HDIP INC

SAFETY DATA SHEET

Endurable Polymer Pavement™----COMPONENT 1

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Product name: Endurable Polymer Pavement ™
Product Use: Epoxy Resin
MSDS Prepared by: HDIP INC
Date prepared: 6-22-15
Supplier:
HDIP INC
20981 Yeoman Road
Bend, Oregon 97701

For emergency health, safety, and environmental information, call 800-910-3120

Section 2 – HAZARDOUS IDENTIFICATION

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Skin irritation - Category 2
Eye irritation – Category 2A
Skin sensitization – Sub-category 1B
Acute aquatic toxicity – Category 2
Chronic aquatic toxicity – Category 2

Label elements
Hazard pictograms

Signal word: WARNING

Hazards
Causes skin irritation
May cause allergic skin reaction
Causes serious eye irritation
Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention
Avoid breating dust/fume/gas/mist/vapours/spray
Wash skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Avoid release to the environment

Wear eye protection/face protection
Wear protective gloves

Response
If on skin: Wash with plenty of soap and water
If in eyes: Rinse cautiously with water for several minutes. Remove contacts if present and easy to do. Continue rinsing
If skin irritation or rash occurs: Get medical attention/advice.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Collect spillage.
Disposal
Dispose of contents/container into an approved waste disposal plant.

Other hazards
No data available

Section 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: liquid epoxy resin
This product is a substance

Component: Propane, 2, 2-bis(p-(2,3-epoxypopoxy)phenyl)-, polymers
CAS #: 25085-99-8
Concentration: 100%

Section 4 - FIRST-AID MEASURES

Inhalation: Move to fresh air.
Eyes: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If eye irritation persists, seek medical attention.
Skin: Wash with soap and water. If skin irritation or an allergic skin reaction develops, get medical attention. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse.
Ingestion: Treat symptomatically. Do not induce vomiting. Get medical attention.

Section 5 - FIRE FIGHTING MEASURES

Flammable Properties—Not Applicable
Extinguishing Media— Foam/Carbon dioxide/Dry chemical/Water fog, do not use direct water stream, may spread fire
Protection of Fire Fighters— Wear self-contained breathing apparatus.
Unusual Fire and Explosion Hazards— Closed containers may rupture due to build-up of pressure when exposed to extreme heat.

Section 6 - ACCIDENTAL RELEASE MEASURES

Avoid contact with material. Stop spill at source, pump liquid to salvage container. Remaining liquid may be taken up on clay, sand, diatomaceous earth, or other absorbent. Use soap and water. Prevent from entering soil, ditches, sewers, waterways, or groundwater.

Section 7 - HANDLING AND STORAGE

Prevent all skin and eye contact. Avoid breathing vapors. Re-seal partially used containers. Wash with soap and water before eating or drinking. Protect from moisture contamination. Exothermic generation of carbon dioxide may cause dangerous pressure. Use within 2 years. Store between 40 and 109 degrees Fahrenheit. Avoid use of electric band heaters.

Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits	None established
Engineering Controls	Use with adequate ventilation
Gloves Procedures	Avoid prolonged skin contact. Chemically protected gloves may be worn.
Eye Protection	Safety Glasses
Respiratory Protection	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self contained breathing apparatus for confined spaced or poorly ventilated areas or large cleanup sites.
Clothing Recommendation	Do not wear rings, watches, or similar apparel that could entrap the material and cause a skin reaction.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form: liquid
Odor: slight
Autoignition temperature Not Applicable
Flash Point 510 degrees Fahrenheit
Flammable Limits - LEL Not Applicable
Flammable Limits - UEL Not Applicable
Boiling point 608 degrees Fahrenheit
Freezing point not determined
Density 1.16 g/cm3 @ 25 degrees Celsius
Vapor Density No Data Available
Vapor Pressure <0.0000001
Specific Gravity 1.16 (20 degrees Celsius
pH no data
Melting point Not Applicable
Solubility in Water 5.4-8.4 mg/l @ 20 Celsius

Section 10 - STABILITY AND REACTIVITY

Stability: Stable.
Materials and Conditions to Avoid (stability): Avoid excessive heat, open flame, sparks, and strong oxidizing agents. Replace outage with inert dry nitrogen. Avoid water, acid, base (alkalis, ammonia), alcohols, metal compounds.
Hazardous Polymerization: Hazardous polymerization will not occur.
Decomposition Temperature: Not determined
Hazardous Decomposition or Byproducts: Depends on temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction releases phenolics, carbon monoxide, and water.

