

# Custom Linings Industrial Coating Division 1-877-POLYUREA

## Custom Linings® 911CR Two Component Aromatic Polyurea Protective Coating Chemical Resistant

### DESCRIPTION

Custom Linings® 911-CR is a fast set, high acid & base resistance, rapid curing, 100% solids, flexible, aromatic, two component spray polyurea that can be applied to suitably prepared concrete and metal surfaces. Its extremely fast gel time makes it suitable for applications down to -20°F. It may be applied in single or multiple applications without appreciable sagging and is relatively insensitive to moisture and temperature allowing application in most temperatures.

### FEATURES

- ❖ Primary Containment for Medium to Low Acid & Base Concentrations at Room Temperature
- ❖ Secondary Containment for High Acid & Base Concentrations at Room Temperature
- ❖ Zero VOC (100% Solids)
- ❖ Excellent Thermal Stability
- ❖ Seamless
- ❖ No Toxic Vapors
- ❖ Odorless
- ❖ Non-Reactive
- ❖ Meets USDA Criteria
- ❖ Low Temperature Flexibility
- ❖ Coats Most Metals without Primer
- ❖ Installed With or Without Reinforcement in Transitional Areas

### TYPICAL USES

- ❖ Power Plants
- ❖ Refineries
- ❖ Fertilizer Plants
- ❖ Mining Operations
- ❖ Food Processing Plants
- ❖ Marine Environments
- ❖ Secondary Containment
- ❖ Water and Waste Water Treatment
- ❖ Industrial and Manufacturing Facilities
- ❖ Parking Garage Decks
- ❖ Structural Steel
- ❖ Warehouse Floors
- ❖ Cold Storage Facilities
- ❖ Landfill Containment
- ❖ Paper and Pulp Mills

### COLORS

Neutral. Custom colors are available upon request.

Due to its aromatic composition, Custom Linings® 911-CR will tend to yellow or darken in color and will become flat after exposure to UV light. Custom Linings® 911-CR may be topcoated with an aliphatic polyurethane/polyurea coating for a colorfast finish.

### PACKAGING

10 gallon kit: One 5 gallon pail of Part-A and one 5 gallon pail of Part-B.

100 gallon kit: One 50 gallon drum of Part-A and one 50 gallon

### TECHNICAL DATA (Based on compressed film)

Flash Point .....	>200°F
Density .....	8.9 lb/gal
Viscosity at 80°F (24°C), Brookfield,	
Part-A .....	800 ± 200 cps
Part-B .....	400 ± 100 cps
Spray Temperature .....	150-160°F
Mix Ratio, by volume .....	1A:1B
Pot Life, 160°F @ 50% R.H. ....	2-4 seconds
Hardness, ASTM D-2240 .....	50 ± 5 Shore D
Tack Free Time, 160°F .....	30-50 seconds
Tensile, ASTM 412-C .....	3200 ± 200 psi
Elongation, ASTM 412-C .....	500%
Tear, ASTM 624-C .....	250 ± 20 pli
Abrasion Resistance,	
H-18, 1000 Cycles, 1 Kg .....	76 mg

drum of Part-B.

### COVERAGE

Custom Linings® 911-CR may be applied at any rate to achieve desired thickness. Theoretical coverage for 1 mil thickness is one gallon per 1600 sq. ft.

### SURFACE PREPARATION

Refer to general guidelines for complete information.

### MIXING

Custom Linings® 911-CR may not be diluted under any circumstances. Use appropriate solvent for solvent purge line and flushing of equipment and if spraying stops for periods exceeding the potlife of the material. Thoroughly mix Custom Linings® 911-CR Part-B Base material with air driven power equipment until a homogeneous mixture and color is obtained.

### APPLICATION

Custom Linings® 911-CR should be applied using a 1:1 plural component equipment capable of developing a minimum of 2000 psi and heating the individual component to 170°F using an impingement gun. Hose temperature should be maintained at 160-170°F. The Custom Linings® 911-CR material should be preheated to 75-85°F.

Custom Linings® 911-CR should be sprayed in multidirectional passes for a proper uniform thickness.

### EQUIPMENT CLEAN UP

Equipment should be cleaned with an environmentally safe, urethane-grade solvent (alcohol free) as permitted under local regulations immediately after use.

