Remarkable Coating #8 – PART A

Date of Preparation: 10/30/12

Material Safety Data Sheet

24 HOUR EMERGENCY ASSISTANCE	GENERAL MSDS ASSISTANCE
CHEMTREC: (800)-424-9300	B. D. CLASSIC ENTERPRISES, INC.
HEALTH HAZARD→ 2 FIRE→1 REACTIVITY→1 SPECIAL→0	12903 SUNSHINE AVENUE SANTA FE SPRINGS, CA 90670 TELEPHONE: (562) 944-6177 CHEMTREC – (800) 424-9300
*For acute and chronic health effects refer to the discussion in Section III	

SECTION I: NAME

PRODUCT NAME: Remarkable Coating #8 – PART A - Isocyanate
CHEMICAL NAME: Hexamethylene Diisocyanate Based Polyisocyanate in Organic Solvents
SYNONYMS: Polymeric Hexamethylene Diisocyanate
CHEMICAL FAMILY: Aliphatic Polyisocyanate
TYPE OF USE: Coatings

SECTION II: COMPOSITION/OCCUPATIONAL EXPOSURE LIMITS

HAZARDOUS INGREDIENTS	CAS #	%
Hexamethylene Diisocyanate(HDI)	28182-81-2	>50%
Time Weighted Average (TWA): 0.5 mg/m3		
Short Term Exposure Limit (STEL): 1.00 mg/m3 (15 minutes)		
Proprietary Ingredients	N/A	<50%

SECTION III: HAZARD IDENTIFICATION

Emergency Overview: Toxic gases/fumes may be given off during burning or thermal decomposition. Closed container may forcibly rupture under extreme heat or when contents have been contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Causes eye irritation. May cause lung damage.

Signal Word: Warning!

Hazards: Toxic gases/fumes may be given off during burning or thermal decomposition. Closed container may forcibly rupture under extreme heat or when contents have been contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Causes eye irritation. May cause lung damage.

Physical State: Liquid

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Color: **Colorless to light yellow**

Odor: **Low Odor, Sweet**

Potential Health Effects:

Routes of Exposure: **Skin Contact, Inhalation, Eye Contact**

Acute Skin: **Causes irritation seen as local redness, itching and swelling. Repeated or prolonged skin contact may cause sensitization and an allergic skin reaction.**

Chronic Skin: **Prolonged contact can cause reddening, swelling, rash, and in some cases, skin sensitization.**

Acute Inhalation: **Diisocyanate or polyisocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.**

Chronic Inhalation: **As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitizations (chemical asthma) that will cause them to react to a later exposure to isocyanate at levels well below the TLV or MGL. These symptoms, which include: chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent.**

Acute Eye Contact: **Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.**

Chronic Eye Contact: **Prolonged vapor contact may cause conjunctivitis**

Acute Ingestion: **Ingestion can result in irritation. Symptoms may include abdominal pain, nausea, vomiting and diarrhea.**

Chronic Ingestion: **None found**

Carcinogenicity: **This product is not listed by NIP, IARC, or regulated as a carcinogen by OSHA.**

Medical Conditions Aggravated by Exposure: Asthma and other respiratory disorders (bronchitis, emphysema, hyper reactivity) skin allergies, eczema and existing eye conditions.

IV. FIRST AID MEASURES

Inhalation: **If overcome by exposure, remove victim to fresh air immediately. Call a physician. Give oxygen or artificial respiration as needed. Asthmatic symptoms may develop**

	and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.
Eye:	**Immediately flush eyes thoroughly with plenty of clean, lukewarm water and continue flushing for at least 15 minutes while lifting eyelids with fingers to ensure that the chemical is being flushed from the eyes. Refer individual to physician or ophthalmologist for immediate follow up.**
Skin:	**Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Flush with lukewarm water for 15 minutes. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if ill effect or irritation develops. Wash clothing before wearing again.**
Ingestion:	**If ingested, give1-2 cups of milk or lukewarm water (pint or ½ litre) if victim is fully conscious and alert. DO NOT INDUCE VOMITING. Obtain emergency medical attention.**
Note to Physician:	**Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation frequently. Workplace vapors could produce reversible corneal epithelial edema impairing vision.** **Skin: This product is a known skin sensitizer. Treat symptomatically. There is no specific antidote.** **Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the product.** **Inhalation: This product is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material must be removed from any further exposure to any isocyanate.**

SECTION V: FIRE-FIGHTING MEASURES

NON-FLAMMABLE LIQUID

Flash Point:	**> 250°F**
Auto-Ignition Temperature	**>500°F**
Lower Flammable Limit	**Not Established**
Upper Flammable Limit	**Not Established**