Section 11 - TOXOLOGICAL INFORMATION

Toxicological Information:
Acute oral toxicity
LD50: > 15,000 mg/kg (Rat) Estimated Value
Acute inhalation toxicity
Not determined.
Acute dermal toxicity
Not determined.
Skin irritation
rabbit, Draize, Slightly irritating
Eye irritation
rabbit, Draize, Slightly irritating
Sensitisation
Has caused skin reactions in humans. Demonstrated potential for contact allergy in mice.
Repeated dose toxicity
Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.
ChronicToxicity
Not a carcinogen.
Developmental Toxicity
Did not cause birth defects in animals
Reproductive Toxicity
Did not interfere with reproduction in animals
Genetic Toxicology
Studies were negative in some cases and positive in others in Vitro toxicity studies. Negative in all genetic toxicity studies.
Components influencing toxicology:
See section 3.

Section 12 - ECOLOGICAL INFORMATION

Biodegradation
12 %, Exposure time: 28 Days, Not readily biodegradable.
Acute and Prolonged Toxicity to Fish
LC50: 2 mg/l (Rainbow Trout, 96 h)
Acute Toxicity to Aquatic Invertebrates
EC50: 1.8 mg/l (Water flea (Daphnia magna), 48 h)
Toxicity to Aquatic Plants
EC50: 11 mg/l, (Green algae (Scenedesmus subspicatus), 72 h)
Toxicity to Microorganisms
IC50: 42.6 mg/l, (Activated sludge microorganisms, 18 h)

Section 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Method: Waste disposal should be in accordance with existing federal, state and local environmental control laws.
Incineration is the preferred method.
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.

Section 14 - TRANSPORT INFORMATION

DOT BULK OR NON-BULK
Not Regulated

IMDG
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S.
Technical Name: Epoxy Resin
Hazard Class: 9 ID Number UN3082 Packing Group: PGIII
EMS Number: F-A, S-F
Marine Pollutant: Yes
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Product name: Diglycidyl ether of Bisphenol A
Ship Type: 2
Pollution category: X
ICAO/IATA
Proper shipping name: Environmentally Hazardous Substance, Liquid, N.O.S
Technical Name: Epoxy Resin
Hazard Class: 9 ID Number: UN3082 Packing Group: PG III
Cargo Packing Instruction: 964
Passenger Packing Instruction: 964

Additional Information:
Marine Pollutant

Section 15 - REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200
Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	**Yes**
Delayed (Chronic) Health Hazard	**No**
Fire Hazard	**No**
Reactive Hazard	**No**
Sudden Release of Pressure Hazard	**No**

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know act of 1986) Sections 313
This product does not contain chemicals at levels which require reporting

Pennsylvania (Worker and Community Right To Know Act): Pennsylvania Hazardous Substances List and or Pennsylvania Environmental Hazardous Substance List:
This product does not contain chemicals at levels which require reporting
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require warning

US Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

Section 16 - OTHER INFORMATION

NFPA Hazard Classification
Health: 1 Flammability: 1 **Reactivity: 2 Special Hazards:** None

Canadian DSL: All components of this product are included, or are exempt from inclusion, in the Canadian Domestic Substance List (DSL).