### STORAGE

Custom Linings® 911-CR has a shelf life of six (6) months

from date of manufacture in factory sealed containers.

Part-A and Part-B drums must be stored above 60°F.

Avoid freezing temperatures.

Store drums on wooden pallets to avoid direct contact with the ground.

If stored for a long period of time, rotate Part-A and Part-B drums regularly.

## **LIMITATIONS**

Do not open until ready to use.

## **WARNING**

This product contains Isocyanates and Curative Material.

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***Please read all information in the general guidelines, product data sheets, guide specifications and material safety data sheets (MSDS) before applying material. Published technical data and instructions are subject to change without notice. Contact your local Custom Linings representative or visit our website for current technical data and instructions.***

### **SAFETY PRECAUTIONS**

This product is for industrial use only by professional applicators and is not intended or suitable for use in or around a household or residential property. Keep away from children and household items. This material contains polyisocyanates. Vapors and spray mist are harmful. Improper handling and use may be hazardous. At all times safety precautions must be strictly followed during storage, handling and application.

### **WARNING**

Individuals with chronic respiratory problems or prior respiratory reactions to such materials should not be exposed to vapors. All personnel entering the application area, including the applicator must wear properly fitted, NIOSH/MSHA approved, fresh air positive pressure air respirators with a full face piece or an air supplied hood.

Keep the material away from sparks, flash and open flames. Containers, even those that have been emptied, may contain dangerous and explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Do not pressurize containers to empty them.

### **LIMITED WARRANTY**

*Custom Linings* warrants its products to be free of manufacturing defects and that they will meet *Custom Linings* current published physical properties. *Custom Linings* warrants that its products, when properly installed by a licensed applicator according to *Custom Linings* guide specifications and product data sheets over a sound, properly prepared substrate, will not allow water migration for a period of three (3) years. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proves to be defective. There are no other warranties by *Custom Linings* of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. *Custom Linings* shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. *Custom Linings* shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. *Custom Linings* reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

### **DISCLAIMER**

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and *Custom Linings* makes no claim that these tests or any other tests, accurately represent all environments.

# Custom Linings Sprayed on Bed Liners 1-877-POLYUREA

## Custom Linings® 911 Two Component Aromatic Polyurea Protective Coating For Secondary Containment

### DESCRIPTION

Custom Linings® 911 is a two component, 1:1, 100% solids, fast set, liquid applied, aromatic polyurea liner system for metal, concrete, fiber glass and wood surfaces. Suitable for application at temperatures down to -20F.

### FEATURES

- ❖ Excellent Thermal Stability
- ❖ Good Chemical Resistance
- ❖ No Toxic Vapors
- ❖ Meets USDA Criteria
- ❖ Low Temperature Flexibility
- ❖ Abrasion and Impact Resistant
- ❖ Zero VOC
- ❖ Odorless
- ❖ Quick Drying
- ❖ Non-reactive

### TYPICAL USES

- ❖ Cargo liners
- ❖ Industrial Floorings
- ❖ Walkways
- ❖ Oil Field and Gas Production Secondary Containment Areas
- ❖ Cargo Holds
- ❖ Boat Linings
- ❖ Waterproof Decking

### COLOR

Sand, Tan, Gray and Black

### PACKAGING

107 gallon kit: 53.5 gallons (500 lbs. net) Part-A and 53.5 gallons (454 lbs. net) Part-B.

### MIXING

Custom Linings® 911 may not be diluted under any circumstances. Thoroughly mix 911 Side-B Base material with air driven power equipment until a homogeneous mixture and color is obtained. Both Side-A and Side-B material should be at the temperature range of 150-160°F before application.

Side-B base material must be thoroughly agitated until a homogenous mixture is obtained. Do not allow air to be incorporated into the product. Total suspension must be achieved. Side-A Isocyanate requires no mixing.

### COVERAGE

Custom Linings® 911 may be applied at any rate to achieve desired thickness. Theoretical coverage per gallon is 1600 sq. ft. at 1 mil.

