

odyssey nail systems MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL NAME: Ethyl Methacrylate Monomer

PRODUCT NAME: Ethyl Methacrylate Monomer

TRADE NAME/PRODUCT CODE: **Change Monomer**

PRODUCT USE: Organic Process Chemical

MANUFACTURER: Odyssey Nail Systems
ADDRESS: 6498 Wilcrest Dr
Houston, TX 77072

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SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

FOR MIXTURE:

ITEM	CHEMICAL NAME	CAS NUMBER:	WT/WT %
01	Ethyl Methacrylate Monomer	97-63-2	60.0-100.0
02	Isopropyl Alcohol	67-63-0	10.0-30.0
03	Ethylene Glycol Dimethacrylate	97-90-5	3.0-7.0
04	N,N-Dimethyl-p-Toluidine	99-97-8	0.5-1.5
05	p-Hydroxyanisole	150-76-5	5-20 ppm

ITEM	ACGIH		OSHA		Company Recommendation	SKIN
	TLV-TWA	TLV-STEL	PEL TWA	PEL CEILING		
01	100 ppm	NE	100 ppm	NE	100 ppm	NE
02	400 ppm	500 ppm	400 ppm	NE	400 ppm	NE
03	NE	NE	NE	NE	NE	NE
04	NE	NE	NE	NE	NE	NE
05	5 mg/m ³	NE	5 mg/m ³	NE	5 mg/m ³	NE

See Section 16 for Abbreviations.

SECTION 3 - HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW:**

WARNING:	For Mixture:	POISON! DANGER!	May be fatal if swallowed. Harmful if inhaled or absorbed through skin. Vapor Harmful. Flammable. Effects Central Nervous System. May cause blindness. Cannot be made not poisonous.
For Ethyl Methacrylate Monomer:			
Acute Hazards:		Eyes:	Eye contact may cause irritation with discomfort, tearing, or blurring of vision.
		Respiratory Tract:	Inhalation may cause irritation of the respiratory tract with coughing, of nonspecific discomfort, such as nausea, headache and or weakness.
		Skin:	Effects in humans include skin irritation with discomfort or allergic skin rashes.
		Digestive Tract:	Ingestion may cause anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness
		Symptoms:	May include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.
Chronic Hazards:		Skin:	May cause allergic skin rashes.
		Animal Studies:	Administered lethal oral doses include weakness, labored and irregular respiration, drop in arterial blood pressure and coma.
For Isopropyl Alcohol:			
Acute Hazards:		Eyes:	Vapors cause irritation. Splashes cause severe irritation, possible corneal burns and eye damage.
		Ingestion:	Can cause drowsiness, unconsciousness, and death. Gastrointestinal pain, cramps, nausea, vomiting, and diarrhea may also result. The single lethal dose for a human adult is about 250 milliliters (8 ounces).
		Inhalation:	Vapors irritate the respiratory tract. Exposure to high concentrations has a narcotic effect, producing symptoms of dizziness, drowsiness, headache, staggering, unconsciousness and possibly death.
		Skin:	May cause irritation with redness and pain. May be absorbed through the skin with possible systemic effects.
Aggravation of Pre-existing Conditions:			Persons with pre-existing skin disorders or impaired liver, kidney or pulmonary function may be more susceptible to the effects of this agent.

SECTION 3 - HAZARDS IDENTIFICATION CONTINUED**EMERGENCY OVERVIEW CONTINUED:**

For Dimethacrylate:

Acute Hazards:	Eyes:	Suspected irritant. Symptoms may include burning, tearing, redness or swelling.
	Ingestion:	Slight hazard, if ingested in large quantities.
	Inhalation:	Suspected respiratory tract irritant hazard. No significant signs of adverse health hazard due to low volatility of material. However, aerosols or vapors which are generated at elevated temperatures may cause irritation. Symptoms may include coughing, mucous production and shortness of breath.
Chronic Hazards:	Skin:	Moderate irritant/allergic sensitizer.
	Skin:	Extensive/prolonged or repeated exposure can result in significant absorption. A major component in this product has been shown to produce allergic skin sensitization in guinea pigs. Cross-sensitization reactions to similar materials have also been reported in this species. Dermatitis has been seen in animal studies.
Medical Conditions Aggravated by Exposure:		This material or its emissions may induce allergic or sensitization reaction and thereby aggravate systemic disease.

