

**SAFETY DATA SHEET**

Industrial / Professional Use Only



**THE HANSON GROUP, LLC**  
GOOD PEOPLE, GREAT SCIENCE

Date Prepared : 04/04/2018

MSDS No : RAA8503A

**1. PRODUCT AND COMPANY IDENTIFICATION****RECOMMENDED USE:** Isocyanate-terminated Prepolymer**PRODUCT CODE:** PolyArmor RAA 8503 Part A**MANUFACTURER**

The Hanson Group, LLC

3044 Adriatic Court

Peachtree Corners, GA 30071

**Emergency Contact:** 8:00AM - 5:00PM EST**Emergency Phone:** 770-495-9554**E-Mail/Website:** sales@hansonco.net / www.hansonco.net**24 HR. EMERGENCY TELEPHONE NUMBERS****CHEMTREC (US Transportation) :** (800) 424 - 9300**CHEMTREC (Outside USA) :** (703) 527 - 3887

EMERGENCY TELEPHONE NUMBER: Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the USA, Canada, or US Virgin Islands, call CHEMTREC at 1-800-424-9300, 24 hours a day. Or, outside these areas, call (703) 527-3887. Collect calls are accepted.

**2. HAZARDS IDENTIFICATION****GHS CLASSIFICATIONS**

Acute Toxicity (Inhalation), Category 2

Skin Irritation, Category 2

Respiratory Sensitization, Category 1

Skin Sensitization, Category 1

Target Organ Toxicity (Single exposure), Category 3

**GHS LABEL****According to Regulation 2012 OSHA Hazard Communications Standard: 29 CFR Part 1910.1200**Skull and  
crossbonesHealth  
hazard**SIGNAL WORD:** DANGER**HAZARD STATEMENTS**

H315: Causes skin irritation.

H330: Fatal if inhaled.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317: May cause an allergic skin reaction.

H335: May cause respiratory irritation.

**PRECAUTIONARY STATEMENTS****General:**

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P271: Use only outdoors or in a well-ventilated area.

P272: Contaminated work clothing should not be allowed out of the workplace.

P501: Dispose of contents/container to ...

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302+P352: IF ON SKIN: Wash with plenty of water/...

P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P264: Wash skin and face thoroughly after handling.

P363: Wash contaminated clothing before reuse.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P284: [In case of inadequate ventilation] wear respiratory protection.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	Wt.%	CAS
4,4'-methylenedi(cyclohexyl Isocyanate)	5 - 15	5124-30-1
Aliphatic Prepolymer	60 - 100	Trade Secret

**4. FIRST AID MEASURES****EYES:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention.

**SKIN:**

If direct skin contact with isocyanates occurs, immediately remove contaminated clothing and shoes. Wipe off the isocyanate product from the skin using dry towels or other similar absorbent fabric. If readily available, apply a polyglycol-based cleanser (e.g. Colorimetric Laboratories, Inc. (CLI) D-TAM™ Skin Cleanser) or corn oil. Wash with soap and warm water and pat dry. If a polyglycol-based cleanser is not available, wash with soap and warm water for 15 minutes. If available, use a wipe test pad to verify decontamination is complete (e.g. CLI SWYPE™). Get medical attention if irritation develops. Discard or wash contaminated clothing before reuse.

**INGESTION:**

Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

**INHALATION:**

Move to an area free from further exposure. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE****ACUTE EFFECTS:**

Isocyanate 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.

Causes skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

**Delayed:** Symptoms affecting the respiratory tract can also occur several hours after overexposure.

#### **NOTES TO PHYSICIAN:**

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

### **5. FIRE FIGHTING MEASURES**

#### **EXTINGUISHING MEDIA:**

Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam, water spray for large

#### **EXPLOSION HAZARDS:**

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> 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.

#### **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

#### **HAZARDOUS DECOMPOSITION PRODUCTS:**

By Fire and High Heat: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

### **6. ACCIDENTAL RELEASE MEASURES**

#### **GENERAL PROCEDURES:**

Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area and prevent access of unauthorized personnel. Notify management. Call CHEMTREC at 1-800-424-9300 for assistance and advice.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material (e.g., vermiculite, kitty litter, Oil-Dri®, etc...). Allow for the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon

salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface. For spills involving a solid product, remove mechanically (sweep up, vacuum, shovel etc.) and collect and place into an approved metal container.

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Residual surface contamination can be checked using a wipe test pad to verify decontamination is complete (e.g. CLI Surface Swype™). If the wipe test pad demonstrates that isocyanate remains on the surface (red color on pad), repeat applications of neutralization solution, with scrubbing, followed by absorbent until the surface is decontaminated (no color change on wipe pad). Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralization process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

## 7. HANDLING AND STORAGE

### GENERAL 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 or 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.

### STORAGE TEMPERATURE:

Ideal storage temperature range is 86 - 104 F (30 - 40 C) Dicyclohexylmethane-4,4'-Diisocyanate (HMDI) is stored for prolonged periods at or below a temperature of 77 F (25 C), crystallization and settling of the isomer may occur. Storage in a cold warehouse can cause crystals to form. These crystals can settle to the bottom of the container. If crystals do form, they can be melted easily with moderate heat. It is suggested that a container the size of a drum be warmed for 16-24 hours at 104-122 F (40-50 C). When the crystals are melted, the container should be agitated by rolling or stirring, until the contents are homogenous. Since heated Dicyclohexylmethane-4,4'-Diisocyanate (HMDI) (104-122 F (40-50 C)) will generate vapors more rapidly than product stored at 77 F (25 C), be sure to follow the precautions under the Personal Protection section of the SDS whenever opening a heated Dicyclohexylmethane-4,4'-Diisocyanate (HMDI) container.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear safety goggles or safety glasses with side shields when handling and mixing this material.

