

# SAFETY DATA SHEET



Date Prepared 8/6/2013  
Date Revised 5/29/2015

## CRACK FILLER PART A

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** CRACK FILLER PART A  
**PRODUCT FAMILY:** AROMATIC ISOCYANATE  
**PRODUCT USE(S):** POLYURETHANE INDUSTRIAL COATING  
**RESTRICTIONS ON USE(S):** NO DATA AVAILABLE

**MANUFACTURER**  
MIRABEL COATINGS, INC.  
11803 N SAGUARO BLVD #14  
FOUNTAIN HILLS, AZ 85268  
480-837-5333

**24 HR. EMERGENCY CONTACT NUMBERS**  
MIRABEL COATINGS: 480-837-5333

### 2. HAZARDS IDENTIFICATION

#### GHS CLASSIFICATION

Acute toxicity (inhalation):	Category 4
Specific target organ toxicity - single exposure:	Category 3 (Respiratory system)
Respiratory sensitisation:	Category 1
Specific target organ toxicity - repeated exposure:	Category 1 (Respiratory Tract)
Skin irritation:	Category 2
Skin sensitisation:	Category 1
Eye irritation:	Category 2B
Carcinogenicity:	Category 2

#### GHS LABEL ELEMENTS

##### HAZARD PICTOGRAMS:



##### SIGNAL WORD:

DANGER

##### HAZARD STATEMENTS:

Harmful if inhaled.  
May cause respiratory irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Causes damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Causes skin irritation.  
May cause an allergic skin reaction.  
Causes eye irritation.  
Suspected of causing cancer.  
May be fatal if swallowed and enters airways.

### PRECAUTIONARY STATEMENTS

#### Prevention:

Avoid breathing dust, mist, gas, vapors or spray.  
Do not eat, drink or smoke when using this product.  
Wash skin and face thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing must not be allowed out of the workplace.  
Wear protective gloves.  
In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards. For additional details, see section 8 of the SDS.

#### Response:

Get medical attention if you feel unwell.  
IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical attention.  
Wash contaminated clothing before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical attention.  
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.  
If experiencing respiratory symptoms: Call a doctor or emergency medical facility (i.e. 911)  
IF INGESTED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

#### Storage:

Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.

#### Disposal:

Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### Hazardous Components

Weight Percent	Components	CAS No.	Classification
20-45%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	Acute toxicity Category 4 Inhalation. Skin irritation Category 2.

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(same as prev. page)	(same as prev. page)	(same as prev. page)	Eye irritation Category 2B. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 1 Respiratory Tract.
5-30%	Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5	Acute toxicity Category 4 Inhalation. Skin irritation Category 2. Eye irritation Category 2B. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 1 Respiratory Tract.
5-30%	Aromatic Hydrocarbons	Trade Secret	

The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.

#### 4. FIRST AID MEASURES

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention, if irritation develops.

**SKIN:** Flush skin with water while removing contaminated clothing. Wash off with soap and water. If irritation occurs, get medical attention. Do not reuse clothing or shoes until cleaned.

**INGESTION:** Do NOT induce vomiting unless directed to do so by medical personnel. Wash mouth out with water. Call a physician immediately. Never give anything by mouth to an unconscious person.

**INHALATION:** If inhaled, remove to fresh air. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

#### MOST IMPORTANT SYMPTOM(S)/EFFECT(S)

**ACUTE:** Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

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

May cause eye 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.

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

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

## NOTES TO PHYSICIAN

**EYES:** Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision.

**SKIN:** This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.

**INGESTION:** Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Product can also be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

**INHALATION:** Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

## 5. FIREFIGHTING MEASURES

**SUITABLE EXTINGUISHING MEDIA:** Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam, water spray for large fires.

**UNSUITABLE EXTINGUISHING MEDIA:** High volume water jet

### FIRE FIGHTING PROCEDURE

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

### HAZARDOUS DECOMPOSITION PRODUCTS

By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), Nitrogen oxides (NO<sub>x</sub>), dense black smoke., Isocyanate, Isocyanic Acid, Other undetermined organic compounds.