Extinguishing Media: Dry Chemical; Carbon Dioxide (CO2) ; Foam; Water spray for large fires.
Special Fire Fighting Procedures: Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.
Unusual Fire/Explosion Hazards: Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO2) formed. Use cold water spray to cool fire exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

SECTION VI: ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Evacuate non-emergency personnel. Isolate the area and prevent access. Remove sources of ignition. Notify management. Notify appropriate authorities if necessary. Put on Protective equipment. Control source of the leak. Dike or impound spilled material and control further spillage if feasible. Ventilate. Prevent from entering ground water supply, sewers and soil. Cover the spilled material with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow

to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions.
Decontamination solutions: nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%).
DISTRIBUTION EMERGENCIES: Chemtrec should be notified at (800) 424-9300 when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Distribution includes transportation, storage incidental to transportation, loading and unloading. Such notification must be immediate and made by the person having knowledge of the release.

SECTION VII: HANDLING AND STORAGE

Storage Temperature (Min/Max): -34°C (-29°F)/86°F (30°C)
Shelf Life: 6 months at 77°F (25°C)
Storage Conditions: If container is exposed to high heat, it can be pressurized and possibly rupture explosively. HDI reacts slowly with water to form CO2 gas. This gas can cause sealed containers to expand and possibly rupture explosively.
Handling Procedures: Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating oar burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal Protection:

Ventilation: Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne monomeric HDI.

Respirator Requirements: A respirator that is recommended or approved for use in isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature use that may product inhalation exposures. A supplied-air respirator (either positive pressure or continuous flow-type) is recommended. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and HDI polyisocyanate. Specific conditions under which air-purifying respirators can be used are outlined in the following sections. Observe OSHA regulations for respirator use (29 CR 1910.134).
Spray Application:
Good industrial hygiene practice dictates that when isocyanate-based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of coatings containing this product, the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when one

or more of the following conditions exists:

- **the airborne isocyanate concentrations are not known; or**
- **the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or**
- **the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or**
- **operations are performed in a confined space (See OSHA confined Space Standard, 29 CFR 1910.146).**

A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met:

- **the airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) house (10 times 8 hour TWA exposure limit); and**
- **the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits and**
- **A NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.**

Non-Spray Operations:

During non-spray operations such as mixing, batch making, brush or roller application, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system will be applied in a non-spray manner, a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when one or more of the following conditions exist:

- **the airborne isocyanate concentrations are not known; or**
- **the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or**
- **the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits and**
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- **A NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.**

Monitoring: Refer to Patty's Industrial Hygiene and Toxicology-volume 1 (3rd edition) Chapter 17 and volume 3 (1st edition). Chapter 3 for guidance concerning appropriate air sampling strategy to determine airborne concentrations of isocyanate.

Medical Surveillance: Medical supervision of all employees who handle or come in contact with this isocyanate product is recommended. This should include pre-employment and periodic medical examinations

with respiratory function tests (FEV, FVC, as a minimum.) Persons with asthma-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted.
Additional Protective Measures: Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions.

Skin: Permeation resistant gloves (nitrile rubber, butyl rubber, PVA). Note Polyvinyl alcohol degrades in water. Based on laboratory assessment tests, it is recommended that latex gloves not be worn when working with isocyanates. Cover as much of the exposed skin area as possible with appropriate clothing (long sleeve shirts, trousers, etc.) If skin creams are used, keep the area protected only by the cream to a minimum.

Eye: Liquid chemical goggles. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face-shield.

Recommended Work Practices: Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY	**: Approximately 1.14 @ 20°C (68°F)**
BOILING PRESSURE	**: Not measurable due to decomposition**
FLASH POINT	**: > 300ºF**
pH	**: NOT APPLICABLE**
COLOR	**: COLORLESS TO LIGHT YELLOW**
STATE	**: LIQUID**
ODOR CHARACTERISTIC	**: LOW ODOR, SLIGHTLY SWEET**
VAPOR PRESSURE	**: HDI Polyisocyanate: 9.3 x 10-6 mm Hg @ 20 C (68 F)**
VISCOSITY	**: Approx. 726 mPa.s @ 23°C/73.4°F-DIN EN ISO 3219/A.3**
SOLUBILITY IN WATER	**: Insoluble – reacts slowly with water to liberate CO2 gas.**
FREEZING POINT	**: Approximately - 10**ºC (14ºF)
DRY POINT	**: No Data Available**
MOLECULAR WEIGHT	**: (Polyisocyanate) 500 g/mol**
BULK DENSITY	**: Approximately 9.5 lb/gal.**
COATING VOC (Part A & B Mixed)	**: < 5 g/l**

SECTION X: STABILITY AND REACTIVITY

Chemical Stability: This material is stable when properly handled and stored.

