

OFI TESTING EQUIPMENT, INC.
MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT AND COMPANY IDENTIFICATION	
Chemical Name:	SODIUM CYANIDE SOLUTION, < 35.0%
Trade Name:	CALCIUM TITRATION SOLUTION II
OFI Part No.	205-23,205-25
Chemical Family:	Hydrocyanic acid, sodium salt; Cyanogran
Formula:	NaCN : H ₂ O
Manufacturer:	OFI Testing Equipment, Inc. 1006 West 34 th Street Houston, TX 77018 U.S.A. (713) 880-9885
In Case of Emergency Spills, Leaks, Fire, Exposure or Accident:	In the USA, call INFOTRAC at 1-800-535-5053 day or night Outside the USA, call collect, (352) 323-3500
SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS	
CAS #:	CHEMICAL NAME
143-33-9	Sodium Cyanide 25.0 to 35.0%
SECTION III - HAZARD IDENTIFICATION	
Emergency Overview:	Danger! May be fatal if swallowed, inhaled or absorbed through skin. Contact with acids liberates poisonous gas. Causes burns to skin, eyes, and respiratory tract. Affects blood, cardiovascular system, central nervous system and thyroid.
Inhalation:	Corrosive to the respiratory tract. The substance inhibits cellular respiration and may cause blood, central nervous system, and thyroid changes. May cause headache, weakness, dizziness, labored breathing nausea and vomiting, which can be followed by weak and irregular heart beat, unconsciousness, convulsions, coma and death.
Ingestion:	Highly toxic! Corrosive to the gastrointestinal tract with burning in the mouth and esophagus, and abdominal pain. Larger doses may produce sudden loss of consciousness and prompt death from respiratory arrest. Smaller but still lethal doses may prolong the illness for one or more hours. Bitter almonds odor may be noted on the breath or vomitus.
Skin:	Corrosive. May cause severe pain and skin burns. Solutions are corrosive to the skin and eyes, and may cause deep ulcers which heal slowly. May be absorbed through the skin, with symptoms similar to those noted for inhalation.
Eye Contact:	Corrosive. Symptoms may include redness, pain, blurred vision, and eye damage.
Chronic Exposure:	Prolonged or repeated skin exposure may cause a "cyanide" rash and nasal sores.
Aggravated by Exposure:	Those using cyanides should have a preplacement and periodic medical exam. Those with a History of central nervous system, thyroid, skin, heart or lung diseases may be more susceptible to the effects of this substance.
SECTION IV - FIRST AID MEASURES	
Inhalation:	Remove to fresh air. Administer antidote kit and oxygen per pre-planned instructions if symptoms occur. Keep patient warm and at rest. Do not give mouth to mouth resuscitation.
Ingestion:	If ingested, antidote kit and oxygen should be administered. If patient is conscious, immediately give the patient activated charcoal slurry. Never give anything by mouth to an unconscious person. Do not induce vomiting as it could interfere with resuscitator use.
Skin:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Administer antidote kit and oxygen per preplanned instructions if symptoms occur.
Eyes:	Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

SECTION V - FIRE FIGHTING MEASURES

Fire:	Not Combustible, but upon Decomposition or Contact with Acids, This Material Releases Highly Flammable and Toxic Hydrogen Cyanide Gas.
Explosion:	Not Considered to be a Explosion Hazard, but upon Heating with Chlorates or Nitrates to 842 °F (450 °C) may Cause an Explosion. Violent Explosion Occurs if Melted with Nitrite Salt. Sealed Containers may Rupture when Heated.
Fire Extinguishing Media:	Use any means Suitable for Extinguishing Surrounding Fire. Do Not Use Carbon Dioxide. Carbon Dioxide can React with This Material to Produce Hydrogen Cyanide.
Special Information:	In the Event of Fire, Wear Full Protective Clothing and NIOSH-Approved Self-Contained Breathing Apparatus with Full Facepiece Operated in the Pressure Demand or Other Positive Pressure Mode.

SECTION VI - ACCIDENTAL RELEASE MEASURES

Spills: Ventilate Area of Leak or Spill. Allow Only Qualified Personnel to Handle Spill. Clean-Up Personnel Require Protective Clothing and Respirator Protection From Vapors. Absorb Material with Paper Towel and Place in a Closed Container for Recovery or Disposal. Do Not Flush to Sewer! Decontaminate Liquid Residues in Spill Area with Sodium or Calcium Hypochlorite Solution. US Regulations (CERCLA) Require Reporting Spills and Releases to Soil, Water and Air in Excess of Reportable Quantities.

SECTION VII - HANDLING AND STORAGE

Keep in Tightly Closed Container, Stored in a Cool, Dry, Ventilated Area. Protect Against Physical Damage and Freezing. Workers must Carefully Follow Good Hygienic Practices, Including No Eating, Drinking, or Smoking in Workplace. A Cyanide Antidote Kit (Amyl Nitrite, Sodium Nitrite, and Sodium Thiosulfate) Should be Readily Available. Containers of this Material May be Hazardous when Empty Since they Retain Product Residues (Vapors, Liquid).