### UNUSUAL FIRE/EXPLOSION HAZARDS

Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Closed containers may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> formed). Use cold-water spray to cool fire-exposed containers to minimize 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.

## 6. ACCIDENTAL RELEASE MEASURES

### SPILL AND LEAK PROCEDURES

Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation

depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area, Keep material out of storm sewers and ditches which lead to waterways, and prevent access of unauthorized personnel. Notify management. Call Mirabel Coatings, Inc. 480-837-5333 for assistance and advice.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material (e.g. vermiculite, kitty litter, Oil-Dri®, etc...) Allow for the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface.

Decontaminate the spill surface are using a neutralization solution (see list of solutions on on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Check for residual surface contaminatin using Swype® test kits, available from Colorimetric Laboratories, Inc. (CLI) at 847-803-3737. If the Swype® test pad demonstrates that isocyanate remains on the surface (red color on the pad), repeat applications of neutralization solution, with scrubbing, followed by absorbent until the surface is decontaminated (no color change on Swype® pad). Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralizing process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

#### **ADDITIONAL SPILL PROCEDURES/NEUTRALIZATION**

Products or product mixtures that have been shown to be effective neutralization solutions for decontaminating surfaces, tools, or equipment thath ave been in contact with an isocyanate includes:

Products available through industrial suppliers:

Spartan Chemical Company: 1-800-537-8990

- Spartan® ShineLine Emulsifier Plus
- Spartan® SC-200 Heavy duty Cleaner

Calorimetric Laboratories, Inc. (CLI): 1-847-803-3737

- Isocyanate Decontamination Solution

Mix equal amounts of the following:

- Mineral spirits (80%), VM&P Naphtha (15%), and household detergent (5%), and
- A 50-50 mixture of monoethanolamine and water

In a separate container, blend the two solutions in a 1:1 ratio by volume. Immediately prior to applying this blended neutralization solution onto the contaminated surface area, mix or agitate the container to help ensure uniform mixing of the ingredients.

If the above products are not available, the following products can be obtained through retail outlets:

- ZEP® Commercial Heavy-Duty Floor Stripper
- Greased Lightning® Super Strength Cleaner and Degreaser
- EASY OFF® Grill and Oven Cleaner or EASY OFF® Fume Free Oven Cleaner
- A mixture of 50% Simple Green® Pro HD Heavy-Duty Cleaner and 50% household ammonia
- A mixture of 90% Fantastic® Heavy Duty All Purpose Cleaner and 10% household ammonia

Note: Always wear proper PPE when cleaning up an isocyanate spill and using a neutralization solution. It may take two or more applications of the neutralization solution to decontaminate the surface. Check for residual surface contamination using a surface wipe method such as the CLI Swype® pad.

## 7. HANDLING AND STORAGE

### 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 exposure to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

### STORAGE PERIOD:

6 Months @ 25°C (77°F) after receipt of material by customer

Min Temperature: 10°C (50°F)

Max Temperature: 30°C (86°F)

### STORAGE CONDITIONS:

Store separate from food products.

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.

### SUBSTANCES TO AVOID:

Water, Amines, Strong bases, Alcohols, Copper alloys

## 8. 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/m<sup>3</sup>

### AROMATIC HYDROCARBONS / NAPHTHALENE

US, ACGIH Threshold Limit Values

Time Weighted Average (TWA): 10 ppm 8 hours

US, OSHA Permissible Exposure Limits

Ceiling Limit Value: 10 ppm 8 hours  
50 mg/m<sup>3</sup> 8 hours

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH, TLV, OSHA PEL or supplier recommended occupational exposure limit.

## **ENGINEERING CONTROLS:**

Provide exhaust ventilation sufficient to keep the airborne concentrations of this product below its exposure limits. If ventilation is not feasible the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne MDI.