Rate of coverage @ 30 Mils-53 sq ft per gallon  
60 Mils-26.5 sq ft per gallon  
80 Mils-20 sq ft per gallon  
120 Mils-13 sq ft per gallon

### SECONDARY CONTAINMENT SURFACE PREPARATION

In general, Custom Linings 911 can be applied over properly prepared steel, concrete or earth (dirt) surfaces for second-

### TECHNICAL DATA (Based on compressed film)

Flash Point .....	>200°F
Density .....	8.9 lb/gal
Viscosity at 80°F (24°C), Brookfield,	
Part-A .....	800 ± 200 cps
Part-B .....	400 ± 100 cps
Spray Temperature .....	150-160°F
Mix Ratio, by volume .....	1A:1B
Pot Life, 160°F @ 50% R.H. ....	2-4 seconds
Hardness, ASTM D-2240 .....	50 ± 5 Shore D
Tack Free Time, 160°F .....	30-50 seconds
Tensile, ASTM 412-C .....	3200 ± 200 psi
Elongation, ASTM 412-C .....	500%
Tear, ASTM 624-C .....	250 ± 20 pli
Abrasion Resistance, H-18, 1000 Cycles, 1 Kg .....	76 mg

ary containment of all liquid contaminants in oil and gas, mining and manufacturing where the need to contain wastewater, sludge or petrochemical systems is required.

**Concrete:** Ensure concrete is free of all contaminants such as oil, grease, dirt or any other chemical product prior to proceeding with surface preparation. The surface should be free of voids, pot holes, bug holes, loose or weak concrete. Repair any areas if required.

Abrasive blast using brush blast technique or better to achieve 1.5-3 mil anchor profile. Vacuum to remove dust, etc., prior to application of primer.

Prime with Custom Linings EBF or Polyepoxy Primer 21.

**Packed Earth:** Cover earth with suitable geotextile fabric. Apply coating over fabric to desired mil thickness.

### 911 SPRAY APPLICATION

Plural component, heated, high pressure 1:1 spray mixing equipment like Custom Linings CMX2 by Glas-Craft or other equivalent machine.

Both Side-A and Side-B material heaters should be at 175°F and hose heater at 165°F. Adequate pressure and temperature should be maintained at all times. Consult your Custom Linings Rep for additional information.

### STORAGE

Custom Linings® 911 has a shelf life of six months from date of manufacture in original, factory sealed containers.

Coating exposed to below freezing temperatures for an extended period of time will require preheating prior to application.

## LIMITATIONS

Due to its aromatic composition, Custom Linings® 911 will tend to yellow and/or darken in color after exposure to UV light. Choose to apply dark colors that will not show the effects of UV light (black, battleship gray, ect) or you may choose to topcoat, with a product such as Custom Linings Staingard 1110.

Do not open any product until ready to use.

Store drums on wooden pallets to avoid direct contact with the ground. If stored for a long period of time, rotate Side-A drums regularly.

Both Side-A and Side-B containers must be fitted with a desiccant device during use.

## WARNING

This product contains isocyanate and curative material.

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## SAFETY PRECAUTIONS

This product is for industrial use only by professional applicators and is not intended or suitable for use in or around a household or residential property. Keep away from children and household items. This material contains polyisocyanates. Vapors and spray mist are harmful. Improper handling and use may be hazardous. At all times safety precautions must be strictly followed during storage, handling and application.

## WARNING

Individuals with chronic respiratory problems or prior respiratory reactions to such materials should not be exposed to vapors. All personnel entering the application area, including the applicator must wear properly fitted, NIOSH/MSHA approved, fresh air positive pressure air respirators with a full face piece or an air supplied hood.

Keep the material away from sparks, flash and open flames. Containers, even those that have been emptied, may contain dangerous and explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Do not pressurize containers to empty them.

## LIMITED WARRANTY

Custom Linings warrants its products to be free of manufacturing defects and that they will meet Custom Linings current published physical properties. Custom Linings warrants that its products, when properly installed by a licensed applicator according to Custom Linings guide specifications and product data sheets over a sound, properly prepared substrate, will not allow water migration for a period of three (3) years. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proves to be defective. There are no other warranties by Custom Linings of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Custom Linings shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Custom Linings shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Custom Linings reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

## DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Custom Linings makes no claim that these tests or any other tests, accurately represent all environments.