For N,N-Dimethyl-p-Toluidine:

Acute Hazards:	Eyes:	May cause irritation.
	Ingestion:	May cause methemoglobinemia.
	Inhalation:	Causes elevated methemoglobin in the blood. Symptoms may include headaches, weakness and dizziness, and can be recognized by the blue color of the lips, fingernails, nose and earlobes. Vapor or mist is irritating to mucous membranes and upper respiratory tract.
	Skin Absorption:	Liquid is rapidly absorbed through skin. Absorption of this product into the body causes the formation of methemoglobin, which in sufficient concentration causes cyanosis, symptoms include headache, dizziness, nausea and abdominal pain.
Chronic Hazards:		In case of blue discoloration (cyanosis) of skin, lips or fingernails give oxygen to breathe. No alcohol or physical exertion. Contact a physician.
Medical Conditions Aggravated by Exposure:		Existing cardiovascular or respiratory conditions, blood disorders and dermatitis.

SECTION 3 - HAZARDS IDENTIFICATION CONTINUED**EMERGENCY OVERVIEW CONTINUED:**

For N,N-Dimethyl-p-Toluidine continued:

Note to Physicians:

Absorption of this product leads to formation of methemoglobin, which in sufficient concentration causes cyanosis. Reversion of methemoglobin to hemoglobin occurs spontaneously after termination of exposure, moderate degree of cyanosis need to be treated only by supportive measures such as bed rest and oxygen inhalation. Thorough cleansing of the entire contaminated area is of utmost importance. If cyanosis is severe, intravenous injection of methylene blue, 1-2 mg/kg body weight over a 5 minute period as a 1 % solution may be of value. If elevated methemoglobin persists after an hour, the treatment may be repeated, but the total dose should not exceed 7 mg/kg body weight. Cyanocobalmin (Vitamin B-12), 1 mg intramuscularly is reported to speed recovery. Intravenous fluids and blood transfusions may be indicated in very severe exposures.

For p-Hydroxyanisole:

Acute Hazards:

Eyes:

Ingestion:

Inhalation:

Skin:

Duration:

Risk of serious damage.

Harmful if swallowed.

Harmful if inhaled, irritating to mucous membranes and upper respiratory tract.

Harmful if absorbed through skin.

Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue.

Chronic Hazards:

Eyes:

Skin:

Prolong contact may cause eye damage.

May cause severe burns or irritation.

CARCINOGENICITY:

Isopropyl Alcohol is not classifiable as a human carcinogen by IARC. The Dimethacrylate may contain trace quantities of substances known to the state of California to cause cancer and/or reproductive toxicity. All other components are not listed as carcinogens by ACGIH, IRAC or NTP.

PRIMARY ROUTES OF ENTRY:

Ingestion, Inhalation, Eyes or Skin.

SECTION 4 - FIRST AID MEASURES**EMERGENCY AND FIRST AID PROCEDURES:**

EYES:	Flush with water for 15 minutes, including under eyelids. Get immediate medical attention.
INGESTION:	Aspiration Hazard. If swallowed, vomiting may occur spontaneously, but do not induce. Get immediate medical attention.
INHALATION:	Remove to fresh air. If not breathing give artificial respiration. If difficult breathing, give Oxygen. Get immediate medical attention.
SKIN:	Wash with soap and water. Get medical help if discomfort persists.
CLOTHING:	Remove contaminated clothing and shoes. Wash/clean thoroughly before reuse.
TREATMENT:	Treat symptoms after thorough decontamination.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT:	-9 °C, 16 °F
FLAMMABLE LIMIT, AIR VOL% LOWER:	1.4
UPPER:	11.4
AUTOIGNITION TEMPERATURE:	404 °C, 759 °F
EXTINGUISHER METHOD:	Dry Chemical, Foam or Carbon Dioxide. Water may be ineffective. Water Spray may be used to keep fire exposed containers cool.
FIRE AND EXPLOSION HAZARDS:	Firefighters should wear self-contained breathing apparatus.
SPECIAL FIRE FIGHTING PROCEDURES:	Vapors can flow along surfaces to distant ignition source and flash back.
EXPLOSION HAZARD:	Explosives within the limits cited above. Fight fire from protected location.
SENSITIVE TO MECHANICAL IMPACT:	No.
SENSITIVE TO STATIC DISCHARGE:	Yes.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE:	Evacuate the area. Stay upwind and away from spill. Keep all sources of ignition away from spill. If spill is indoors, ventilate area of spill. Use inert material to contain and absorb material. Transfer absorbed material to approved containers for disposal, use non-sparking tools. Keep spills and runoffs from clean up out of sewers and open bodies of water. Spills on porous surfaces can contaminate the groundwater. If spill has not ignited, use water spray to contain vapors. Contaminated monomer may be unstable, add inhibitor to prevent polymerization.
WASTE DISPOSAL:	Waste material should be incinerated in accordance with Local, State and Federal regulations. According to 40 CFR 261, this product is classified as a hazardous material.