## **PERSONAL PROTECTIVE EQUIPMENT**

### **RESPIRATORY**

Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respiratory such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or (b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

### **HAND PROTECTION**

Permeation resistant gloves, Viton gloves, 4H laminate gloves, Butyl rubber gloves, Nitrile rubber gloves.

### **EYE PROTECTION**

Chemical safety goggles or safety glasses with side-shields., Chemical safety goggles in combination with a full face shield if a splash hazard exists.

### **SKIN 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. Where spray mist/vapor is anticipated, permeation resistant clothing is recommended. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction.

### **ADDITIONAL PROTECTIVE MEASURES**

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

### **WORK HYGIENE PRACTICES**

Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

### **COMMENTS**

May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

## MEDICAL SURVEILLANCE

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to an isocyanate, no further exposure can be permitted.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>PHYSICAL STATE:</b>	Liquid
<b>ODOR:</b>	Musty
<b>APPEARANCE:</b>	Yellow
<b>pH:</b>	No Data Available
<b>BOILING POINT:</b>	199°C (390.2°F) Estimated based on components
<b>FLASH POINT:</b>	150°C (302°F) Estimated based on components
<b>MELTING POINT:</b>	No Data Available
<b>EVAPORATION RATE:</b>	No Data Available
<b>LOWER EXPLOSION LIMIT:</b>	No Data Available
<b>UPPER EXPLOSION LIMIT:</b>	No Data Available
<b>VAPOR PRESSURE:</b>	approx. <0.0001 mmHg @ 25°C (77°F)
<b>VAPOR DENSITY:</b>	No Data Available
<b>RELATIVE VAPOR DENSITY:</b>	No Data Available
<b>SPECIFIC GRAVITY:</b>	approx. 1.08 @ 25°C (77°F)
<b>SOLUBILITY IN WATER:</b>	Insoluble
<b>AUTO-IGNITION TEMPERATURE:</b>	No Data Available
<b>DECOMPOSITION TEMPERATURE:</b>	Not established
<b>VISCOSITY:</b>	No Data Available
<b>MOLECULAR WEIGHT:</b>	No Data Available
<b>POUR POINT:</b>	No Data Available
<b>VOC:</b>	No Data Available

## 10. STABILITY AND REACTIVITY

### HAZARDOUS REACTIONS

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

### STABILITY

Stable under normal conditions of use and storage.

### MATERIALS TO AVOID

Water, Amines, Strong bases, Alcohols, Copper alloys

### CONDITIONS TO AVOID

Avoid all possible sources of ignition (spark or flame).



## HAZARDOUS DECOMPOSITION PRODUCTS

By Fire and Thermal Decomposition: Carbon oxides, Nitrogen oxides (Nox), dense black smoke., Isocyanate, Isocyanic Acid, Other undetermined organic compounds.

## 11. TOXICOLOGICAL INFORMATION

**LIKELY ROUTES OF EXPOSURE:** Skin Contact  
Eye Contact  
Inhalation

### HEALTH EFFECTS AND SYMPTOMS

#### ACUTE

Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below limits or guidelines with smaller symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

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

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

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

#### CHRONIC

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the exposure limits or guidelines. 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 isocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

Prolonged contact with skin can cause reddening, swelling, rash, and in some cases, skin sensitization. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

Prolonged vapor contact with the eyes may cause conjunctivitis.

## **TOXICITY DATA FOR 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI)**

### **TOXICITY NOTE**

Date is based on similar products.

### **ACUTE ORAL TOXICITY**

LD50: > 7616 mg/kg (rat) (OECD Test Guideline 401)

Studies of a comparable product.

### **ACUTE INHALATION TOXICITY**

LC50: 0.368 mg/l, 4h (rat, male) (OECD Test Guideline 403)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

### **ACUTE DERMAL TOXICITY**

LD50: >9400 mg/kg (rabbit, male/female) (OECD Test Guideline 402)

Studies of a comparable product.