# CHEMICAL RESISTANCE CHART FOR CUSTOM LININGS® 911-CR

The following chemical resistance data were obtained from a 70-75 mils film of CUSTOM LININGS 911-CR immersed in each chemical listed below at 70-75 degrees F for a period of 7 days. Like other industrial maintenance coatings, CUSTOM LININGS 911-CR has chemical and temperature limitations. Please read the disclaimer below. For chemicals other than those listed below, proper testing must be completed prior to application of the coating system. It is advisable to consult your local CUSTOM LININGS representative.

## CHEMICAL SOLVENTS

Xylene	4
Toluene	4
Acetone	2
2 Methyl Butane	1
MTBE	2
HEXANE	2

## CHEMICAL SOLVENTS

Motor Oil	2
Gasoline (unleaded)	1
Diesel	1
Brake Fluid	2
Hydraulic Oil	1
Methanol	4

## ACIDS and BASES

Sewage	1
Hydrogen Sulphide gas (H <sub>2</sub> S gas)	1
Hydrochloric Acid 35%	4
Hydrochloric Acid 10%	1
Hydrochloric Acid 5%	1
Propylene Carbonate	3
Acetic Acid, 10%	1
Phosphoric Acid, 10%	1
Ammonium Hydroxide 10%	1
Ammonium Hydroxide 20%	1
Sodium Hydroxide 50%	2
Salt Water (10%)	1
Drinking Water	1
De-Ionized Water	1

Sulphuric Acid 60%	4
Sulphuric Acid 30%	5
Sulphuric Acid 10%	1
Sulphuric Acid 5%	1
Potassium Hydroxide 10%	1
Potassium Hydroxide 20%	2
Sodium Hydroxide 10%	1
Sodium Hydroxide 20%	2
10% Sugar/Water	1

### CHART KEYS:

- 1: no visible damage
- 2: little visible damage
- 3: some effect swelling, discoloration, cracking
- 4: not recommended
- 5: satisfactory for splash, spillage and secondary containment (72-96 hours)

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Test performance results were obtained in a controlled environment and CUSTOM LININGS makes no claim that these tests or any other tests, accurately represent all environments. Application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating.

PUBLISHED TECHNICAL DATA AND INSTRUCTIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. CONTACT YOUR LOCAL CUSTOM LININGS REPRESENTATIVE FOR CURRENT TECHNICAL DATA AND INSTRUCTIONS.



**CUSTOM LININGS 911-CR  
CHEMICAL RESISTANT**

# CHEMICAL RESISTANCE CHART FOR CUSTOM LININGS® 911

The following chemical resistance data were obtained from a 70-75 mils film of CUSTOM LININGS 911 immersed in each chemical listed below at 70-75 degrees F for a period of 7 days. Like other industrial maintenance coatings, CUSTOM LININGS 911 has chemical and temperature limitations. Please read the disclaimer below. For chemicals other than those listed below, proper testing must be completed prior to application of the coating system. It is advisable to consult your local CUSTOM LININGS representative.

## CHEMICAL SOLVENTS

Xylene	4
Toluene	4
Acetone	2
2 Methyl Butane	1
MTBE	2
HEXANE	2

## CHEMICAL SOLVENTS

Motor Oil	2
Gasoline (unleaded)	1
Diesel	1
Brake Fluid	2
Hydraulic Oil	1
Methanol	4

## ACIDS and BASES

Sewage	1
Hydrogen Sulphide gas (H <sub>2</sub> S gas)	1
Hydrochloric Acid 35%	4
Hydrochloric Acid 10%	1
Hydrochloric Acid 5%	1
Propylene Carbonate	3
Acetic Acid, 10%	1
Phosphoric Acid, 10%	1
Ammonium Hydroxide 10%	1
Ammonium Hydroxide 20%	1
Sodium Hydroxide 50%	2
Salt Water (10%)	1
Drinking Water	1
De-Ionized Water	1

Sulphuric Acid 60%	4
Sulphuric Acid 30%	3
Sulphuric Acid 10%	1
Sulphuric Acid 5%	1
Potassium Hydroxide 10%	1
Potassium Hydroxide 20%	5
Sodium Hydroxide 10%	1
Sodium Hydroxide 20%	5
10% Sugar/Water	1

### CHART KEYS:

- 1: no visible damage
- 2: little visible damage
- 3: some effect swelling, discoloration, cracking
- 4: not recommended
- 5: satisfactory for splash, spillage and secondary containment (72-96 hours)

**DISCLAIMER:** For heavy acid contact we recommend 911-CR. All recommendations, statements, and technical data contained herein are based on tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. This information relates to the specific material designated and may not be valid for such material used in combination with any other material or in any process. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use and user assumes all risk and liability resulting from his use of the product. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer.

