900 mg/kg ivn-mus LD <sub>50</sub> 1210 mg/kg

### -----Section 3. Physical Data-----

BOILING POINT: Not applicable	MELTING POINT: Not applicable
VAPOR PRESSURE (mm Hg): Not applicable	VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (H <sub>2</sub> O=1): Not applicable	EVAPORATION RATE: Not applicable
SOLUBILITY (WATER): Components are soluble	SOLUBILITY (OTHER): No data available
APPEARANCE, ODOR, AND OTHER: Kit containing separate vials of solutions and reagents	

-----Section 4. Fire and Explosion Hazard Data-----

FLASH POINT (METHOD)/FLAMMABLE LIMITS (LEL-UEL):

Negligible fire and explosion hazard when exposed to heat or flame.

EXTINGUISHING MEDIA:

Media suitable to extinguish the supporting or surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:

No information available

UNUSUAL FIRE OR EXPLOSION HAZARDS:

No information available

-----Section 5. Reactivity Data -----

STABILITY:

Stable

INCOMPATIBILITY:

Sulfuric acid will react with water, most common metals, organic materials, strong reducing agents, combustible materials, strong bases, carbonates, sulfides, cyanides, strong oxidizing agents, carbides.

1,2,6-Trihydroxyhexane will react with strong oxidizing agents, acid chlorides, acid anhydrides.

No information available on other reagents.

HAZARDOUS DECOMPOSITION PRODUCTS:

Sulfuric acid can decompose to form oxides of sulfur and hydrogen gas.

1,2,6-Trihydroxyhexane can decompose to form carbon monoxide, carbon dioxide.

No information available on other reagents.

HAZARDOUS POLYMERIZATION:

Will not occur

-----Section 6. Health Hazards -----

ACUTE EFFECTS:

**Ingestion.** Sulfuric acid is corrosive and may cause severe burning pain in the mouth, throat, and abdomen followed by vomiting and diarrhea. Asphyxia may occur from swelling of the throat. Perforation of the esophagus and stomach may occur.

**Skin and eye contact.** Eye exposure to concentrated sulfuric acid solution may cause severe damage, often leading to blindness. Dilute solutions produce more transient effects from which recovery may be complete. Exposure to the mist may cause eye irritation and lacrimation. Skin contact with sulfuric acid may cause severe irritation and pain, burns, and vesiculation.

The toxicological properties of the kit components have not been fully defined.

Contact may cause irritation to eyes, skin, and mucous membranes. May cause irritation if inhaled or ingested. Limit exposure to material. See Section 2 for exposure limits.

FIRST AID INFORMATION:

Remove from exposure. Flush from skin or eyes with large amounts of water. Eye lids may be occasionally lifted, until no evidence of chemical remains. If irritation is evident or if ingested or inhaled, seek prompt medical attention. If sulfuric acid is ingested, do NOT induce vomiting.

-----**Section 7. Spill and Disposal Information**-----

**SPILLS:**

Wear appropriate personal protective equipment and clothing. Contain spill and collect in suitable waste container. Avoid contact of materials with skin or eyes. Use adequate ventilation.

**WASTE DISPOSAL:**

Dispose of material in accordance with applicable local, state and federal regulations.

-----**Section 8. Special Protection Information**-----

**RESPIRATORY PROTECTION:**

A qualified industrial hygienist should evaluate the need for respiratory protection. Use respiratory protection approved by NIOSH and appropriate to hazard.

**VENTILATION:**

Mechanical (general) or local exhaust, as needed to control exposure to dust, vapors or mists.

**PERSONAL PROTECTIVE EQUIPMENT:**

Gloves are recommended.  
Safety glasses.  
Lab coat or other long sleeved garment to limit skin exposure.  
Access to a safety shower and eye-wash.

-----**Section 9. Special Requirements**-----

**PRECAUTIONS:**

Do not inhale, ingest or allow material to contact skin or eyes.

**COMMENTS:**

Store at 2-8°C.  
This product is a mixture that may contain one or more hazardous chemicals. The hazardous ingredients listed are only those as required by 29 CFR 1910.1200.

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