### **SKIN IRRITATION**

Rabbit, Draize Test, Slightly Irritating

### **EYE IRRITATION**

Rabbit, Draize, Moderately Irritating

Human, Irritating

### **SENSITIZATION**

Skin sensitization (local lymph node assay (LLNA):: positive (mouse, OECD Test Guideline 429)

Respiratory sensitization: positive (guinea pig)

### **REPEATED DOSE TOXICITY**

90 Days, inhalation: NOAEL: 0.3 mg/m<sup>3</sup>, (rat, male/female, 18hrs/day, 5days/week)

Irritating to lungs and nasal cavity

(Human)

Irritation to lungs and nasal cavity.

### **MUTAGENICITY**

Genetic Toxicity in Vitro:

Ames: (Salmonella typhimurium, Metabolic Activation: with/without)

Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive mutagenicity results

Genetic Toxicity in Vivo:

Micronucleus Assay: (mouse)

negative

Micronucleus test: negative (rat, male, inhalative (exposure period: 3x1h/day over 3 weeks))

negative

**Carcinogenicity:**

Rat, Female, inhalation, 2 years, 17hrs/day, 5 days/week, negative

**TOXICITY DATA FOR DIPHENYLMETHANE DIISOCYANATE (MDI) MIXED ISOMERS****TOXICITY NOTE**

See data above for polymeric MDI.

**TOXICITY DATA FOR AROMATIC HYDROCARBONS****TOXICITY TO REPRODUCTION/FERTILITY**

No known significant effects or critical hazards.

**DEVELOPMENTAL TOXICITY/TERATOGENICITY**

No known significant effects or critical hazards.

Suspected of causing cancer. Risk of cancer depends on duration and level of exposure. No known significant effects or critical hazards.

**OTHER INFORMATION**

Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

Possible cancer hazard, based on skin-painting studies using laboratory animals, involving continuous, long-term contact.

Regular periodic self-inspection of the skin is recommended, especially those areas subject to contamination. In the event of any localized changes in appearance or texture of the skin being noticed, medical advice should be sought without delay.

Napthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of napthalene can result in hemolysis and other blood abnormalities, and individuals (an infants) deficient in glucos-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of napthalene may cause headaches and nausea. Airborne exposure can result in eye irritation. Napthalene exposure has been associated with cataracts in animals and humans.

**12. ECOLOGICAL INFORMATION**

No data available for this product.

Please find the data for a similar product below.

**ECOLOGICAL DATA FOR 4,4'-DIPHENYLMETHANE-DIISOCYANATE (MDI)****BIODEGRADATION**

0%, Exposure time: 28 d, i.e. not readily degradable

Ecotoxicological reports on a comparable product

**BIOACCUMULATION**

Oncorhynchus mykiss (rainbow trout), Exposure time: 112 d, < 1BCF

Does not bioaccumulate

**ACUTE AND PROLONGED TOXICITY TO FISH**

LC0: > 1,000 mg/l (Danio rerio (zebra fish), 96 h)

LC0: > 3,000 mg/l (Oryzias latipes (Orange-red killifish), 96 h)

#### ACUTE TOXICITY TO AQUATIC INVERTEBRATES

EC50: > 1,000 mg/l (Daphnia magna (Water flea), 24h)

Studies of a comparable product

#### TOXICITY TO AQUATIC PLANTS

NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72h)

Ecotoxicological reports on a comparable product

#### TOXICITY TO MICROORGANISMS

EC50: > 100 mg/l, (activated sludge, 3h)

Ecotoxicological reports on a comparable product

#### ECOLOGICAL DATA FOR DIPHENYLMETHANE DIISOCYANATE (MDI) MIXED ISOMERS

##### ADDITIONAL ECOTOXICOLOGICAL REMARKS

See data above for polymeric MDI.