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**CUSTOM LININGS 911**  
**CHEMICAL RESISTANCE**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME: 911 Side-A**

## SECTION I - MANUFACTURER IDENTIFICATION

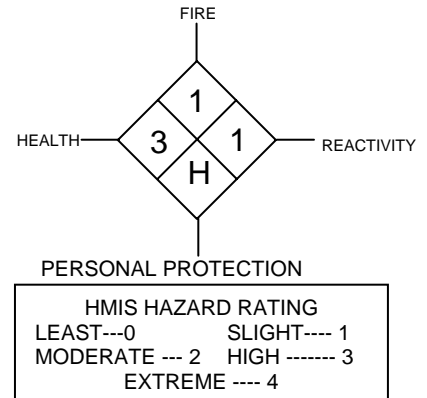
**MANUFACTURER'S NAME:** Custom Linings

**ADDRESS:** 15790 Fairway Drive, Buena Vista, Colorado 81211

**INFORMATION PHONE:** 719-395-4414

**EMERGENCY CONTACT:** 888-878-5233

**DATE REVISED:** February 2001



## SECTION I - HAZARDOUS INGREDIENTS/SARA III INFORMATION

HAZARDOUS COMPONENTS	OCCUPATIONAL EXPOSURE LIMITS				VAPOR PRESSURE	
	CAS NUMBER	OSHA PEL	ACGIH TLV	MFG TLV	mm Hg	@ TEMP
*4,4'- DIPHENYLMETHANE DIISOCYANATE	101-68-8	.02 ppm (CEILING)	.005 ppm		<5.0	25°C (77°F)
URETHANE PREPOLYMER		N/E		N/E		

\* Indicates toxic chemical(s) subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372.

## SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

**BOILING POINT:** >204°C (400°F)

**SPECIFIC GRAVITY:** (H<sub>2</sub>O=1): 1.13

**COATING V.O.C:** 0

**VAPOR DENSITY:** Heavier than air

**EVAPORATION RATE:** Slower than ether

**SOLUBILITY IN WATER:** Reacts with water

**APPEARANCE AND ODOR:** Thin clear liquid, Negligible odor

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT:** >135°C (275°F)

**METHOD USED:** PMCC

**FLAMMABLE LIMITS IN AIR BY VOLUME:** Lower: N/E

Upper: N/E

**EXTINGUISHING MEDIA:** Dry chemical, foam, and carbon dioxide. If water is used, use very large quantities of cold water. The reaction between water and hot isocyanate may be vigorous.

**SPECIAL FIRE FIGHTING PROCEDURES:** Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required. Excessive pressure or temperature may cause explosive rupture of containers.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

## SECTION V - REACTIVITY DATA

**STABILITY:** Stable under normal conditions.

**CONDITIONS TO AVOID:** Heat, high temperature, open flame, sparks, and moisture. Contact with incompatible materials in a closed system will cause liberation of carbon dioxide and buildup of pressure.

**INCOMPATIBILITY (MATERIALS TO AVOID):** This product will react with any material containing active hydrogens, such as water, alcohol, ammonia, amines, alkalis and acids, the reaction with water is very slow under 50°C, but is accelerated at higher temperature

and in the presence of alkalis, tertiary amines, and metal compounds. Some reactions can be violent.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Carbon dioxide, carbon monoxide, nitrogen oxides, ammonia, trace amounts of hydrogen cyanide and unidentified organic compounds may be formed during combustion.