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. HDIP INC MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

HDIP INC

SAFETY DATA SHEET

Endurable Polymer Pavement™----COMPONENT 2

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Product name: Endurable Polymer Pavement ™
Product Use: Curing agent
MSDS Prepared by: HDIP INC
Date prepared: 6-22-15
Supplier:
HDIP INC
20981 Yeoman Road
Bend, Oregon 97701

For emergency health, safety, and environmental information, call 800-910-3120

Section 2 – HAZARDS IDENTIFICATION

GHS classification
Serious Eye Damage - Category 1
GHS label elements
Hazard pictograms/symbols:

Signal Word: Danger
Hazard Statements: Causes Serious Eye Damage
Prevention: Wear eye protection/face protection
Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Hazards not otherwise classified
Severe eye irritant.
Mild respiratory tract irritant.
Mild skin irritant.
Risk of serious damage to eyes.
Corrosive to eyes.

Section 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Component: Polyamine- epoxy resin adduct
CAS #: Not available
Concentration: 35-65%

Section 4 - FIRST-AID MEASURES

Inhalation: Move to fresh air.
Eyes: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If eye irritation persists, seek medical attention.
Skin: Wash with soap and water. If skin irritation or an allergic skin reaction develops, get medical attention. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse.
Ingestion: Treat symptomatically. Do not induce vomiting. Get medical attention.

Section 5 - FIRE FIGHTING MEASURES

Suitable extinguishing media : Alcohol-resistant foam.
Carbon dioxide (CO2).
Dry chemical.
Dry sand.
Limestone powder.
Specific hazards : Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated.
Special protective equipment for fire-fighters
: Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.
Further information : Do not allow run-off from fire fighting to enter drains or water courses., Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures
: Wear suitable protective clothing, gloves and eye/face protection. Use selfcontained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.
Environmental precautions : Try to prevent the material from entering drains or water courses. Do not flush into surface water or sanitary sewer system. Construct a dike to prevent spreading.
Methods for cleaning up : Collect run-off water and transfer to drums or ta nks for later disposal. Full face shield with goggles underneath. Contact Air Products' Emergency Response Center for advice. Approach suspected leak areas with caution. Place in appropriate chemical waste container.
Additional advice : Full face shield with goggles underneath. Open enclosed spaces to outside atmosphere. If possible, stop flow of product.

Section 7 - HANDLING AND STORAGE

Handling

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Use only in well-ventilated areas. Avoid contact with eyes. Avoid breathing vapors and/or aerosols. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Product may partially freeze with extended exposure to cold temperatures, resulting in crystallization, haziness
or separation. If this occurs, product should be warmed to 100-140°F (38-60°C) for one hour and stirred until clear. Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place.

Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures

Provide readily accessible eye wash stations and safety showers.
Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

Respiratory protection : Keep self contained breathing apparatus readily available for emergency use. In atmospheres where the material is sprayed, workers should avoid contact with aerosols containing the Curing Agent through proper engineering controls such as exhaust ventilation and/or proper protective equipment such as fullface air-supplied respirators,gloves and full body protective clothing. Wear appropriate respirator when ventilation is inadequate.
Hand protection : Nitrile rubber.
In emergency situations, wear impermeable gloves with cuffs to prevent spread of material to area above the wrists.
Butyl-rubber
Nitrile rubber.
Neoprene gloves.
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection : Where there is the potential for exposure, chemical splash-proof goggles and a face shield must be worn. Other individuals working in the vicinity of this material where exposure can occur should also be fitted with chemical splash goggles. Workers should not contact their eyes or skin with hands contaminated with the Curing Agent.
Skin and body protection : Long sleeve shirts and trousers without cuffs.
Environmental exposure controls: Try to prevent the material from entering drains or water courses. Do not flush
into surface water or sanitary sewer system.
Special instructions for protection and hygiene
: Discard contaminated leather articles. Wash hands at the end of each workshift and before eating, smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Odor : Ammoniacal.
Odor threshold : No data available.
pH : 9.2
Melting point/range : < 32 °F (< 0 °C)
Boiling point/range : > 212 °F (> 100 °C)
Flash point : > 212 °F (> 100 °C)
Evaporation rate : No data available.
Flammability (solid, gas) : Not applicable.