SECTION VIII - EXPOSURE CONTROL / PERSONAL PROTECTION

Ventilation System:	A System of Local and/or General Exhaust is Recommended to Keep Employee Exposures Below the Airborne Exposure Limits. Local Exhaust Ventilation is Generally Preferred Because it can Control the Emissions of the Contaminant at its Source, Preventing Dispersion of it into the General Work Area.
Airborne Exposure Limits:	OSHA Permissible Exposure Limit (PEL): 5 mg/m ³ skin (TWA) (as CN), ACGIH Threshold Limit Value (TLV): 5 mg/m ³ (STEL) Ceiling, skin, as CN.
Personal Respirators: (NIOSH APPROVED)	If the Exposure Limit is Exceeded, Wear a Supplied Air, Full-Facepiece Respirator, Airlined Hood, or Full-Facepiece Self-Contained Breathing Apparatus. This Substance has Poor Warning Properties.
Skin Protection:	Wear Impervious Protective Clothing, Including Boots, Apron, Gloves, Lab Coat or Coveralls, as Appropriate, to Prevent Skin Contact.
Eye Protection:	Use Chemical Safety Goggles and/or Full Face Shield where Splashing is Possible. Maintain Eye Wash Fountain and Quick-Drench Facilities in Work Area.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES	
Appearance / Odor:	Clear, Colorless Liquid / Odorless
Solubility:	48 g/100 cm ³ @ 50 °F (10 °C)
Specific Gravity:	Approximately 1.05
pH:	Approximately 11.0
% Volatiles by Vol.:	0
Melting Point:	1047 °F (564 °C)
Boiling Point:	ca. 212 °F (100 °C)
Vapor Density (Air=1):	No Information Found.
Vapor Pressure (mmHg):	No Information Found.
SECTION X - STABILITY AND REACTIVITY	
General Reactivity:	Stable Under Ordinary Conditions of Use and Storage.
Hazardous Decomposition:	Emits Toxic Fumes of Cyanide and Oxides of Nitrogen when Heated to Decomposition.
Incompatibilities:	Acid. Nitrates, Nitrites, Chlorates, Fluorine, Magnesium, and Strong Oxidizers. Reacts with Acids to Liberate Toxic and Flammable Hydrogen Cyanide Gas. Water or Weak Alkaline Solutions can Produce Dangerous Amounts of Hydrogen Cyanide in Confined Areas.
Hazardous Polymerization:	Will Not Occur.
SECTION XI - TOXICOLOGICAL INFORMATION	
Carcinogenic References:	IARC Category- None, NTP Carcinogen - Known: No LCLo (Inhalation) : 120 mg/m ³ /1 hour (man - hydrogen cyanide) LC50 (Inhalation) : 323 ppm/5 minutes (mouse - hydrogen cyanide) All cyanide salts are extremely toxic via ingestion. The probable oral lethal dose is < 5 mg/kg, or a mere taste (< 7 drops) for a 70kg person or 1 teaspoon of a 2% HCN solution. TDLo (Ingestion) : 714 ug/kg (man) LDLo (Ingestion) : 2857 ug/kg (man) LD50 (Ingestion) : 6440 ug/kg (rat)
SECTION XII - ECOLOGICAL INFORMATION	
Environmental Fate:	No information found.
Environmental Toxicity:	This material is expected to be very toxic to aquatic life. This material is expected to be very toxic to terrestrial life.
SECTION XIII - DISPOSAL CONSIDERATIONS	
	Cyanides must be Oxidized to Harmless Waste Before Disposal. An Alkaline Solution (pH of 10) is Treated with Chlorine or Commercial Bleach in Excess to Decompose Cyanide. When cyanide-free, it can be neutralized. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.
SECTION XIV - TRANSPORT INFORMATION	
Shipping Name:	Toxic liquid, inorganic, n.o.s. (Sodium Cyanide)
Hazard Class:	6.1
Identification No.:	UN 3287, PG I

SECTION XV - REGULATORY INFORMATION						
Chemical Inventory Status – Part 1:	Ingredient ----- Sodium Cyanide (143-33-9)	TSCA ----- Yes	EC ----- Yes	Japan ----- Yes	Australia ----- Yes	
Chemical Inventory Status – Part 2:	Korea DSL NDSL Phil. ----- Sodium Cyanide (143-33-9)			--Canada-- ----- No	Ingredient ----- Yes	
Federal, State & International Regulations – Part 1:	Ingredient ----- Sodium Cyanide (143-33-9)	-SARA 302- RQ ----- 10	TPQ ----- 100	-----SARA 313----- List ----- No	Chemical Catg. ----- Cyanide comp	
Federal, State & International Regulations – Part 2:	CERCLA 261.33 8(d) ----- Sodium Cyanide (143-33-9)		----- 10	-RCRA- ----- P106	-TSCA-Ingredient ----- No	
Chemical Weapons Convention:	Yes					
TSCA 12 (b):	No					
CDTA:	Yes					
SARA 311/312:	Acute: Yes	Chronic: Yes	Fire: No	Pressure: No	Reactivity: No	(Pure / Solid)
Australian Hazchem Code:	4X.					
Poison Schedule:	S7.					
SECTION XVI - OTHER INFORMATION						
NFPA Rating:	HEALTH-3, FLAMMABILITY-0, REACTIVITY-1					
Disclaimer:	The information contained herein is based upon data believed to be reliable and reflects our best professional judgment. Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein and assume no responsibility regarding the suitability of this information for the user's intended purpose or for the consequence of its use. Each individual should make a determination as to the suitability of the information for his/her particular purpose(s).					