**HAZARDOUS POLYMERIZATION:** May occur. High temperature, above 204°C (400°F) in the presence of moisture, alkalis, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

## SECTION V - HEALTH HAZARD DATA

**SKIN CONTACT:** Isocyanates react with skin protein and moisture and can cause irritation. Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and, in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms because of contact with very small amounts of liquid material or because of exposure to vapor. Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. This data reinforces the need to prevent direct skin contact with the product.

**EYE CONTACT:** Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. Prolonged vapor contact may cause conjunctivitis. Any level of contact should not be left untreated.

**SKIN ABSORPTION:** Systemically toxic concentrations of this product will probably not be absorbed through human skin.

**INGESTION:** Can result in irritating and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

**INHALATION:** MDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). High vapor concentrations may cause central nervous system (CNS) depression as evidenced by giddiness, headache, dizziness, and nausea. Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Because of previous repeated overexposures or a single large dose, certain individuals may develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. 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 isocyanate has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

**HEALTH HAZARDS: ACUTE:** Exposure may cause mucous membrane and respiratory tract irritation, tightness of chest, headache, shortness of breath, and a dry cough. At concentrations exceeding current occupational limits and for sensitized individuals at levels less than or greater than current occupational limits, asthma-like symptoms may occur. These symptoms may include coughing, wheezing, and shortness of breath. A hypersensitive pneumonitis may also occur if the person is sensitized. Fever, nonproductive cough, wheezing, chills, and shortness of breath characterize this syndrome. Central nervous system (CNS) depression may also result. The effects of acute exposure may be delayed in onset up to 12-24 hours. **CHRONIC:** Repeated exposure above current occupational limits may cause an allergic sensitization of the respiratory tract. This is characterized by an asthma-like response upon re-exposure to the chemical. The symptoms may include coughing, wheezing, shortness of breath and chest tightness, and may be fatal. Central nervous system (CNS) depression may also result; unconsciousness and death may occur in extreme cases.

**CARCINOGENICITY:** NTP: No

IARC Monographs: No

OSHA Regulated: No

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Cardiovascular disease, asthma or asthmatic bronchitis, emphysema, allergic disease, chronic respiratory disease, sinusitis, headache and dizziness.

**EMERGENCY AND FIRST AID PROCEDURES: EYE CONTACT:** Immediately flush eyes with plenty of water, preferably lukewarm. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel. **INHALATION:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel. **SKIN CONTACT:** Wash material off the skin thoroughly with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse. **INGESTION:** Do not induce vomiting. Give 1 or 2 glasses of milk or water to drink and refer person to medical personnel. Do not give anything by mouth to an unconscious person.

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 2.0% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data



sheets. Trained personnel familiar with the hazards of the chemicals used should perform all operations. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 15 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. Residues from spill cleanup, even when treated as described may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

**WASTE DISPOSAL METHOD:** Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of the solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away, residues may still be subject to RCRA storage and disposal requirements. Dispose off in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Keep in cool, dry, ventilated storage area, in closed containers and out of direct sunlight. Keep liquid and vapors away from heat, sparks and flame, store in containers above ground and surrounded by dikes to contain spills or leaks. Sufficient heat or pressure may ignite or detonate even liquid product in the absence of sparks or open flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition before use and until all vapors are gone. Vapors may accumulate and travel to ignition sources distant from the handling site: flash fire can result. Keep containers closed when not in use. Containers, even those that have been emptied, may contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Do not pressurize containers to empty them. Use explosion-proof lighting and equipment, non-sparking tools, clothes and shoes. Ground all structures, transfer containers and equipment to conform to the national electrical code. Use procedures that prevent static electrical sparks. Static electricity may accumulate and create a fire hazard.

