MATERIAL SAFETY DATA SHEET

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Uraseal Product Code(s):

CK137 Part A	**CK137B Part A**	**CK137BS Part A**
CK200 Part A	**CK200B Part A**	**CK200BS Part A**
CK200BSV Part A	**CK200W Part A**	**CKN1225 Part A**

Section I - Product Identification

CHEMICAL NAME & SYNONYMS:
Polymeric Diphenylmethane Diisocyanate (MDI Mixture)

TRADE NAME & SYNONYMS:
RU2178

FORMULA:
Not applicable to mixtures

CAS Number: **101-68-8**

CHEMICAL FAMILY:
Aromatic Isocyanate

Section II - Composition / Information on Ingredients

Hazardous Components

Weight %	Components	CAS-No.
51.0%	Diphenylmethane4,4'diisocyante (MDI)	101-68-8
<35.0%	Polymeric Diphenylmethane (P-MDI)	9016-87-9
<10.0%	MDI Mixed Isomers	26447-40-5
<3.0%	Modified MDI	

Section III - Hazards Identification

Emergency Overview

WARNING! **Color:** Dark amber **Form:** Liquid **Odor:** Faint odor, aromatic
Contains Diphenalmethane Diisocyanate (CAS No. 101-68-8). Inhalation of MDI mists or vapor may cause respiratory irritation, breathlessness, chest discomfort and reduced pulmonary function. Overexposure well above the PEL may result in bronchitis, broncial spasms and pulmonary edema. Long-term exposure to isocyanates has been reported to cause lung damage, including reduced lung function which may be permanent. Acute or chronic overexposure to isocyanates may cause sensitization in some individuals, resulting in allergic respiratory reactions including wheezing, shortness of breath and difficulty breathing.

NOTE: *This Material Safety Data Sheet is for a single component of a two part urethane kit. The hazards and warnings associated with this MSDS are for this chemical and not the reacted kit. Once the kit has been reacted the resultant product is a non-hazardous material.*

Potential Health Effects

Primary Routes of Exposure: Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Medical Conditions Aggravated by Exposure: Asthma, Respiratory disorders, Skin Allergies, Eczema

REPEATED DOSE TOXICITY

Information on MDI
Diisocyanate vapors or mist at concentrations above the TLV or PEL 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). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

Chronic Inhalation
As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. 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. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

Skin
Acute Skin
Causes irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration.

Chronic Skin
Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests on MDI indicate skin contact alone may lead to an allergic respiratory reaction.

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

Chronic Eye
Prolonged vapor contact may cause conjunctivitis.

Ingestion
Acute Ingestion
May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

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

Section IV - First Aid Measures

If this product is used in accordance with the directions and recommendations on the package labeling and this Material Safety Data Sheet, chance of exposure to any chemical in this kit is virtually eliminated. First aid measures are provided as a reference in the event of intentional misuse or unforeseeable event.

Eye Contact
Flush with water while occasionally lifting eyelids and obtain medical attention.

Skin Contact
Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Use lukewarm water if possible. Wash contaminated clothing before reuse. Get medical attention if irritation develops.

Inhalation
Move to an area free from risk of further exposure. 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. Extreme asthmatic reactions can be life threatening.

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

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.

Medical supervision of all employees who handle or come in contact with polymeric MDI is recommended. This should include preplacement and periodic medical examinations with respiratory function tests (FEV, EVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with MDI. Once a person is diagnosed as sensitized to MDI no further exposure can be permitted.

Section V - Fire-Fighting Measures

Suitable Extinguishing Media: Dry chemical, carbon dioxide (CO2), foam, water spray for large fires.

Special Fire Fighting Procedures
Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

Unusual Fire/Explosion Hazards
Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO2 formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

Section VI - Accidental Release Measures

Spill and Leak Procedures
Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solution. Respiratory protection is recommended during spill clean up.

Additional Spill Procedures/Neutralization
Neutralization solutions:
(1) Colorimetric Laboratories Inc. (CLI) decontamination solution.
(2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Poly-Tergent SL-62, Tergitol TMN-10) and 5% n-propanol.
(3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Poly-Tergent SL-62, Tergitol TMN-10).
(4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

Section VII - Handling and Storage

Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

Handling/Storage Precautions
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.

Other precautions
Avoid contact with skin and eyes. Keep away from food. Do not breath vapors. Follow all container label instructions.

Further Information on Storage Conditions
Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Section VIII - Exposure Controls / Personal Protection

4,4'-Diphenylmethane Diisocyanate (MDI) (101-68-8)
US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 0.005 ppm
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Ceiling Limit Value: 0.02 ppm, 0.2 mg/m3

Hand Protection
Gloves should be worn., Nitrile rubber showed excellent resistance., Butyl rubber, neoprene and PVC are also effective.

Eye Protection Use splash-proof chemical resistant goggles.

Skin and body protection
Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact.

Respiratory protection Use an air-supplied respirator for levels equal to or above the PEL.