Upper/lower
explosion/flammability limit
: Not applicable.
Vapor pressure : No data available.
Water solubility : No data available.
Relative vapor density : Not applicable.
Relative density : 1.1 (water = 1)
Partition coefficient (noctanol/
water)
: No data available.
Auto-ignition temperature : No data available.
Decomposition temperature : No data available.
Viscosity : 7,500 mPa.s at 68 °F (20 °C)
Molecular Weight : No data available.
Density : 68.671 lb/ft3 (1.1 g/cm3) at 70 °F (21 °C)

Section 10 - STABILITY AND REACTIVITY

Chemical Stability : Stable under normal conditions.
Conditions to avoid : No data available.
Materials to avoid : Organic acids (i.e. acetic acid, citric acid etc.).
Mineral acids.
Sodium hypochlorite.
Reaction with peroxides may result in violent decomposition of peroxide
possibly creating an explosion.
Oxidizing agents.
Hazardous decomposition
products
: Nitric acid.
Ammonia
Nitrogen oxides (NOx).
Nitrogen oxide can react with water vapors to form corrosive nitric acid.
Carbon monoxide.
Carbon dioxide (CO2).
Possibility of hazardous
Reactions/Reactivity: No data available.

Section 11 - TOXOLOGICAL INFORMATION

Likely routes of exposure
Effects on Eye : Severe eye irritation. Causes eye burns.
Effects on Skin : Mild skin irritation.
Inhalation Effects : Harmful if inhaled and may cause delayed lung injury. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration
may cause irritation of respiratory system.
Ingestion Effects : No data available.
Symptoms : Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Eye disease.
Acute toxicity
Acute Oral Toxicity : LD50 : > 2,000 mg/kg Species : Rat.
Inhalation : Inhalation of aerosols of a chemically similar ma terial resulted in the d eaths of rats during administration and in transient central nervous system symptoms
including lethargy, ataxia, tremorsand convulsions.
Acute Dermal Toxicity : LD50 : > 2,000 mg/kg Species : Rabbit.
Skin corrosion/irritation : Mild skin irritation. Irritation data from similar products.
Serious eye damage/eye
irritation

: Severe eye irritation. Corrosive to eyes.
Sensitization. : No data available.
Chronic toxicity or effects from long term exposures
Carcinogenicity : No data available.
Reproductive toxicity : No data is available on the product itself.
Germ cell mutagenicity : No data is available on the product itself.
Specific target organ systemic
toxicity (single exposure)
: No data available.
Specific target organ systemic
toxicity (repeated exposure)
: No data available.
Aspiration hazard : No data available.
Delayed and Immediate Effects and Chronic Effects from Short and Long Term Exposure
This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1
percent or greater.Eye disease.
Occular irritation tests with rabbits did not result in any animal deaths.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity effects
Aquatic toxicity : No data is available on the product itself.
Toxicity to other organisms : No data available.
Persistence and degradability
Biodegradability : No data is available on the product itself.
Mobility : No data available.
Bioaccumulation : No data is available on the product itself.
Further information
Information given is based on data obtained from similar substances. Very toxic to aquatic organisms, may
cause long-t erm adverse effects in the aquatic environment.

Section 13 - DISPOSAL CONSIDERATIONS

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

Section 14 - TRANSPORT INFORMATION

DOT
Not dangerous goods
IATA
Not dangerous goods
IMDG
Not dangerous goods
TDG
Not dangerous goods

Further Information
Not dangerous goods The transportation information is not intended to convey all specific regulatory
data relating to this material.

Section 15 - REGULATORY INFORMATION

Toxic Substance Control Act (TSCA) 12(b) Component(s):
USA TSCA Included on Inventory.
EU EINECS Included on EINECS inventory or polymer
substance, monomers included on
EINECS inventory or no longer polymer.
Canada DSL Not on Inventory. Notifications have been
submitted to Environment Canada.
Australia AICS Included on Inventory.
Japan ENCS Included on Inventory.
South Korea ECL Included on Inventory.
China SEPA Included on Inventory.
Philippines PICCS Included on Inventory.
EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification
Acute Health Hazard
EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level
None.
US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other
harm.

Section 16 - OTHER INFORMATION

NFPA Hazard Classification
Health: 3 Flammability: 1 **Physical Hazard: 0**

Prepared 6.22.15
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