**OTHER PRECAUTIONS:** Prevent skin and eye contact, observe TLV limitations. Avoid breathing vapors. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product that caused the sensitization. Air circulation and exhaustion of isocyanate vapors must be maintained until the coatings have fully cured to insure that no potential fire, explosion or health hazard remains. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This product can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposure to lower concentrations. Exposure to vapors of heated isocyanates can be extremely dangerous. Employee education and training in safe handling of this material is required under OSHA hazard communication standard. Individuals with existing respiratory disease such as chronic bronchitis, emphysema, or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

## **SECTION VIII - CONTROL MEASURES**

**VENTILATION:** If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation". Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

**RESPIRATORY PROTECTION:** If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full face piece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

**PROTECTIVE CLOTHING:** Gloves determined to be impervious under the conditions of use should be worn always when working with this product. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before wearing. Clothing constructed of butyl rubber, viton, silver shield, Saranex coated Tyvek, as well as some nitrile rubber and polyvinyl alcohol (PVA) coated garments have demonstrated excellent resistance to permeation by isocyanate. Clothing constructed of Teflon, as well as some garments constructed of nitrile rubber, natural rubber and PVA exhibited limited resistance to permeation by isocyanate. Please note that PVA degrades in water. Some clothing constructed of natural rubber or polyethylene exhibited little resistance to permeation by isocyanate. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

**EYE PROTECTION:** Chemical tight goggles and full-face shield.

**OTHER PROTECTIVE EQUIPMENT AND MEASURES:** Unhindered access to safety shower and eye wash stations. As a general hygienic practice, wash hands and face after use. Showers and cleaning of clothes are recommended. Follow all label instructions. Educate and train employees in safe use of product.

## **SECTION IX - REGULATORY INFORMATION**

**DOT PROPER SHIPPING NAME:** Not regulated.

**STATE REGULATIONS: CALIFORNIA** - As per requirements of the Safe Drinking Water & Toxic Enforcement Act of CA, USA, 1985 (Proposition 65), the public is warned that materials used in this product may create an exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. This warning is required by Section 25249.6 of the California Health and Safety Code.

**TOXIC SUBSTANCE CONTROL ACT:** All chemicals comprising this product are listed on the TSCA inventory.

**USER'S RESPONSIBILITY:** A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

**DISCLAIMER:** The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME: 911 Side-B**

## SECTION I - MANUFACTURER IDENTIFICATION

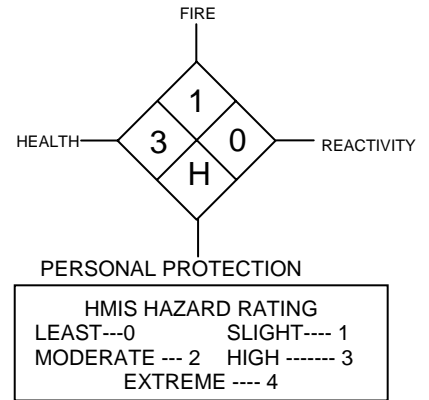
**MANUFACTURER'S NAME:** Custom Linings

**ADDRESS:** 15790 Fairway Drive, Buena Vista, Colorado 81211

**INFORMATION PHONE:** 719-395-4414

**EMERGENCY CONTACT:** 888-878-5233

**DATE REVISED:** February 2001



## SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

HAZARDOUS COMPONENTS	OCCUPATIONAL EXPOSURE LIMITS				VAPOR PRESSURE	
	CAS NUMBER	OSHA PEL	ACGIH TLV	MFG TLV	mm Hg	@ TEMP
AROMATIC AMINE	68479-98-1	N/E	N/E		0.001	20°C (68°F)
POLYOXYPROPYLENE DIAMINE	9046-10-0	N/E	N/E		.9	234.4°C(454°F)

\* No toxic chemical(s) subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372.

## SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

**BOILING POINT:** 308°C (586°F)

**SPECIFIC GRAVITY:** (H<sub>2</sub>O=1): 0.99

**COATING V.O.C.:** 0

**VAPOR DENSITY:** Heavier than air

**EVAPORATION RATE:** Slower than ether

**SOLUBILITY IN WATER:** Insoluble

**APPEARANCE AND ODOR:** Amber liquid, Ammonia-like odor.

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT:** >135°C (>275°F)

**METHOD USED:** PMCC

**FLAMMABLE LIMITS IN AIR BY VOLUME:** Lower: N/E

Upper: N/E

**EXTINGUISHING MEDIA:** Dry chemical, foam, carbon dioxide, water spray (fog).

**SPECIAL FIRE FIGHTING PROCEDURES:** Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required. Excessive pressure or temperature may cause explosive rupture of containers.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None.

