SAFETY DATA SHEET

Section 1. Identification

Product Name: FlexJoint U500 (A-Side)

Corrosion Engineering
2829 Lakeland Drive
Jackson, MS 39232
877-982-7667
sds@ergon.com

Spill, leak, fire, exposure, or accident, call
CHEMTREC day or night
Domestic North America **800.424.9300**
International **703.527.3887**

Section 2. Hazards Identification

GHS Ratings:

Inhalation Toxicity	Acute Tox. 4	Gases>2500+<=5000ppm, Vapors>10+<=20mg/l, Dusts&mists>1+<=5mg/l
Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Respiratory sensitizer	1	Respiratory sensitizer
Skin sensitizer	1	Skin sensitizer
Carcinogen	2	Limited evidence of human or animal carcinogenicity
Organ toxin single exposure	3	Transient target organ effects- Narcotic effects- Respiratory tract irritation
Organ toxin repeated exposure	2	Presumed to be harmful to human health- Animal studies with significant toxic effects relevant to humans at generally moderate exposure (guidance)- Human evidence in exceptional cases

GHS Hazards

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash exposed skin thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P272	Contaminated work clothing should not be allowed out of the workplace

P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required
P285	In case of inadequate ventilation wear respiratory protection
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P314	Get Medical advice/attention if you feel unwell
P321	Specific treatment (as detailed on this label)
P362	Take off contaminated clothing and wash before reuse
P363	Wash contaminated clothing before reuse
P302+P352	IF ON SKIN: Wash with soap and water
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing
P308+P313	IF exposed or concerned: Get medical advice/attention
P332+P313	If skin irritation occurs: Get medical advice/attention
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention
P337+P313	Get medical advice/attention
P342+P311	Call a POISON CENTER or doctor/physician
P405	Store locked up
P403+P233	Store in a well ventilated place. Keep container tightly closed
P501	Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Danger

Section 3. Composites/Information on Ingredients

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] 9048-57-1 60 to 70%	OELs not established	OELs not established	
4,4'-Methylenediphenyl diisocyanate 101-68-8 10 to 20%	PELs - 0.02 ppm Ceiling PELs - 0.2 mg/m3 Ceiling	TLV - 0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	
Propylene carbonate 108-32-7 5 to 10%	OELs not established	OELs not established	
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]- 5873-54-1 1 to 5%	OELs not established	OELs not established	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9 1 to 5%	OELs not established	OELs not established	
Benzene, 1,1'-methylenebis [isocyanato- 26447-40-5 1 to 5%	PELs - 0.02 ppm Ceiling PELs - 0.2 mg/m3 Ceiling	OELs not established	
Benzene, 1,1'-methylenebis [2-isocyanato- 2536-05-2 0.1 to 1.0%	OELs not established	OELs not established	

Section 4. First-aid Measures

Move exposed person to fresh air. Get medical attention immediately. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is labored, oxygen should be administered by qualified personnel.

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

After contact with skin, wash immediately with plenty of warm, soapy water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. A poly-glycol based skin cleanser or corn oil may be more effective than soap and water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Provided the patient is conscious, wash out mouth with water. Get medical attention if symptoms appear.

Section 5. Fire-fighting Measures

Extinguishing Media: Foam, CO2 or dry powder. (**Note:** Water may be used if no other available media is available **AND** used in copious quantities. Reaction between water and hot material may be vigorous. Prevent washings from entering water courses, keep fire exposed containers cool by spraying with water.)

Caution:
Due to reaction with water producing CO2 gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Containers may burst if overheated.
Hazardous decomposition products:
Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN.
Special protective actions for fire-fighters:
Promptly isolate the scene by removing all persons from the vicinity of the incident, if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters:
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. PVC boots, gloves, safety helmet and protective clothing should be worn.

Section 6. Accidental Release Measures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing.

Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and may be hazardous.

Material is to be stored in accordance with local regulations. Store in original container protected from direct sunlight in a dry and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not reseal contaminated containers. Uncontaminated containers, free of moisture, may be resealed only after placing under a nitrogen blanket. Do not store in unlabeled containers.

Use appropriate containment to avoid environmental contamination.

Unsuitable containers: Do not store in containers made of copper, copper alloys or galvanized surfaces.

Section 8. Exposure Controls/Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] 9048-57-1	OELs not established	OELs not established	
4,4'-Methylenediphenyl diisocyanate 101-68-8	PELs - 0.02 ppm Ceiling PELs - 0.2 mg/m3 Ceiling	TLV - 0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	
Propylene carbonate 108-32-7	OELs not established	OELs not established	
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]- 5873-54-1	OELs not established	OELs not established	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	OELs not established	OELs not established	
Benzene, 1,1'-methylenebis [isocyanato- 26447-40-5	PELs - 0.02 ppm Ceiling PELs - 0.2 mg/m3 Ceiling	OELs not established	
Benzene, 1,1'-methylenebis [2-isocyanato- 2536-05-2	OELs not established	OELs not established	

Engineering Controls: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Smell is not an adequate indicator of hazard.

Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Personnel with a history of asthma-type conditions, bronchitis or skin sensitization conditions should not work with this material.

Ventilation: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Protective Gear: In case of inadequate ventilation, wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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.

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 9. Physical and Chemical Properties

Appearance: Pale yellow to amber	**Odor:** Faint odor
Vapor Pressure: No Data	**Odor threshold:** No Data
pH: No Data	**Melting point:** No Data
Freezing point: No Data	**Flash point:** 226 F,108 C
Evaporation rate: No Data	**Flammability:** No Data
Explosive Limits: No Data	**Vapor pressure:** No Data
Vapor Density: No Data	**Specific Gravity** 1.11
Solubility: No Data	**Partition coefficient (n-octanol/water):** No Data
Boiling range: No Data	**Autoignition temperature:** No Data
Decomposition temperature: No Data	**Viscosity:** N/A
% Weight Volatile (VOC) 0.00	

Section 10. Stability and Reactivity

Chemical Stability: Stable at room temperature. No specific test data related to reactivity is available for this product or its ingredients.
Hazardous reactions: Reaction with water (moisture) produces CO2 gas. An exothermic reaction with materials containing active hydrogen groups can occur. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. This material is insoluble with, and heavier than, water and sinks to the bottom, but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide.
The material will react with water, alcohols, amines, bases and acids.

Section 11. Toxicological Information

Dermal Toxicity LD50: 3,162mg/kg
Inhalation Toxicity LC50: 1mg/L

Component Toxicity

108-32-7	Propylene carbonate Dermal LD50: 20 mL/kg (Rabbit)
26447-40-5	Benzene, 1,1'-methylenebis[isocyanato- Inhalation LC50: 0.37 mg/L (Rat)

Routes of Entry

Inhalation **Skin Contact** **Eye Contact**

Target Organs

Eyes **Lungs** **Skin** **Respiratory System**

Effects of Overexposure

NO DATA

Carcinogenicity

CAS Number	Description	% Weight	Carcinogen Rating
101-68-8	4,4'-Methylenediphenyl diisocyanate	10 to 20%	4,4'-Methylenediphenyl diisocyanate:
26447-40-5	Benzene, 1,1'-methylenebis [isocyanato-	1 to 5%	Benzene, 1,1'-methylenebis [isocyanato-:
2536-05-2	Benzene, 1,1'-methylenebis[2-isocyanato-	0.1 to 1.0%	Benzene, 1,1'-methylenebis[2-isocyanato-:

Section 12. Ecological Information

Only component information is listed, if any. No testing has been performed on this mixture as it relates to ecological impact.

Component Ecotoxicity

Propylene carbonate	72 Hr EC50 Desmodesmus subspicatus: >500 mg/L; 96 Hr LC50 Cyprinus carpio: >1000 mg/L [semi-static]; 48 Hr EC50 Daphnia magna: >500 mg/L
Benzene, 1,1'-methylenebis [isocyanato-	14 Days LC50 Eisenia foetida: >1000 mg/kg [soil dry weight]; 14 Days NOEC Eisenia foetida: >=1000 mg/kg [soil dry weight]

Section 13. Disposal Considerations

The generation of waste should be avoided or minimized by using excess product in an alternate, beneficial application wherever possible.

Empty containers may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport Information

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	Not Regulated			
IATA	Not Regulated			
IMDG	Not Regulated			

Section 15. Regulatory Information

State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING!

This product contains the following chemicals which are listed by the State of California as carcinogenic or a reproductive toxin:

- None

WHMIS Symbol(s)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30, unless listed below:

- None

This product contains the following substance(s), which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372:

101-68-8	4,4'-Methylenediphenyl diisocyanate	10 - 20%
9016-87-9	Isocyanic acid, polymethylenepolyphenylene ester	1.0 - 5%

Section 16. Other Information

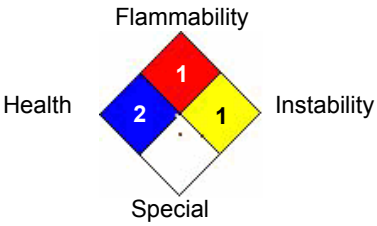
The customer is responsible for determining the proper PPE code for this material within their respective process.

Hazardous Material Information System (HMIS)

HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		1
PERSONAL PROTECTION		X

HMIS & NFPA Hazard Rating Legend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



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Notice to reader:

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PUPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behavior of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors and end users.