

**1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER**

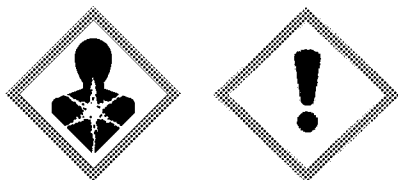
<b>PRODUCT IDENTIFIER:</b>	MILLIONATE MR-200
<b>MANUFACTURER / IMPORTER:</b>	TOSOH SPECIALTY CHEMICALS USA, Inc.
<b>ADDRESS:</b>	1720 Windward Concourse, Suite 125 Alpharetta, Georgia 30005
<b>PHONE:</b>	1-866-688-9501
<b>EMERGENCY PHONE:</b>	CHEMTREC 1-800-424-9300 OR 1-703-527-3887
<b>RECOMMENDED USE:</b>	General industrial products

**2. HAZARDS IDENTIFICATION**

**GHS CLASSIFICATION**

Acute toxicity	
Acute toxicity (inhalation: dust, mist)	Category 4
Skin corrosion/irritation	Category 2
Eye damage/eye irritation	Category 2B
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity – single exposure	Category 3

**HAZARD SYMBOL:**



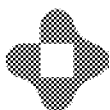
**SIGNAL WORD:**

**DANGER**

**HAZARD STATEMENTS:**

Harmful if inhaled.  
 Causes skin irritation.  
 Causes eye irritation.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause an allergic skin reaction.  
 May cause respiratory irritation.

**2. HAZARDS IDENTIFICATION (continued)**



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## PREVENTION:

Avoid breathing dust/fume/gas/mist/vapors/spray.  
 Use only outdoors or in a well-ventilated area.  
 Wash thoroughly after handling.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 In case of inadequate ventilation, wear respiratory protection.  
 Contaminated clothing must not be allowed out of the workplace.  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.

## RESPONSE:

If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms, get medical advice/attention.  
 Call a poison control center/doctor if you feel unwell.  
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 advice/attention.  
If on skin (or hair): Wash with plenty of water.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 Take off contaminated clothing and wash it before reuse.  
 If exposed or concerned: Get medical advice/attention.

## STORAGE:

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

## DISPOSAL:

Dispose of contents/container in accordance with Federal and state regulations.

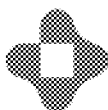
### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>OSHA Hazardous(Y/N)</u>	<u>Concentration (%)</u>
Polymethylene polyphenyl polyisocyanate	9016-87-9	Y	100
(includes 4,4'-diphenylmethane diisocyanate (4,4'-MDI),	CAS # 101-68-8)		> 40

### 4. FIRST AID MEASURES

SAFETY DATA SHEET: MILLIONATE MR-200 – US-GHS Version

Date Prepared: May 29, 2015 Supercedes: None (Page 2 of 10)



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**EYE CONTACT:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention if irritation develops or persists.

**SKIN CONTACT:**

Remove contaminated clothing and shoes. Wash with plenty of water, for at least 15 minutes. Seek medical attention if irritation develops or persists. Launder contaminated clothing and shoes before re-use.

**INGESTION:**

Do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended.

**INHALATION:**

If respiratory irritation or distress occurs, remove victim to fresh air. Seek immediate medical attention.

**NOTES TO PHYSICIAN:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

## **5. FIRE FIGHTING MEASURES**

**EXTINGUISHING MEDIA:**

Water spray, fog, dry chemical, foam, CO<sub>2</sub>

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Closed containers may rupture due to buildup of pressure when exposed to extreme heat. Cool containers exposed to fire with water. After the fire is extinguished, neutralize the spilled material with decontaminant. Keep the area clear. Clean up residual material by washing area with water. Collect washings for disposal.