## SECTION V - REACTIVITY DATA

**STABILITY:** Stable under normal conditions.

**CONDITIONS TO AVOID:** Open flame, sparks, and moisture. Contact with incompatible materials in a closed system will cause liberation of toxic vapors buildup of pressure.

**INCOMPATIBILITY (MATERIALS TO AVOID):** Strong acids and isocyanates.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Toxic levels of ammonia, combustion products of nitrogen, carbon monoxide, carbon dioxide, irritating aldehydes and ketones may be formed on burning in a limited air supply.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## **SECTION VI - HEALTH HAZARD DATA**

### **WARNING STATEMENT**

**DANGER! CORROSIVE** – CAUSES EYE AND SKIN BURNS HARMFUL OR FATAL IF SWALLOWED CAUSES RESPIRATORY TRACT IRRITATION AND CAN CAUSE DAMAGE

**SKIN CONTACT:** Causes severe irritation with pain, severe excess redness and swelling with chemical burns, blister formation, and possible tissue destruction. Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact.

**EYE CONTACT:** Causes irritation experienced as pain, with excess blinking and tear production, and as seen as extreme redness and swelling of the eye and chemical burns of the eye. Severe eye damage may cause blindness.

**SKIN ABSORPTION:** Product may be absorbed through skin and cause nausea, headache, and general discomfort.

**INHALATION:** Vapors irritate eyes, nose and respiratory passages. Severe overexposure may induce respiratory sensitization with asthma like symptoms. Symptoms include chronic cough, tightness of chest with difficulty in breathing.

**INGESTION:** Causes burning of mouth, throat, and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst, weakness, and collapse. Aspiration may occur during swallowing or vomiting, resulting in lung damage.

**HEALTH HAZARDS: ACUTE:** Exposure may cause skin and eye irritation, respiratory tract irritation. Chemical burns may result due to overexposure. Affects of exposure may be delayed. May produce temporary and reversible hazy or blurred vision. Symptoms disappear when exposure is terminated.

**CHRONIC:** Repeated skin contact may cause a persistent irritation or dermatitis. Repeated inhalation may cause lung damage.

**CARCINOGENICITY:** NTP: No                      IARC Monographs: No                      OSHA Regulated: No

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Skin contact may aggravate an existing dermatitis (skin condition). Overexposure to vapor, dust or mist may aggravate existing respiratory conditions, such as asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

**EMERGENCY AND FIRST AID PROCEDURES:** **EYE CONTACT:** Immediately flush eyes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel. **INHALATION:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel. **SKIN CONTACT:** Wash material off the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse. **INGESTION:** Do not induce vomiting. Give 1 or 2 glasses of water to drink and refer person to medical personnel. Never give anything by mouth to an unconscious person.

## **SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

**WASTE DISPOSAL METHOD:** Residues may still be subject to RCRA storage and disposal requirements. Dispose off in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool dry area. Do not expose this material to open flames, spark or other sources of ignition.

**OTHER PRECAUTIONS:** Prevent skin and eye contact, observe TLV limitations. Avoid breathing vapors. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product that caused the sensitization. Individuals with existing respiratory disease such as chronic bronchitis, emphysema, or asthma should not be exposed. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

## SECTION VIII - CONTROL MEASURES

**VENTILATION:** If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation". Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

**RESPIRATORY PROTECTION:** If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full face piece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus.

**PROTECTIVE CLOTHING:** Protective clothing such as coveralls or lab coats must be worn. Launder or dry clean when soiled. Gloves resistant to chemicals and petroleum distillates required. When handling large quantities, impervious suits, gloves, and rubber boots must be worn.

**EYE PROTECTION:** Chemical type goggles with full-face shield must be worn. Do not wear contact lenses.

**OTHER PROTECTIVE EQUIPMENT AND MEASURES:** Unhindered access to safety shower and eye wash stations. As a general hygienic practice, wash hands and face after use. Showers and cleaning of clothes are recommended.

## SECTION IX - REGULATORY INFORMATION

**DOT PROPER SHIPPING NAME:** Not regulated.

**STATE REGULATIONS: CALIFORNIA** - None.

**TOXIC SUBSTANCE CONTROL ACT:** All chemicals comprising this product are listed on the TSCA inventory.

**USER'S RESPONSIBILITY:** A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

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