SECTION 7- HANDLING AND STORAGE**PRECAUTIONS FOR HANDLING:**

Observe precautions found on the label. Close container after each use. Ground all metal containers when transferring. Use explosion-proof equipment. Use in accordance with good industrial hygiene and safety practices.

PRECAUTIONS FOR STORING:

Protect from physical damage. Store in a cool, dry well-ventilated place away from fire hazards. Outside detached storage is preferred. Separate for incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Check inhibitor levels every three months. Effectiveness of the inhibitor is dependant on the presence of dissolved oxygen.

INDUSTRIAL HYGIENE PRACTICES:

Wash face and hands thoroughly with soap and water after use and before eating, drinking, smoking or applying cosmetics.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION**VENTILATION:**

Use good, local explosion-proof ventilation with a minimum capture velocity of 100 ft/min (30 m/min) at point of monomer release. Refer to Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists. Local exhaust ventilation is preferred since it prevents contamination dispersion into the work area by controlling it at its source.

RESPIRATORY PROTECTION:

Use self-contained breathing apparatus when needed.

EYE PROTECTION:

Safety glasses or chemical splash goggles.

PROTECTIVE GLOVES:

Impervious, nitrile.

OTHER PROTECTIVE EQUIPMENT:

Provide eyewash, safety shower and impervious clothing. Protective creams should not be used for protection, but may be used for ease of clean up.

INDUSTRIAL HYGIENE PRACTICES:

Wash face and hands thoroughly with soap and water after use and before eating, drinking, smoking or applying cosmetics.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, colorless liquid.
ODOR:	Sharp mint-like.
pH:	No information found.
ODOR THRESHOLD:	ND
BOILING POINT:	78 °C , 173 °F
FREEZING POINT:	-114 °C, -173 °F
VISCOSITY:	< 1 mPa @ 20 °C, 68 °F
SPECIFIC GRAVITY (H₂O=1):	ND
VAPOR PRESSURE:	78 @ 20 °C, 68 °F
PERCENT VOLATILE W/W%:	100 @ 21 °C, 70 °F
VAPOR DENSITY (AIR=1):	2.5
EVAPORATION RATE (BuAcr=1):	2.7
SOLUBILITY IN WATER:	Partially.
COEFFICIENT OF WATER/OIL DISTRIBUTION:	ND

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID:	High temperatures, ignition sources, aging and contamination.		
INCOMPATIBILITY (MATERIALS TO AVOID):	Reducing and oxidizing agents, heavy metal ions and many other substances.		
HAZARDOUS DECOMPOSITION PRODUCTS:	Mainly Oxides of Carbon when burned.		
HAZARDOUS POLYMERIZATION:	MAY OCCUR:	X	WILL NOT OCCUR:
STABILITY:	UNSTABLE:	X	STABLE:

SECTION 11- TOXICOLOGICAL PROPERTIES

TARGET ORGANS:	
For Mixture:	None Listed.
For Ethyl Methacrylate Monomer:	None Listed.
For Isopropyl Alcohol:	Nerves and Kidneys.
For Dimethacrylate:	None Listed.
For N,N-Dimethyl-p-Toluidine:	Liver, Central Nervous System, Blood and Skin.
For p-Hydroxyanisole:	Eyes. However all data in this MSDS refers to MEHQ in the dry powder form rather than in a liquid mixture

SECTION 11- TOXICOLOGICAL PROPERTIES CONTINUED**SENSITIVITY DATA:**

For Mixture:	None Listed.	
For Ethyl Methacrylate Monomer:		
Eyes Rabbit	Draize	Non-irritating.
Skin Rabbit	Occlusive, FDA Draize	Non-irritating/24H.
Guinea Pig	FCAT	Sensitizing.
Guinea Pig	Maximization Test	Sensitizing.
Observation Humans	Allergic Contact Dermatitis.	
For Isopropyl Alcohol:		
Eye Rabbit:	13 mg.	
Eye Rabbit:	10 mg, moderate.	
Skin Rabbit:	500 mg/24H, mild.	
For p-Hydroxyanisole:		
Skin Rabbit:	Mild irritation.	

