

## MATERIAL SAFETY DATA SHEET

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
 31 LOVETON CIRCLE  
 SPARKS, MD 21152  
 TELEPHONE: 410-472-4340

## 1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0854  
 PRODUCT NAME: Total Hardness Reagent  
 CHEMICAL FAMILY: Alcoholic organic dye and amine solution

## 2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Triethanolamine	102-71-6	77 w/w	Irritant vapor
Isopropyl alcohol	67-63-0	to 100	Flammable
Nonhazardous ingredients	NA	<1	None

## 3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Dark blue      ODOR: Ammonical  
 BOILING PT (F): 500-600      pH: 10.3      SPECIFIC GRAVITY: 1.02  
 VAPOR PRESSURE (mm Hg): ND      VAPOR DENSITY (AIR=1): 2  
 PERCENT VOLATILE BY VOLUME: 99      SOLUBILITY IN WATER: Soluble

## 4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: 66 F      METHOD: Closed cup  
 FLAMMABLE LIMITS: LEL: 2%      UEL: 12%  
 EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray, or alcohol foam  
 SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing. Cool exposed containers with water spray. Knock down vapors with water spray.  
 FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: Vapors flammable. May be ignited by heat, sparks, or flames. May emit toxic fumes of nitrogen oxides and carbon monoxide.  
 NFPA CODE: Health: 1      Flammability: 3      Reactivity: 1      Special: NA  
 CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong acids, strong oxidizers.

## 5. HEALTH HAZARD DATA

INGREDIENT: Triethanolamine	
TOXICITY: LD50(oral-rat): 8680 mg/kg	
PEL: NE	TLV: NE
STEL: NE	
INGREDIENT: Isopropyl alcohol	
TOXICITY: LD50(oral-rat): 5840 mg/kg	
PEL: 980 mg/m <sup>3</sup>	TLV: 980 mg/m <sup>3</sup>
STEL: NE	

**5. HEALTH HAZARD DATA - continued**

ROUTE(S) OF ENTRY: Inhalation X    Ingestion X    Skin X

TARGET ORGAN(S): Eyes, skin, respiratory tract

CARCINOGENICITY: NTP No    IARC No    OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant.

SKIN: Irritant. Contact may cause dermatitis, staining.

INGESTION: Irritant. May cause severe gastrointestinal disturbance.

INHALATION: Irritant. May cause narcosis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory conditions.

**6. PRECAUTIONARY MEASURES**

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

**7. EMERGENCY AND FIRST AID PROCEDURES**

EYE AND SKIN CONTACT: Immediately flush eyes with water for 20 minutes or until chemical is removed. Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water. Call physician. DO NOT INDUCE VOMITING. DO NOT give anything by mouth to a person who is unconscious, rapidly losing consciousness, or convulsing.

INHALATION: Remove to fresh air. Call physician.

**8. SPILL AND DISPOSAL PROCEDURES**

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

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