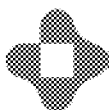
**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:**

Firefighters should wear NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

**HAZARDOUS DECOMPOSITION**

**MATERIALS UNDER FIRE CONDITIONS:** Oxides of carbon, hydrogen cyanide.

## **6. ACCIDENTAL RELEASE MEASURES**



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## PERSONAL PRECAUTIONS:

Evacuate area. Wear appropriate protective gear for the situation. (See Personal Protection Information in Section 8).

## ENVIRONMENTAL PRECAUTIONS:

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

## METHOD FOR CLEAN UP:

(Small spill) Spray with a neutralizing agent to neutralize. Absorb with an inert absorbant. Dispose of absorbant and rags, waste paper, etc., remove and store in a container with a lid. (Large spill) Dike spill to contain it. Recover as much spill material as possible. Spray with a neutralizing agent to neutralize. Absorb with an inert absorbant. Clean up residual material by washing area with water. Collect washings for disposal. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

## 7. HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING:

Handle material with suitable protection (See Section 8). Handle with adequate ventilation. Avoid breathing vapors. Avoid contact with eyes, skin and clothing.

### VENTILATION:

General area dilution/exhaust ventilation.

### CONDITIONS FOR SAFE STORAGE:

Store upright in a cool, dry, well ventilated area out of direct sunlight. Keep away from heat, open flames and ignition sources. Keep container tightly closed. Do not reuse container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### ENGINEERING MEASURES:

Set up hand-wash station and eyewash station near work area.  
General area dilution/exhaust ventilation.

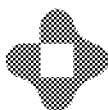
### EXPOSURE LIMITS:

4,4'-Diphenylmethane diisocyanate

0.005 ppm – ACGIH TWA

4,4'-Diphenylmethane diisocyanate

0.02 ppm – OSHA Ceiling Limit



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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

### **PERSONAL PROTECTION MEASURES:**

#### **Respiratory protection:**

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with regulatory standards and/or industrial recommendations. Self-contained or supplied-air respiratory equipment is recommended.

#### **Eye protection:**

Safety glasses with side shields, goggles or face shield are recommended.

#### **Skin protection:**

Skin contact should be minimized through the use of chemical-resistant gloves and boots, and suitable protective clothing.

The following general measures should be taken when working or handling this material:

- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

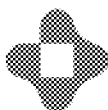
## **9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>PHYSICAL STATE:</b>	Liquid
<b>COLOR:</b>	Yellowish-brown
<b>ODOR:</b>	Nearly odorless
<b>pH:</b>	No data available
<b>MELTING POINT:</b>	No data available
<b>BOILING POINT:</b>	No data available
<b>FLASH POINT:</b>	439F (226C)
<b>AUTOIGNITION POINT:</b>	No data available
<b>EXPLOSIVE LIMITS(Lower):</b>	No data available
<b>EXPLOSIVE LIMITS(Upper):</b>	No data available
<b>VAPOR PRESSURE:</b>	<0.0001 Pa @ 77F (25C)
<b>VAPOR DENSITY:</b>	No data available
<b>EVAPORATION RATE:</b>	No data available
<b>SPECIFIC GRAVITY:</b>	1.236 @ 77F (25C)
<b>SOLUBILITY IN WATER:</b>	Insoluble
<b>PARTITION COEFFICIENT:</b>	No data available
<b>DECOMPOSITION TEMPERATURE:</b>	No data available

## **10. STABILITY AND REACTIVITY**

#### **CHEMICAL STABILITY:**

Material reacts with water, forming carbon dioxide. Reacts exothermically with amines, water, and alcohols.