MUTAGENICITY DATA:

For Mixture:	None Listed.	
For Ethyl Methacrylate Monomer:	Positive tests as a mutagen on laboratory animals. Positive as well as negative results in in-vitro mutagenicity/genotoxicity tests.	
For Isopropyl Alcohol:		
Rat Inhalation	Cytogenetic Analysis:	1030 µg/m ³ /16W
S. Cerevisiae	Cytogenetic Analysis:	20 mmol/tube.
For Dimethacrylate Monomer:	Mouse lymphoma studies indicate that this material may have a mutagenic potential. However the Ames assay for mutagenicity was negative. Therefore, there is reason to believe that the mouse lymphoma assay was a false positive.	
For p-Hydroxyanisole:		
Lymphocyte Human	DNA inhibition:	25 µmol/L.

REPRODUCTIVE TOXICITY DATA:

For Mixture:	None Listed.	
For Ethyl Methacrylate Monomer:		
Intraperitoneal Rat	TD _{Lo} :	735 mg/kg, 5-15D pregnant.
Intraperitoneal Rat	TD _{Lo} :	366 mg/kg, 5-15 D pregnant.
For Isopropyl Alcohol:		
Oral Rat	TD _{Lo} :	11340 mg/kg 45D pre.
Oral Rat	TD _{Lo} :	5040 mg/kg 1-20D preg.
Oral Rat	TD _{Lo} :	20160 mg/kg 1-20D preg.
Oral Rat	TD _{Lo} :	32400 µg/kg 26W pre.
Oral Rat	TD _{Lo} :	6480 mg/kg 26W male, 26W pre.

SECTION 11- TOXICOLOGICAL PROPERTIES CONTINUED

TOXICITY DATA:

For Mixture:

None Listed.

For Ethyl Methacrylate Monomer:

Dermal Rabbit	LD ₅₀ :	>9100 mg/kg.
Dermal Rabbit	LD ₅₀ :	>5000 mg/kg.
Inhalation Rat	LC ₅₀ :	8300 ppm/4H.
Intraperitoneal Mouse	LD ₅₀ :	1369 mg/kg.
Intraperitoneal Rat	LD ₅₀ :	1223 mg/kg.
Oral Mouse	LD ₅₀ :	7836 mg/kg.
Oral Rat	LD ₅₀ :	14800 mg/kg.
Oral Rat	LD ₅₀ :	13424 mg/kg.
Oral Rat	LD ₅₀ :	> 5000 mg/kg.
Oral Rabbit	LD ₅₀ :	3630 mg/kg.
Subcutaneous Rat	LD _{Lo} :	25 gm/kg.

For Isopropyl Alcohol:

Inhalation Mammal	LC ₅₀ :	1800 mg/m ³ .
Inhalation Mouse	LC _{Lo} :	7000 ppm/40M.
Inhalation Mouse	LC _{Lo} :	12800 ppm/3H.
Inhalation Rat	LC ₅₀ :	4000 ppm/4H.
Inhalation Rat	LC ₅₀ :	12000 ppm/8H.
Inhalation Rat	LC ₅₀ :	16000 ppm/8H.
Intraperitoneal Guinea Pig	LD ₅₀ :	2560 mg/kg.
Intraperitoneal Hamster	LD ₅₀ :	3444 mg/kg.
Intraperitoneal Mouse	LD ₅₀ :	4477 mg/kg.
Intraperitoneal Rat	LD ₅₀ :	2735 mg/kg.
Intraperitoneal Rabbit	LD ₅₀ :	667 mg/kg.
Intravenous Cat	LD _{Lo} :	1963 mg/kg.
Intravenous Dog	LD _{Lo} :	5120 mg/kg.
Intravenous Mouse	LD ₅₀ :	1509 mg/kg.
Intravenous Rat	LD ₅₀ :	1088 mg/kg.
Intravenous Rabbit	LD ₅₀ :	1184 mg/kg.
Oral Dog	LD ₅₀ :	4797 mg/kg.
Oral Guinea Pig	LD ₅₀ :	2700 mg/kg.
Oral Human	TD _{Lo} :	223 mg/kg.
Oral Human	LD _{Lo} :	3570 mg/kg.
Oral Man	TD _{Lo} :	14432 mg/kg.
Oral Man	LD _{Lo} :	5272 mg/kg.
Oral Mouse	LD ₅₀ :	2200 mg/kg.
Oral Mouse	LD ₅₀ :	3600 mg/kg.
Oral Rat	LD ₅₀ :	5045 mg/kg.
Oral Rabbit	LD _{Lo} :	10 mg/kg.
Skin Rabbit	LD ₅₀ :	12.8 gm/kg.
Subcutaneous Mammal	LD _{Lo} :	6 mg/kg.
Subcutaneous Mouse	LD _{Lo} :	6000 mg/kg.
Skin Rabbit	LD ₅₀ :	12800 mg/kg.
Unreported Route Man	LD _{Lo} :	2770 mg/kg.