Ventilation Local exhaust should be used if needed to maintain levels below the PEL.

Other protective measures
Educate and train employees in safe use of product and personal protective equipment. Follow all label instructions and cautions.

Other hygienic and good work practices
Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing and wash it thoroughly before reuse. Shower after work using plenty of soap and water.

Section IX - Physical and Chemical Properties

Form:	Liquid
Color:	Dark amber
Odor:	faint odor, aromatic
pH:	Not Applicable
Freezing Point:	< 0 °C (< 32 °F) For the active ingredient.
Boiling Point/Range:	Approximately 200 °C (392 °F)
Flash Point:	190 °C (374 °F) (COC)
Vapor Pressure:	< 0.0003 mmHg @ 25 °C (77 °F)
Solubility in Water:	Insoluble - Reacts slowly with water to liberate CO2 gas
Density:	1.22 G/CM @ 25 °C

Section X - Stability and Reactivity

Hazardous Reactions
Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization.

Materials to avoid
Water, Amines, Strong bases, Alcohols, copper alloys

Hazardous decomposition products
By Fire and High Heat: hydrogen cyanide; Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke, Isocyanate, Isocyanic Acid, Other undetermined compounds

Section XI - Toxicological Information

Toxicity Data for MDI

Toxicity Note	Toxicity data based on polymeric MDI.
Acute Oral Toxicity	LD50: > 2,000 mg/kg (rat, Male/Female)
Acute Inhalation Toxicity	LC50: 490 mg/m3, vapor, 4 h (rat)
Skin Irritation	rabbit, Slightly irritating

Repeated Dose Toxicity
90 Days, inhalation: NOAEL: 1 mg/m3, (rat, Male/Female, 6 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.
2 years, inhalation: NOAEL: 0.2 mg/m3, (rat, Male/Female, 6 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.

Mutagenicity
Genetic Toxicity in Vitro:
Bacterial - gene mutation assay: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity
rat, Male/Female, inhalation, 2 Years, 6 hrs/day 5 days/week
Exposure to a level of 6 mg/m3 polymeric MDI was related to the occurrence of lung tumors. This level is significantly over the TLV for MDI.

Developmental Toxicity/Teratogenicity
rat, female, inhalation, gestation days 6-15, 6 hrs/day, NOAEL (teratogenicity): 12 mg/m3, NOAEL (maternal): 4 mg/m3
No Teratogenic effects observed at doses tested. Fetotoxicity seen only with maternal toxicity.

Section XII - Ecological Information

Ecological Data for MDI

Biodegradation	0 %, Exposure time: 28 Days
Bioaccumulation	Rainbow trout, Exposure time: 112 d, < 1 BCF Does not bioaccumulate.
Acute and Prolonged Toxicity to Fish	LC0: > 1,000 mg/l (Zebra fish (Brachydanio rerio), 96 hrs) LC0: > 3,000 mg/l (Killifish (Oryzias latipes), 96 h)
Acute Toxicity to Aquatic Invertebrates	EC50: > 1,000 mg/l (Water flea (Daphnia magna), 24 hrs)

Toxicity to Aquatic Plants
NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 hrs)

Toxicity to Microorganisms	EC50: > 100 mg/l, (Activated sludge microorganisms, 3 hrs)
Additional Ecotoxicological Remarks	Ecotoxicity data based on polymeric MDI

Section XIII - 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 Container Precautions
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 XIV - Transportation Information

Land transport (DOT)

Proper Shipping Name:	Other regulated substances, liquid, n.o.s. (contains 4,4'-Diphenylmethane Diisocyanate (MDI))
Hazard Class or Division:	9
UN/NA Number:	NA3082
Packaging Group:	III
Hazard Label(s):	Class 9

RSPA/DOT Regulated Components:
4,4'-Diphenylmethane Diisocyanate (MDI)

Reportable Quantity: 14,285 lb

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

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

Section XV - Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating:	Hazardous
US. Toxic Substances Control Act:	Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components	
4,4'-Diphenylmethane Diisocyanate (MDI)	Reportable quantity: 5,000 lbs

SARA Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):
Components: None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:
Components
Polymeric Diphenylmethane Diisocyanate (pMDI)
4,4'-Diphenylmethane Diisocyanate (MDI)

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):
If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

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

This product may contain trace (ppm) amount of phenyl isocyanate (CAS# 103-71-9) and monochlorobenzene (CAS# 108-90-7) as impurities.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

Weight %	Components	CAS-No.
51.0%	Diphenylmethane-4,4'-diisocyante (MDI)	101-68-8
<35.0%	Polymeric Diphenylmethane (P-MDI)	9016-87-9
<10.0%	MDI Mixed Isomers	26447-40-5
<3.0%	Modified MDI	

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

Weight %	Components	CAS-No.
51.0%	Diphenylmethane-4,4'-diisocyante (MDI)	101-68-8
<35.0%	Polymeric Diphenylmethane (P-MDI)	9016-87-9

