1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Description: DION® 31100-00

Other means of identification
SAP ID(s): 152831; 152832; 187679; 200100
Material Code: 31100-00
Chemical Family: Aromatic Isocyanate

Recommended use of the chemical and restrictions on use
Recommended Use: Molding Resin
Uses advised against: No information available

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Polynt Composites USA, Inc.
99 East Cottage Avenue
Carpentersville IL 60110

In Canada
Polynt Composites Canada Inc
29 Regan Road
Brampton, Ontario
L7A 1B2

Emergency Telephone
Chemtrec: 1-800-424-9300 (in U.S. & Canada)
+1-703-741-5970 (international)

E-mail address
MSDS@polynt.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists) Category 4
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2
Respiratory sensitization Sub-category 1B
Skin sensitization Sub-category 1B
Specific target organ toxicity (single exposure) Category 3
Specific target organ toxicity (repeated exposure) Category 2

Label elements

Danger

Hazard statements
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure

Emergency Overview
Precautionary Statements - Prevention
Use only outdoors or in a well-ventilated area
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Do not breathe mist, vapors, spray

Precautionary Statements - Response
Get medical advice/attention 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: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant
Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethane Prepolymer</td>
<td>Proprietary</td>
<td>30 - 60</td>
<td></td>
</tr>
<tr>
<td>4,4'-Methylene diphenyl Diisocyanate</td>
<td>101-68-8</td>
<td>30 - 60</td>
<td></td>
</tr>
<tr>
<td>1,1''-Methylene bis[4-isocyanatobenzene] homopolymer</td>
<td>25686-28-6</td>
<td>0.1 - 10.</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

Eye Contact
Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Get medical attention if irritation develops and persists.
Inhalation
If breathing is difficult, (trained personnel should) give oxygen. Remove person to fresh air. If signs/symptoms continue, get medical attention. If not breathing, give artificial respiration.

Ingestion
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice. Rinse mouth with water.

**Most important symptoms and effects, both acute and delayed**

**Most Important Symptoms and Effects**
Irritating to eyes, respiratory system and skin. Harmful by inhalation, in contact with skin and if swallowed.

**Indication of any immediate medical attention and special treatment needed**
Effects of contact or inhalation may be delayed. Keep victim under observation. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**
Foam, Carbon dioxide (CO2), Dry powder

**Unsuitable Extinguishing Media**
Reaction between water and hot isocyanate may be vigorous. Water may be used if no other media is available and then in copious amounts.

**Specific hazards arising from the chemical**

**Hazardous combustion products**
Carbon dioxide (CO2), Carbon monoxide, Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

**Combustion/explosion hazards**
Closed containers may rupture when exposed to extreme heat.

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Reaction between water or foam and hot isocyanate can be vigorous. Use water spray to cool unopened containers.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**
Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid contact with skin and eyes. Ensure adequate ventilation.

**Other Information**
All equipment used when handling the product must be grounded.

**Environmental precautions**

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Do not allow material to contaminate ground water system.

**Methods and material for containment and cleaning up**

**Methods for Containment**
Prevent spilled material from 1) contaminating soil, 2) entering sanitary sewers, storm sewers, and drainage systems, and 3) entering bodies of water or ditches that lead to waterways. Prevent spreading over a wide area (e.g. by containment or oil barriers).
Methods for Clean-up

If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Keep in suitable and closed containers for disposal. Remove from surface water (e.g. by skimming or siphoning). Retain all contaminated water or flushing liquid for disposal or for treatment prior to release.

---

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Do not breathe vapor or mist. Avoid contact with skin, eyes or clothing. Wear personal protective equipment. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a cool, well-ventilated place. Container can be pressurized by carbon dioxide due to reaction with humid air and/or water. Do not reseal contaminated containers.

---

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

Components with workplace control parameters.

4,4'-Methylene diphenyl Diisocyanate (CAS #: 101-68-8)

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Canada - Alberta OELs</th>
<th>Canada - Ontario OELs</th>
<th>Canada - British Columbia OELs</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.005 ppm TWA</td>
<td>0.02 ppm Ceiling</td>
<td>0.005 ppm TWA</td>
<td>0.005 ppm TWA</td>
<td>0.005 ppm TWA</td>
<td>75 mg/m³</td>
<td>0.02 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.05 mg/m³ Ceiling</td>
<td>0.02 ppm Ceiling</td>
<td>0.01 ppm Ceiling</td>
<td></td>
<td>0.2 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(skin)</td>
<td></td>
<td>0.005 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.051 mg/m³ TWA</td>
</tr>
</tbody>
</table>

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

TLV® (Threshold Limit Value)

TWA (time-weighted average)

OSHA - Occupational Safety and Health Administration

PEL - Permissible Exposure Limit

OEL - Occupational Exposure Limit

NIOSH - National Institute for Occupational Safety and Health

IDLH - Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls

Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations.