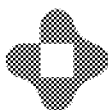
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## **10. STABILITY AND REACTIVITY (continued)**

<b>CONDITIONS TO AVOID:</b>	Heat, open flame, sparks.
<b>INCOMPATIBLE MATERIALS:</b>	Strong oxidizing agents, strong acids, amines, water, and alcohols.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Oxides of carbon, hydrogen cyanide.
<b>HAZARDOUS POLYMERIZATION:</b>	Not applicable

## **11. TOXICOLOGICAL INFORMATION**

<b>EYE CORROSION/IRRITATION:</b>	Slightly irritating, rabbit.
<b>SKIN CORROSION/IRRITATION:</b>	Slightly irritating, rabbit.
<b>ACUTE TOXICITY:</b>	
<b>ACUTE ORAL TOXICITY:</b>	LD <sub>50</sub> > 10000 mg/kg, rat. (Data for polyisocyanate class)
<b>ACUTE DERMAL TOXICITY:</b>	LD <sub>50</sub> > 9400 mg/kg, rabbit. (Data for polyisocyanate class)
<b>ACUTE INHALATION TOXICITY:</b>	LC <sub>50</sub> = 368 mg/L/4 hour, male rat, 559 mg/L/4 hour, female rat (aerosol). Such aerosols are not encountered outside of the experimental laboratory.
<b>SKIN SENSITIZATION</b>	Positive dermal sensitizer (local lymph node assay, LLNA). Positive respiratory sensitization is reported in the literature.
<b>GENETIC TOXICITY</b>	Equivocal in the Ames test. Negative in the mouse micronucleus test
<b>CARCINOGENICITY:</b>	A carcinogenicity study in rats with inhalation exposure to highly respirable mists of P-MDI up to the maximum tolerated dose (Reuzel et al. 1990), revealed effects to the respiratory tract only. Effects were reflective of irritation and there was a low incidence of pulmonary adenomas and a single adenocarcinoma in the high exposure group only. Another long term exposure study using an unusual protocol (17 hours per day exposure) with monomeric MDI also revealed an irritative effect with some pre-neoplastic changes in the highest exposure group. (Hoymann et al. 1995) Overall these studies indicate that long term lung irritation to MDI mists results in a hyperplasia leading eventually to adenoma



**11. TOXICOLOGICAL INFORMATION (continued)**

formation. Such high concentrations and highly respirable mists are only possible in the laboratory, and the inapplicability of this finding to human exposure to MDI vapour at low concentration in the workplace, results in a "not classified" for carcinogenicity. It is noted that IARC classification is group 3. (IRAC 1999) Epidemiological studies of MDI exposed workers show no increased carcinogenicity related to MDI exposure. As the conclusion of the document in Germany MAK (MAK-Values Vol.45, 2008), it sets the MAK value of MDI to category 4 (Carcinogen: substance is not genotoxic or genotoxic activity is negligible substance.)

**REPRODUCTIVE TOXICITY:**

In a reproductive study with inhalation exposure, the NOAEL (no-observed-adverse-effect level) for maternal toxicity was considered to be 4 mg/kg/day. The NOAEL for neonatal effects was considered to be 12 mg/kg/day. Fetotoxicity was seen only in the presence of maternal toxicity.

**STOT-SINGLE EXPOSURE:**

Inhalation is expected to be irritating.

**STOT-REPEATED EXPOSURE:**

In a combined chronic toxicity and carcinogenicity study rats, were exposed for 6 hours/day, 5 days/week for 2 years to polymeric MDI aerosol concentrations of 0, 0.2, 1.0 or 6.0 mg/m<sup>3</sup>. Histopathology of the organs/tissues investigated showed that exposure to 6.0 mg/m<sup>3</sup> was related to the occurrence of pulmonary tumors in males (6 adenomas and 1 adenocarcinoma) and females (2 adenomas). Although lifetime inhalation of PMDI aerosols by rats resulted in a small number of benign adenomas, they are considered to be of unlikely relevance to man. Such aerosols are not encountered outside of the experimental laboratory. This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.