Hazardous Polymerization: May occur; Contact with moisture or other materials which react with isocyanates or temperatures above 400 F (204 C) may cause polymerization.

Incompatibility with: Water, Amines, strong bases, alcohols, copper alloys

Decomposition Products: By fire and thermal decomposition; carbon dioxide, carbon monoxide, oxides of nitrogen, HCN, HDI and other undetermined aliphatic fragments.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICITY DATA FOR: HDI homopolymer materials except where indicated.

ACUTE TOXICITY
ORAL LD50: Estimated to be greater than 5,000 mg/kg (rats). (Based on the results of actual tests conducted using specific HDI-homopolymer products)
DERMAL LD50: Estimated to be greater than 5000 mg/kg rabbits). (Based on the results of actual tests conducted using specific HDI-homopolymer products)
INHALATION LC50: LC50 values ranging from 390-453 mg/m3 were obtained in rats exposed to aerosols. (4-hour exposure)
EYE EFFECTS: rabbit, Draize, slightly irritating
SKIN EFFECTS: Slightly irritant; rabbit, Draize
SENSITIZATION: dermal: sensitizer (guinea pig, Maximisation Test (GPMT) dermal: non-sensitizer (guinea pig, Buehler) inhalation: non-sensitizer (guinea pig).
REPEATED DOSE TOXICITY: 3 weeks, inhalation: NOAEL: 3.7-4.3 mg/m3 (Rat)/ 90 days, inhalation: NOAEL: 3.3 – 3.4 mg/m3 (Rat)/ Irritation to lungs and nasal cavity.

SECTION XII: ECOLOGICAL INFORMATION

Biodegradation: 0%, Exposure time: 28 days, not readily biodegradable.

Acute and Prolonged Toxicity to Fish: LCO: >100 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)

Acute Toxicity to Aquatic Invertebrates: ECO: >100 mg/l (Water flea (Daphnia magna), 48 hours)

Toxicity to Aquatic Plants: EC50: >1,000 mg/l, (Green algae (Scenedesmus subspicatus), 72 hours)

Toxicity to Microorganisms: EC50:> 1,000 mg/l, (Activated sludge microorganisms, 3 hours)

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste must be disposed of in accordance with federal, state and local environmental control regulations. Incineration is the preferred method. If incinerated, toxic and corrosive combustion gases must be properly handled.
EMPTY CONTAINER PRECAUTIONS: Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION XIV: TRANSPORT INFORMATION

DOT:

PROPER SHIPPING NAME:	**Other regulated substances, liquid, n.o.s (contains Hexamethylene-1,6-Diisocyanate)**
HAZARD CLASS OR DIVISION:	**9**
UN/NA NUMBER:	**NA3082**
PACKING GROUP:	**III**
HAZARD LABEL:	**Class 9**
REPORTABLE QUANTITY:	**14,285 lb**

***When in individual containers of less than the Product RQ, this material ships as non-regulated.**

IMO/IMDG CODE (OCEAN): NON-REGULATED
ICAO/IATA (AIR): NON-REGULATED

SECTION XV: REGULATORY INFORMATION

OSHA STATUS: **This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CR 1910.1200.**
TSCA STATUS: **On TSCA Inventory**
CERCLA REPORTABLE QUANTITY: None

SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: NONE
SECTION 311/312 HAZARD CATEGORIES: **Acute Health Hazard, Chronic Health Hazard, Reactivity Hazard**
SECTION 313 TOXIC CHEMICALS: None
RCRA STATUS: **If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFA 261.20-24)**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

COMPONENT NAME/CAS NUMBER	CONCENTRATION	STATE CODE
Homopolymer of Hexamethylene Diisocyanate (HDI) 28182-81-2	>50%	PA3, NJ4, MA

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

WEIGHT %	COMPONENTS	CAS-No.
< 1%	Hexamethylene – 1,6 Diisocyanate	822-06-0

CALIFORNIA PROPOSITION 65
To the best of our knowledge, this product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects or other reproductive effects.