California Prop. 65:
To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

Section XVI - Other Information

HMIS Rating

Health	2*
Flammability	1
Physical Hazard	1

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

NFPA 704M Rating

Health	2
Flammability	1
Reactivity	1
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

The information and recommendations contained herein are based upon data believed to be correct. However, since much of the information has been received from sources outside our company, we cannot guarantee its accuracy or completeness. Health and safety precautions contained within this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this data in order to comply with all applicable laws and regulations. Additionally, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

N.A. = Not Applicable ***N.E. = Not Established***

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Uraseal Product Code(s):			
	CK137 Part B	**CK137B Part B**	**CK137BS Part B**
	CK200 Part B	**CK200B Part B**	**CK200BS Part B**
	CK200BSV Part B	**CK200W Part B**	**CKN1225 Part B**

Section I - Product Identification

CHEMICAL NAME & SYNONYMS:
Proprietary Polyol Blend

TRADE NAME & SYNONYMS:
EB0126BZ

FORMULA:
Not applicable to mixtures

CAS Number:
Not applicable to mixtures

CHEMICAL FAMILY:
Polyol Compounds

Section II - Composition / Information on Ingredients

This product contains no ingredients at or greater than 1% that are considered hazardous by OSHA and no ingredients at or greater than 0.1% that are considered carcinogens by any regulatory agency.

Section III - Hazards Identification

Emergency Overview

WARNING! **Color:** Yellow **Form:** Liquid **Odor:** Castor oil

NOTE: *This Material Safety Data Sheet is for a single component of a two part urethane kit. The hazards and warnings associated with this MSDS are for this chemical and not the reacted kit. Once the kit has been reacted the resultant product is a non-hazardous material.*

Section IV - First Aid Measures

If this product is used in accordance with the directions and recommendations on the package labeling and this Material Safety Data Sheet, chance of exposure to any chemical in this kit is virtually eliminated. First aid measures are provided as a reference in the event of intentional misuse or unforeseeable event.

Eye Contact
Flush with water while occasionally lifting eyelids and obtain medical attention.

Skin Contact
Wash thoroughly with soap and water.

Inhalation
Remove to fresh air.

Ingestion
Seek medical attention.

N.A. = Not Applicable ***N.E. = Not Established***

Section V - Fire-Fighting Measures

Suitable Extinguishing Media
Water spray, dry chemical, foam or carbon dioxide

Special Fire Fighting Procedures
None established

Unusual Fire/Explosion Hazards
None established

Section VI - Accidental Release Measures

Spill and Leak Procedures
Clean up spills with absorbent materials. Dispose of as per "Section XIII - Disposal Considerations"

Section VII - Handling and Storage

Handling/Storage Precautions
None established

Other precautions
Follow all container label instructions.

Section VIII - Exposure Controls / Personal Protection

Hand Protection	Permeation resistant gloves.
Eye Protection	Use splash-proof chemical resistant goggles.
Respiratory protection	N.E.
Ventilation	General

Other protective measures
Educate and train employees in safe use of product and personal protective equipment. Follow all label instructions and cautions.

Other hygienic and good work practices
Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing and wash it thoroughly before reuse. Shower after work using plenty of soap and water.

Section IX - Physical and Chemical Properties

Form:	Liquid
Color:	Yellow
Odor:	Castor oil odor
Boiling Point/Range:	Not established
Flash Point:	> 300^{o} F (COC)
Vapor Pressure:	Not established
Specific Gravity:	1.0
Solubility in Water:	Not established

Section X - Stability and Reactivity

Stability
Stable

Hazardous Reactions
Not established

Materials to avoid
Not established

Hazardous decomposition products
Not established

Hazardous Polymerization
Will not occur

Section XI - Toxicological Information

Toxicity Data for EB0126BZ

Acute Oral Toxicity	Not established
Acute Inhalation Toxicity	Not established
Skin Irritation	Not established
Repeated Dose Toxicity	Not established

Mutagenicity Not established

Carcinogenicity No known ingredients are OSHA listed as known carcinogens

Developmental Toxicity/Teratogenicity Not established

Section XII - Ecological Information

Ecological Data for EB0126BZ

Biodegradation	Not established
Bioaccumulation	Not established
Acute and Prolonged Toxicity to Fish	Not established
Acute Toxicity to Aquatic Invertebrates	Not established
Toxicity to Aquatic Plants	Not established
Toxicity to Microorganisms	Not established
Additional Ecotoxicological Remarks	Not established

Section XIII - 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 Container Precautions
None established

Section XIV - Transportation Information

Land transport (DOT)
Not regulated

RSPA/DOT Regulated Components:
None known

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

Additional Transportation Information
None known

Section XV - Regulatory Information

TSCA Status
All ingredients for this material are listed on the TSCA Inventory or are exempt from listing.

Section XVI - Other Information

HMIS Rating

Health	1
Flammability	1
Reactivity	0

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

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