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## **12. ECOLOGICAL INFORMATION**

### **ECOTOXICITY:**

96hr LC<sub>50</sub> > 1000 mg/L, zebra fish (Data for polyisocyanate class)  
48hr EC<sub>50</sub> > > 1000 mg/L, daphnia magna (Data for polyisocyanate class)  
72hr EC<sub>50</sub> > 1640 mg/L algae, growth rate (Data for polyisocyanate class)

### **PERSISTENCE AND DEGRADABILITY:**

Not readily biodegradable (Data for polyisocyanate class)

### **MOBILITY IN SOIL:**

No data available

## **13. DISPOSAL CONSIDERATION (INCLUDING CONTAINER)**

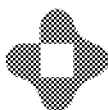
### **RESIDUAL WASTE:**

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from Federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

### **CONTAMINATED VESSELS AND CONTAINERS:**

Rinse containers before disposal. Do not allow rinsate to enter the water systems.  
EPA Hazardous Waste = No





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## **14. TRANSPORTATION INFORMATION**

PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Methylene diphenyl diisocyanate)
UN NUMBER:	UN3082
UN CLASS or DIVISION:	9
UN PACKING GROUP:	III
LABELS:	Environmental hazard
EMERGENCY GUIDE#:	171

**The above transportation classification is only applicable when the product is shipped in bulk containers, where a single container contains greater than 5000 pounds. Single containers less than 5,000 pounds may be shipped as “not regulated”.**

## **15. REGULATORY INFORMATION**

Inventory Status:	US (TSCA): Yes Canada (DSL): Yes EU (REACH): Registered Australia (AICS): Yes Japan (METI): Yes Korea (KECL): Yes
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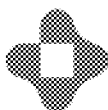
Where: Yes = all ingredients are listed on the inventory, Exempt = All ingredients are either on the inventory or exempt from the requirements of listing, No = Not determined, or one or more ingredients are not on the inventory and are not exempt from listing

SARA Title III Hazard Classes:	Fire Hazard: No Reactive Hazard: No Release of Pressure: No Acute Health Hazard: Yes Chronic Health Hazard: Yes
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### **SARA Extremely Hazardous Substances/CERCLA Hazardous Substances:**

Diisocyanates (generic group) 100%

**California Proposition 65:** This product does not contain any components that are regulated under Proposition 65.



# TOSOH SPECIALTY CHEMICALS USA, INC.

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## **16. OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THIS MSDS**

### **National Fire Protection Association (“NFPA”) Hazard Ratings:**

Health: 2 (Moderate)  
Flammability: 1 (Slight)  
Reactivity: 1 (Slight)

### **National Paint and Coatings Hazardous Materials Identification System (“HMIS”) Hazard Ratings:**

Health: 2 (Moderate)  
Flammability: 1 (Slight)  
Physical Hazard: 1 (Slight)

#### **HISTORY:**

Date previous SDS:	None
Date of issue:	February 7, 2015
Reasons for Revision:	GHS Format

**Disclaimer:** The information set forth herein has been gathered from standard reference materials and/or TOSOH SPECIALTY CHEMICALS USA, INC and its related, subsidiary and affiliated companies’ test data and is to the best knowledge and belief of TOSOH SPECIALTY CHEMICALS USA, INC and its related, subsidiary and affiliated companies, accurate and reliable. Such information is offered solely for your consideration, investigation, and verification, and is not suggested or guaranteed that the hazard precautions or procedures mentioned are the only ones that exist. TOSOH SPECIALTY CHEMICALS USA, INC and its related, subsidiary and affiliated companies make no warranties, express or implied, and expressly disclaim any and all such warranties with respect to the use of such information or the use of specific material identified herein in combination with any other material or process, and assume no responsibility therefor. TOSOH SPECIALTY CHEMICALS USA, INC and its related, subsidiary and affiliated companies make no representation or warranty, express or implied, and EXPRESSLY DISCLAIM ANY AND ALL SUCH WARRANTIES, as to the usefulness, sufficiency, MERCHANTABILITY or FITNESS FOR ANY PURPOSE whatsoever of the materials identified herein. The purchaser bears sole responsibility for testing, evaluating and determining the suitability of these materials for whatever use(s), manufacturing and refining processes, and any other such application(s) for which it intends or ultimately makes of these materials. Purchaser bears sole responsibility for obtaining any and all regulatory, legal and governmental approval necessary for such use(s).

**END OF SAFETY DATA SHEET**