For Dimethacrylate Monomer:

Intraperitoneal Rat	LD ₅₀ :	2880 mg/kg.
Oral Mouse	LD ₅₀ :	2000 mg/m ³ .
Oral Rat	LD ₅₀ :	3300 mg/m ³ .

SECTION 11- TOXICOLOGICAL PROPERTIES CONTINUED**TOXICITY DATA CONTINUED:**

For N,N-Dimethyl-p-Toluidine:

Intraperitoneal Mouse

LD₅₀: 212 mg/kg.

For p-Hydroxyanisole:

Intraperitoneal Mouse

LD₅₀: 250 mg/kg.

Intraperitoneal Rat

LD₅₀: 725 mg/kg.

Intraperitoneal Rabbit

LD₅₀: 970 mg/kg.

Oral Rat

LD₅₀: 1600 mg/kg.**SECTION 12 - ECOLOGICAL INFORMATION****AQUATIC TOXICITY:**

For Mixture:

For Ethyl Methacrylate Monomer:

Fish

LC₅₀: 100 mg/L/96H.

Daphnia Magna

EC₅₀: > 66 mg/L/48H.

Algae

EC₅₀: 0.64 mg/L/96H.

For Isopropyl Alcohol:

Fish

LC₅₀: 100 mg/L/96H.

For Dimethacrylate Monomer:

None Found.

BIODEGRADATION DATA:

For Ethyl Methacrylate:

Inherently biodegradable (69%).

ENVIRONMENTAL FATE:

For Isopropyl Alcohol:

When released to soil, expected to evaporate quickly. When released to soil, expected to biodegrade to a moderate extent. When released to water, expected to evaporate quickly. When released to water, expected to have a half-life between 1-10 days. When released to water, expected to biodegrade to a moderate extent. When released to air, expected to rapidly degrade by reaction with photochemically produced hydroxy radicals. When released to air, expected to have a half-life between 1-10 days. When released to air, may be removed to a moderate extent by wet deposition.

SECTION 13 - DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHOD:**

When discarded it is listed as a hazardous waste by the EPA under RCRA U-159 with the reportable quantity (RQ) of 5000 pounds (40 CFR Part 302). Incinerate liquid and diking material after addition of excess inhibitor, in accordance with Federal, State, and Local regulations.

DISPOSAL OF EMPTY CONTAINERS:

Reuse of empty drums or containers is not recommended. Employees should be advised of the potential hazards, due to residual flammable material, associated with empty containers. It is our policy to discourage the reuse of empty containers and to dispose of all empty containers properly, in accordance with Federal, State and Local regulations.

SECTION 14 - TRANSPORTATION

DOT/UN SHIPPING NAME:	ETHYL METHACRYLATE, STABILIZED, SOLUTION
DOT/UN CLASS:	3
NA/UN NUMBER:	UN 2277
PACKING GROUP:	II
NAERG:	129P
LABEL:	
NMFC ITEM #:	42650
SCHEDULE B:	2916.14.2010
IMDG CLASS:	3
EmS:	3-07
CERCLA RQ:	Ethyl Methacrylate = 1000 lbs.

SECTION 15 - REGULATORY INFORMATION
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ITEM	TSCA	EINECS	CERCLA	CAA	CWA	RCRA	SARA 313	MAK
01	X	X	X	X		U 118	X	
02	X	X					X	400 ppm
03	X	X						
04	X	X						
05	X	X	X				X	

ITEM	AUSTRALIA	CANADA	CHINA	JAPAN	KOREA	PHILIPPINE
01		X				
02	X	X		X	X	X
03	X	X		X	X	
05		X				

ITEM	CA65	FL	MA	MI	MN	NJ	PA	WA
01		X	X			X	X	
02		X	X		X	X	X	X
03	X							
05	X	X		X	X	X	X	

TSCA: FOR USE IN FDA REGULATED PRODUCTS ONLY

CANADIAN WHMIS: This product has been classified in accordance with the hazardous criteria of the CPR and the MSDS contains all the information required by the CPR. All of the components of this material are listed on the Canadian DSL.