SECTION XVI: OTHER INFORMATION

NFPA 704M RATINGS:

Health	2
Flammability	1
Reactivity	1
Other	0

0= Minimal 1= Slight 2= Moderate 3= Serious 4=Severe

HMIS RATINGS:

Health	2*
Flammability	1
Reactivity	1

0= Minimal 1= Slight 2= Moderate 3= Serious 4=Severe
*** Chronic Health Hazard**

Remarkable Coating #8 – PART A Date of Preparation: 10/30/12

Disclaimer of Responsibility: This document is generated for the purpose of distributing health, safety, and environmental data. It is not a specification sheet nor should any displayed data be construed as a specification. The information on this MSDS was obtained from sources that we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Remarkable Coating #8 – PART B

Date of Preparation: 10/30/12

MATERIAL SAFETY DATA SHEET **PREPARATION DATE: 10/30/12**

I. PRODUCT IDENTIFICATION

PRODUCT NAME: REMARKABLE COATING #8 – RESIN - PART B

II. HAZARDOUS INGREDIENTS

Ingredient Name	CAS Number	Concentration(%)
Aspartic Ester	**TRADE SECRET**	**>40%**
Aliphatic Carboxylic Ester	**623-91-6**	**>3%**
Proprietary Ingredients	**TRADE SECRET**	**<50%**

Specific chemical identity is withheld as a trade secret

OSHA: Not Established

ACGIH: Not Established

EMERGENCY OVERVIEW

WARNING: Color: Slight Yellow Form: Liquid Odor: Slight
May cause eye, skin, and respiratory tract irritation. May cause allergic skin reaction: irritating gases/fumes are given off during burning or thermal decomposition.

Potential Health Effects

Primary Route of Entry: Skin Contact, Eye Contact, Ingestion, Inhalation

Medical Conditions Aggravated By Exposure: Skin disorders, Respiratory disorders, Eye disorders

NFPA 704M Rating

Health	**2**
Flammability	**1**
Reactivity	**0**
Other	

0= Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
***= Chronic Health Hazard**

HMIS Rating

Health	**2***
Flammability	**1**
Physical Hazard	**0**

0= Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
*** = Chronic Health Hazard**

Human Effects and Symptoms of Overexposure:

Inhalation

Acute Inhalation

For Component: Aspartic Ester

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

Skin

Acute Skin

For Component: Aspartic Ester

May cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash.

Eye

Acute Eye

For Component: Aspartic Ester

May cause slight irritation.

Ingestion

Acute Ingestion

For Component: Aspartic Ester

May be harmful if swallowed.

For Component: Aliphatic Carboxylic Ester

May be harmful if swallowed.

Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

III. PHYSICAL PROPERTIES

Physical Form:	**Liquid**
Color:	**Slightly Amber**
Odor:	**Slight inherent odor**
Flash Point:	**>200ºF**
pH:	**Not established**
Boiling Point:	**Not established**
Melting/Freezing Point:	**Not Established**
Solubility in Water:	**Insoluble**
Specific Gravity:	**1.06 g/cm3 @ 68° F (25° C)**
Bulk Density:	**8.80 lbs/gal @ 77 F (25 C)**
Vapor Pressure:	**1.4 x 10-5 mm Hg @ 20°C (68°F)**

Coating VOC (Part A & B Mixed): < 5 g/l

IV. FIRE AND EXPLOSION DATA

NON-FLAMMABLE LIQUID

Flammable Limits:

Upper Flammable Limit (UEL) (%):	**Not Established**
Lower Flammable Limit (LEL) (%):	**Not Established**
Auto Ignition Temperature:	**>600ºF**
Extinguishing Media:	**Carbon Dioxide; Dry Chemical; foam; Water**

Special Fire Fighting Procedures:

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. Use cold water spray to cool fire-exposed containers. During a fire, irritating and/or toxic gases and smoke may be present from decomposition/combustion. Ammonia may be released during a fire situation in the presence of air.

Unusual Fire/Explosion Hazards:

None reported for this product.

V. EMERGENCY AND FIRST AID PROCEDURES

Route(s) of Entry: Inhalation, Skin Contact, Eye

Inhalation: Immediately remove patient to fresh air if breathing becomes difficult. If breathing has stopped administer artificial respiration. Administer oxygen if breathing is still difficult (to be done by qualified medical personnel). Consult a physician.

Skin Contact: Remove contaminated clothing, jewelry, and shoes. Wash affected areas thoroughly with soap and water. Clean contaminated clothing, jewelry and shoes before reuse. Obtain medical attention if irritation develops.

Eye Contact: Flush immediately with clean, lukewarm water (low pressure) for at least 15 minutes, while holding eyelids open, to ensure that the chemical is being flushed from the eyes. Obtain medical attention if irritation develops.
Acute Ingestion: DO NOT INDUCE VOMITING. Give 1 to 2 cups of water or milk for dilution. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult a physician immediately. Should vomiting occur, keep patient's head lower than hip level to prevent aspiration. NOTE TO PHYSICIAN: Treat any ill effects symptomatically.

