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**Section I: Product Identification**

CATALOG NUMBER: 900/4090/4092/4093/9110/9610	PRODUCT NAME: Total Cyanide
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**Section II - Hazardous Ingredients/Identity Information**

Chemical Name	CAS Reg. No.	OSHA PEL (TWA)	% Composition*
No hazardous component greater than 1% by weight.			

**Non-Hazardous Ingredients/Identity Information**

Chemical Name	CAS Reg. No.	OSHA PEL (TWA)	% Composition*
Potassium Ferricyanide	13746-66-2	N/A	<0.10%
Sodium Hydroxide	1310-73-2	NA	<0.5%
Water			>97.5%

\* Components are calculated on a weight/weight basis.

**Section III - Physical/Chemical Characteristics of Hazardous Ingredients****Potassium Ferricyanide**

BOILING POINT: N/A	SPECIFIC GRAVITY: (water=1) 1.85		
VAPOR PRESSURE: N/A	SOLUBILITY IN WATER: Complete	APPEARANCE/ODOR: Red fine crystals, orange-brown as 1M in H <sub>2</sub> O.	

**Section IV - Fire and Explosion Hazard Data**

FLASH POINT (Method used): Not available	AUTO IGNITION TEMPERATURE: Not available	FLAMMABLE LIMITS	LEL NA	UEL NA
EXTINGUISHING MEDIA: Non-flammable, use extinguisher media appropriate for surrounding the fire.				
SPECIAL FIRE FIGHTING PROCEDURES: NA				
UNUSUAL FIRE AND EXPLOSION HAZARDS: NA				

**Section V - Reactivity Data**

STABILITY:	Unstable <input type="checkbox"/>	Stable <input checked="" type="checkbox"/>	Conditions to Avoid: Avoid exposure to oxidizers and acids.
INCOMPATIBILITY (Materials to avoid): Oxidizers & Acids, Ammonia, sodium nitrite and any water reactive materials.			
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen Cyanide Gas, Carbon monoxide, Carbon dioxide, Nitrogen oxides.			
HAZARDOUS POLYMERIZATION:	May Occur <input type="checkbox"/>	Will Not Occur <input checked="" type="checkbox"/>	Conditions to Avoid: None Known

**Section VI - Health Hazard Data**

<b>ROUTES OF ENTRY</b>	Inhalation? YES	Skin? YES	Ingestion? YES
HEALTH HAZARDS (Acute and Chronic): ACUTE: Potassium Ferricyanide is highly toxic. Oral mouse lethal dose 50 has been listed as 2970 mg/kg. The concentration of sodium hydroxide in these samples is sufficient to be the primary hazard when working with these standards. Treat as corrosive material.			
COMPONENTS LISTED AS CARCINOGENS OR POTENTIAL CARCINOGENS: NA			
SIGNS AND SYMPTOMS OF EXPOSURE: From NaOH, localized burning of skin, redness. From Potassium Ferricyanide, weakness, lung irritation, burning sensation, coughing, wheezing, laryngitis. Ingestion: Corrosive/Asphyxiant may cause abdominal pain, toxic amounts will cause hypotension and death in 1-15 minutes			
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Individuals with a history of central nervous system, heart and lung diseases.			
EMERGENCY AND FIRST AID PROCEDURES: Seek medical assistance for treatment, observation and support if necessary. Individuals may show symptoms from exposure to a combination of substances. EYE CONTACT: Solutions are corrosive and contact may cause irritation. Flush for 15 minutes with water, get medical attention. SKIN CONTACT: Irritant, solutions corrosive and may cause burns, flush with water and treat as chemical burn. INHALATION: Remove to air, give oxygen if available, and obtain medical assistance. INGESTION: May be harmful if swallowed.			

## Section VII - Precautions for Safe Handling and Use

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Sample spill or breakage, wear protective equipment. Do not touch spilled material. Take up with sand or nonacid material. It is best to add dry bleach to destroy the cyanide and bag for proper disposal. Diluted solutions may be treated with liquid bleach(hood), neutralized to pH of 7 and flushed to sewer if local rules permit.
WASTE DISPOSAL METHOD: Dispose in approved land fill. Materials should be treated with bleach (hypochlorite) and neutralized to a pH of 7 before disposal.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Label as poison and store in sealed container.
OTHER PRECAUTIONS* Keep sample out of sewer and water sources. Avoid any contact with acids. Do not heat or concentrate the sample by evaporation.

## Section VIII - Control Measures

RESPIRATORY PROTECTION (Please specify): Mechanical exhaust is required. Avoid inhalation.	
VENTILATION: Local exhaust	
PROTECTIVE GLOVES: Required, impervious, neoprene or nitrile rubber.	EYE PROTECTION: Goggles, face shield (8" minimum) may be desirable when pipetting sample. Diluted solution is considered to be only slightly hazardous.
OTHER PROTECTIVE EQUIPMENT: Impervious clothing	
EMERGENCY WASH FACILITIES: Maintain eye wash and quick drench showers in work area.	

## Section IX – WHMIS Class : E – Corrosive Material

## Section X – Transportation Information

DOT Hazard Class: None allocated
Shipping by Air: IATA Non-Hazardous for Air Transport Dangerous Goods Regulations - Section 2.7 Dangerous Goods in Excepted Quantities
Shipping by Ground: DOT 49CFR 173.4 Small quantity exceptions.

The information stated in this Material Safety Data Sheet (MSDS) is believed to be correct on the date of publication and must not be considered all conclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. Persons not specifically and properly trained should not handle this chemical or its container. This MSDS is provided without any warranty expressed or implied, including merchantability or fitness for any particular purpose.

This product is furnished for laboratory use ONLY! Our standards may not be used as drugs, cosmetics, agricultural or pesticidal products, food additives or as house hold chemicals.

\* Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Environmental Protection Agency, and others) may have specific regulations concerning the transportation, handling, storage or use of this product which may not be contained herein. The customer or user of this product should be familiar with these regulations.