WARNING STATEMENTS: T – Toxic
F – Flammable

RISK STATEMENTS: R10 – Flammable
R20/21/22 – Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38 – Irritating to eyes, respiratory system and skin.
R40 – Possible risks of irreversible effects.
R43 – May cause sensitization by skin contact.

SECTION 15 - REGULATORY INFORMATION CONTINUED**SAFETY STATEMENTS:**

S3 – Keep in a cool place.
S7/8 – Keep container tightly closed and dry.
S9 – Keep container in a well ventilated place.
S16 – Keep away from sources of ignition – No Smoking.
S20/21 – When using do not eat, drink or smoke.
S22 – Do not breathe dust.
S23/24 – Avoid contact with skin and eyes.
S29 – Do not empty into drains.
S33 – Take precautionary measures against static discharges.
S37/39 – Wear suitable gloves and eye/face protection.
S61 – May cause harm to the unborn child.

SECTION 16 - OTHER INFORMATION**HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS) RATING:**

HEALTH:	1
FLAMMABILITY:	3
REACTIVITY:	0
PERSONAL PROTECTIVE EQUIPMENT:	Gloves and Safety Glasses or Chemical Splash Goggles.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION RATING:

HEALTH:	1
FLAMMABILITY:	3
REACTIVITY:	0

ABBREVIATIONS:

NA	Not Applicable	ND	Not Determined
NE	Not Established	CPR	Controlled Products Regulation
ppm	parts per million	G	Gallon
mg	Milligram	L	Liter
gm	Gram	mol	Mole
kg	Kilogram	μ	Micro
mm	Millimeter	p	Pico
Pa	Pascals	c	Cento
LC	Lethal Concentration	LD	Lethal Dose
TC	Toxic Concentration	TD	Toxic Dose
BOD	Biological Oxygen Demand	COD	Chemical Oxygen Demand
Lo	Lowest	ThOD	Theoretical Oxygen Demand
TLm	Threshold Limit	IC	Inhibitory Concentration

SECTION 16 - OTHER INFORMATION CONTINUED**ABBREVIATIONS CONTINUED:**

H	Hours	M	Months
D	Days	Y	Years
W	Weeks	min	Minutes

OSHA Occupational Safety and Health Administration
ACGIH American Conference of Governmental Industrial Hygienist
IARC International Agency for Research for Cancer
TLV Threshold Limit Value
PEL Permissible Exposure Limit
NOEL No Observed Effect Level
NOAEL No Observed Adverse Effect Level

Prepared By: _____ Health, Safety and Environment

Reviewed By: _____ Technical Review

Reviewed By: _____ Senior Company Officer

Issue Date: _____

THIS MATERIAL SAFETY DATA SHEET IS PREPARED IN COMPLIANCE WITH FEDERAL REGULATIONS (29 CFR 1910.1200), THE COMMONWEALTH OF PENNSYLVANIA REGULATIONS (TITLE 34. CHAPTERS 301-323) AND CANADIAN WHMIS REGULATIONS, ANY APPLICABLE STATE AND LOCAL REGULATIONS SHOULD BE CONSULTED. THE ABOVE INFORMATION MAY BE BASED IN PART ON INFORMATION PROVIDED BY COMPONENT SUPPLIERS AND IS BELIEVED TO BE CORRECT AS OF THE DATE HEREOF. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OF THESE DATA, THE RESULTS TO BE OBTAINED FROM THE USE OF THE MATERIAL, OR THE HAZARDS CONNECTED WITH SUCH USE. SINCE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL AND WITH WHICH WE MAY BE UNFAMILIAR, AND SINCE DATA MADE AVAILABLE SUBSEQUENT TO THE DATE HEREOF MAY SUGGEST MODIFICATION OF THE INFORMATION, WE ASSUME NO RESPONSIBILITY FOR THE RESULT OF ITS USE. THIS INFORMATION AND MATERIAL IS FURNISHED ON THE CONDITION THAT THE PERSON RECEIVING IT SHALL MAKE HIS/HER OWN DETERMINATION AS TO THE SUITABILITY OF THE MATERIAL FOR HIS/HER PARTICULAR PURPOSE AND ON THE CONDITION THAT HE/SHE ASSUME THE RISK OF HIS/HER USE THEREOF.