VI. EMPLOYEE PROTECTION RECOMMENDATIONS

Industrial Hygiene/Ventilation/Respiratory Measures: Exhaust ventilation sufficient to control any generated contaminants. Curing ovens must be ventilated to prevent the buildup of explosive atmospheres and to prevent off gases from entering the workplace. In addition, a respirator that is recommended or approved for use in organic vapor containing environments (air purifying or fresh air supplied) may be necessary. In spray applications, an organic vapor/particulate respirator or air supplied unit is necessary. The use of a positive pressure supplied air respirator is mandatory when airborne concentrations are not known or if spraying is performed in a confined space or area with limited ventilation. Consider type of application and environmental concentrations. Take into account other materials being used concurrently. Observe OSHA regulations for respirator use (29 CFR 1910.134.)
Eye Protection Requirements: Liquid chemical goggles in combination with a full-face shield. Contact lenses should not be worn.
Skin Protection Requirements: Permeation resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.

VII. REACTIVITY DATA

Stability:	**This is a stable material.**
Hazardous Polymerization:	**Will not occur.**
Materials to Avoid:	**Oxidizing materials, acids, isocyanates**
Instability Conditions:	**Extreme heat**
Decomposition Products:	**By fire, amines, CO, CO2, oxides of nitrogen (NOx), ammonia, and other aliphatic fragments which have not been determined.**

VIII. SPILL AND LEAK PROCEDURES

Spill or Leak Procedures: Cleanup personnel must use appropriate personal protective equipment. Remove all sources of ignition, including flames, heat and sparks. Dike or dam spilled material and control further spillage, if possible. Do not allow spilled material or wash water to enter sewers, surface waters, or groundwater systems. Cover spill with inert material (e.g., dry sand or earth) and collect for proper disposal. Wash spill are with soap and water.

IX. SPECIAL PRECAUTIONS & STORAGE DATA

Storage Temperature (Min/Max):	**32°F (0°C)/104°F (40°C)**
Shelf Life:	**6 months at ambient temperatures**

Handling/Storage Precautions: Material is hygroscopic and may absorb small amounts of atmospheric moisture. Keep container dry and tightly closed in a cool and well ventilated area. Take precautions against the buildup of electrostatic charges. Avoid getting material on skin and clothes, or in the eyes. Do not breathe vapors/mists if generated.

Waste Disposal Method
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty Container Precautions:
Do not heat or cut container with electric or gas torch. Recondition or dispose of empty container in accordance with governmental regulations. Do not reuse empty container without proper cleaning. Label precautions also apply to this container when empty.

X. SHIPPING INFORMATION

LAND TRANSPORT (DOT)
Non-Regulated

IMO/IMDG CODE (OCEAN):

Non-Regulated

ICAO/IATA (AIR):

Non-Regulated

XI. ECOLOGICAL DATA

Fish Toxicity: LC50=66 mg/l (Brachydanio rerio (Zebra barbell). Duration of test 96 hours.
Invertebrate Toxicity: EC50=88.60 mg/l (Daphnia magna). Duration of test 48 hours.*
Biological Elimination: biodegradability: 13% - not readily degradable Degradation rate is 28 days.
Inhibition Bacteria: EC50 = 3110 mg/l.*
Plant Toxicity: EC50 = 113 mg/l (Green algae (Scenedesmus subspicatus)). Duration of test 72 hours. *

- **Based on a similar product. On the basis of the ecotoxicological data, this product and the similar product are classified as harmful to aquatic organisms.**

XII. FEDERAL REGULATORY INFORMATION

OSHA Status:	**This product is hazardous under the criteria of the Federal OSHA Hazard communication Standard 29 CFR 1910.1200.**
TSCA Status:	**On TSCA Inventory**
CERCLA Reportable Quantity:	**None Reported**
SARA Title III:	
Section 302	**Hazardous substances: None**
Section 311/312 Categories:	**Hazardous Categories: Acute Health Hazard**
Section 313 Toxic Categories:	**None**
RCRA Status:	**Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.**

State Right-To-Know Information: The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be

applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right-To-Know Substance Lists:

Weight %	Components	CAS#
>40%	**Aspartic Ester**	**CAS# is a trade secret**
3-7%	**Aliphatic Caboxylic Ester**	**623-91-6**

WARNING: Prop 65
To the best of our knowledge, this product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects or other reproductive effects.