#### ECOLOGICAL DATA FOR 4,4'-DIPHENYLMETHANE-DIISOCYANATE (MDI)

No testing has been performed by the manufacturer.

### 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. Do not dump into sewers, ground, or any body of water.

#### EMPTY CONTAINER PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN! 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.

#### RCRA/EPA WASTE INFORMATION

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

### 14. TRANSPORT INFORMATION

#### LAND TRANSPORT (DOT)

<b>PROPER SHIPPING NAME:</b>	Polyurethane Crack Filler Part A
<b>HAZARD CLASS OR DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	NA3082
<b>PACKAGING GROUP:</b>	III
<b>HAZARD LABEL(S):</b>	Class 9
<b>ENVIRONMENTAL HAZARDS:</b>	Yes



**RSPA/DOT REGULATED COMPONENTS:**

4,4' Diphenylmethane Diisocyanate (MDI)  
Naphthalene

**REPORTABLE QUANTITY:** 226 kg (500 lb) (Based on least RQ % of product in this mixture)

**SEA TRANSPORT (IMDG):** See Additional Transportation Information (Below)

**ADDITIONAL TRANSPORTATION INFORMATION**

Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of <=25L or <=25 kg.

The product is not regulated as a dangerous good when transported by road or rail.

The marine pollutant mark is not required when transported in sizes of <=25L or <=25kg (based on % of least RQ in mixture).

Passenger and Cargo Aircraft: Quantity limitation: 1800 L - Packaging Instructions: 964

Limited Quantities Passenger Aircraft: Quantity limitation: 100kg - Packaging instructions: Y964.

**15. REGULATORY INFORMATION****UNITED STATES FEDERAL REGULATIONS****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: 5000 lbs

**SARA SECTION 311/312 HAZARD CATEGORIES:**

Acute Health Hazard

Chronic (Delayed) 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 EXTREMELY HAZARDOUS SUBSTANCE (40 CFR 372.65) - SUPPLIER NOTIFICATION REQUIRED COMPONENTS:**

4,4'-Diphenylmethane Diisocyanate (MDI)

Naphthalene

**US. EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPOSITE LIST OF HAZARDOUS WASTES AND APPENDIX VIII HAZARDOUS CONSTITUENTS (40 CFR 261):**

Under the RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste. If discarded in purchased form this product is ignitable, hazardous waste.

## 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 SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

### MASSACHUSETTS, NEW JERSEY OR PENNSYLVANIA RIGHT TO KNOW SUBSTANCE LISTS:

<u>WEIGHT PERCENT</u>	<u>COMPONENTS</u>	<u>CAS-NO.</u>
<= 20-40%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
<=5-30%	Napthalene	91-20-3

### CALIFORNIA PROP. 65:

This product contains a chemical known to the State of California to cause cancer: Napthlane; ethylbenzene.

Based on information provided by our suppliers, this product is considered "DRC Conflict free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 08-22-2012).

## 16. OTHER INFORMATION

The method of hazard communication for Mirabel Coatings, Inc. is comprised of Product Labels and Safety Data Sheets (SDS).

The handling of products containing reactive HDI polyisocyanate/prepolymer and/or monomeric HDI requires appropriate protective measures referred to in this SDS. These products are therefore recommended only for use in industrial or trade (commerical) applications. They are not suitable for use in Do-It-Yourself applications.

### NFPA CODES:



**DATE REVISED:** 5/29/2015

**REVISION SUMMARY:** Conforming to the Globally Harmonized System SDS guidelines.

### MANUFACTURER DISCLAIMER:

The information contained herein is based on the data available to us and is believed to be accurate. However, Mirabel Coatings, Inc. makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. The information in this SDS relates only to the specific material designated herein. Mirabel Coatings, Inc. assumes no legal responsibility for use of or reliance upon the information in this SDS, nor for injuries from the use of the product described herein.