**SKIN:** Wear impervious compatible chemical resistant protective clothing such as neoprene or butyl rubber gloves, aprons, boots or Tyvek coveralls, as appropriate to prevent contact with skin.

**RESPIRATORY:** S38: In case of insufficient ventilation, wear suitable respiratory equipment.

**WORK HYGIENIC PRACTICES:** Always follow "Good personal hygiene practices" when working with this material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**ODOR:** Slight Irritant

**ODOR THRESHOLD:** No data available

**COLOR:** Clear

**PHYSICAL STATE COMMENTS:** liquid

**pH:** No data available

**FLASHPOINT AND METHOD:** to 200°C

**AUTOIGNITION TEMPERATURE:** to 225°C

**VAPOR DENSITY:** No data available

**BOILING POINT:** 155°C to 160°C

**Notes:** @0.67hPa

**MELTING POINT:** 20°C

**THERMAL DECOMPOSITION:** No data available

**SOLUBILITY IN WATER:** Insoluble in water, reacts with evolution of CO<sub>2</sub>

## 10. STABILITY AND REACTIVITY

**REACTIVITY:** This material will react slowly with water or moisture, but under normal use, no hazardous reaction will occur

**CONDITIONS TO AVOID:** Avoid extreme heat and cold

**HAZARDOUS DECOMPOSITION PRODUCTS:** By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke., Other undetermined compounds

**INCOMPATIBLE MATERIALS:** Strong oxidizing agents, Water, Amines, Strong bases, Alcohols

## 11. TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY

**DERMAL LD<sub>50</sub>:** > 7000 mg/kg (rat)

**ORAL LD<sub>50</sub>:** 18200 mg/kg (rat)

**INHALATION LC<sub>50</sub>:** 0.434 mg/l (4 hour)

**SKIN CORROSION/IRRITATION:** Irritating

**SERIOUS EYE DAMAGE/IRRITATION:** Slightly Irritating

**RESPIRATORY OR SKIN SENSITISATION:** Sensitizer

**GERM CELL MUTAGENICITY:** Not Applicable

### CARCINOGENICITY

**NOTES:** Not Applicable

## 12. ECOLOGICAL INFORMATION

**BIOACCUMULATION/ACCUMULATION:** Not readily biodegradable

### AQUATIC TOXICITY (ACUTE)

**96-HOUR LC<sub>50</sub>:** 1.2 mg/L (Zebra fish)

**48-HOUR EC<sub>50</sub>:** 8.3 Water flea mg/L

## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Dispose in accordance with applicable Federal, State, and Local regulations.

**PRODUCT DISPOSAL:** Incineration is preferred

### EMPTY CONTAINER:

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Other regulated substances, liquid, n.o.s. (contains Dicyclohexylmethane-4,4'-Diisocyanate)

**PRIMARY HAZARD CLASS/DIVISION:** 9

**UN/NA NUMBER:** NA3082

**PACKING GROUP:** III

**LABEL:** Class 9

**AIR (ICAO/IATA)**

**SHIPPING NAME:** Aviation regulated liquid, n.o.s. (contains Dicyclohexylmethane-4,4'-Diisocyanate)

**UN/NA NUMBER:** UN3334

**PRIMARY HAZARD CLASS/DIVISION:** 9

**PACKING GROUP:** III

**LABEL:** Miscellaneous

**15. REGULATORY INFORMATION**

**UNITED STATES**

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**311/312 HAZARD CATEGORIES:** Acute Health Hazard

**313 REPORTABLE INGREDIENTS:** Dicyclohexylmethane-4,4'-Diisocyanate

**CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)**

**CERCLA REGULATORY:** None

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

**TSCA STATUS:** All ingredients in this mixture are listed with the TSCA Chemical Substance Inventory.

**16. OTHER INFORMATION**

**Date Prepared:** 04/04/2018

**MANUFACTURER DISCLAIMER:** This SDS to the best of our knowledge conforms to the requirements of 2012 OSHA Hazard Communication Standard 29 CFR 1910.1200, and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company. Responsibility for the product sold is subject to our standard terms and conditions, a copy of which is available upon request. This company warrants only that its products meet the specifications stated in the sales contract. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications. While all the information presented in this document is believed to be reliable and to represent the best available data on these products, **NO GUARANTY, WARRANTY, OR REPRESENTATION IS MADE, INTENDED, OR IMPLIED AS TO THE CORRECTNESS, OR SUFFICIENCY OF ANY INFORMATION, OR AS TO THE MERCHANTABILITY OR SUITABILITY OR FITNESS OF ANY CHEMICAL COMPOUNDS OR OTHER PRODUCTS FOR ANY PARTICULAR USE OR PURPOSE, OR THAT ANY CHEMICAL COMPOUNDS OR OTHER PRODUCTS OR THE USE THEREOF ARE NOT SUBJECT TO A CLAIM BY A THIRD PARTY FOR INFRINGEMENT OF ANY PATENT OR OTHER INTELLECTUAL PROPERTY RIGHT.** Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. Liability by this company for all claims, whether arising out of breach of warranty, negligence, strict liability, or otherwise, is limited to the purchase price of the material. Products may be toxic and require special precautions in handling. For all products listed, the user should obtain detailed information on toxicity, together with the proper shipping, handling and storage procedures, and comply with all applicable safety and environmental standards. Toxicity and risk characteristics of chemical compounds and other products may differ when used with other materials or in a manufacturing or other process. Those risk characteristics should be determined by the user and made known to handlers, processors, and end users.