Individual protection measures, such as personal protective equipment

Eye/face Protection

Safety glasses with side-shields. If splashes are likely to occur:. Tight sealing safety goggles. Ensure that eyewash stations and safety showers are close to the workstation location.
Skin Protection

Gloves made of butyl rubber or Viton®. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Chemical resistant apron. Boots.

Respiratory Protection

None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding, grinding, cutting, or spraying. If an air-purifying respirator is used, then the cartridges must be equipped with an appropriate end-of-service life indicator or a cartridge change schedule must be developed and implemented based on objective information. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dark brown</td>
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<tr>
<td>Odor</td>
<td>Musty</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
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<tr>
<td>Flash point</td>
<td>&gt; 219 °C / &gt; 426 °F</td>
</tr>
<tr>
<td>Flash Point Method:</td>
<td>Seta closed cup</td>
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<tr>
<td>Autoignition Temperature</td>
<td>&gt; 600°C / &gt; 1112°F</td>
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<tr>
<td>Boiling point / boiling range</td>
<td>341°C / 646°F</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
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</tr>
<tr>
<td>Upper</td>
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<tr>
<td>Specific Gravity</td>
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<tr>
<td>Solubility</td>
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<td>Evaporation rate</td>
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<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor density</td>
<td>8.5</td>
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<tr>
<td></td>
<td>(Air = 1.0)</td>
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<tr>
<td>Explosive properties</td>
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<tr>
<td>Oxidizing Properties</td>
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<tr>
<td>Percent Volatile</td>
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<tr>
<td>VOC Content</td>
<td>Negligible</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity

Unstable upon depletion of inhibitor.

Chemical Stability

Stable under normal conditions. Preparation reacts slowly with water resulting in evolution of CO2.

Possibility of Hazardous Reactions

Hazardous polymerization Contact with moisture may cause polymerization. Polymerization may occur at elevated temperatures.
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Primary Routes of Entry
Skin Contact, Inhalation, Eye contact

Acute toxicity
4,4’-Methylenediphenyl Diisocyanate
Oral LD50 = 9200 mg/kg (Rat)

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eyes
Irritating to eyes.

Skin
Irritating to skin. May cause sensitization by skin contact.

Inhalation
Harmful by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Ingestion
Ingestion (swallowing) may irritate the mouth, throat and stomach. May cause damage to gastrointestinal tract.

Irritation
Irritating to eyes and skin.

Corrosivity
Not corrosive.

Sensitization
May cause sensitization by inhalation and skin contact.

Repeated dose toxicity
Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

Mutagenic effects
No information available.

Carcinogenicity

4,4’-Methylenediphenyl Diisocyanate
IARC Group 3 - Not Classifiable as to Carcinogenicity in Humans

Legend
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
IARC - International Agency for Research on Cancer

Reproductive Toxicity
No information available.

Neurological effects
No information available.

STOT - single exposure
Respiratory system.

STOT - repeated exposure
No information available.
Target organ effects  Lungs, Respiratory system, Eyes.

Aspiration hazard  No information available.

The following values are calculated based on chapter 3.1 of the GHS document .

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (oral)</td>
<td>18776 mg/kg</td>
</tr>
<tr>
<td>ATEmix (inhalation-dust/mist)</td>
<td>3.1 mg/L</td>
</tr>
<tr>
<td>ATEmix (inhalation-vapor)</td>
<td>22 mg/L</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity
4,4'-Methylenediphenyl Diisocyanate
Fish LC50 (Fish) > 1000 mg/L (96h)

Persistence/Degradability
Immiscible in water. Reacts with water to form inert and non-biodegradable solids.

Bioaccumulation
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Considerations  NOT A RCRA HAZARDOUS WASTE: When discarded in its purchased form, this material would not be regulated as a RCRA Hazardous waste under 40 CFR 261. The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging  Empty containers should be taken for local recycling, recovery or waste disposal.

US EPA Waste Number  Not applicable.

14. TRANSPORT INFORMATION

DOT
Proper shipping name  NOT REGULATED
Reportable Quantity (RQ)  5000 Lbs (methylene diphenyl diisocyanate) This material must be classed as a dangerous good when a single package contains a reportable quantity

TDG
Proper shipping name  NOT REGULATED

MEX
Proper shipping name  NOT REGULATED

IATA
Proper shipping name  NOT REGULATED

IMDG/IMO
Proper shipping name  NOT REGULATED

15. REGULATORY INFORMATION
International Inventories

TSCA Inventory Status: All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.

Canadian Inventory Status: This material contains components that are NOT listed on the Canadian Domestic Substances List (DSL)

Australian Inventory Status: This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances

Korean Inventory Status: This product contains only chemicals which are currently listed on the Korean Chemical Substances List

Philippine Inventory: This product contains one or more chemicals currently not on the Philippine Inventory of Chemicals and Chemical Substances

Japan ENCS: This product contains only chemicals that are currently listed on the Japanese Inventory of Existing and New Chemical Substances

Chinese IECS: This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances

New Zealand Inventory: This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals

US Federal Regulations

TSCA 12(b) - Export Notification: This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40 of the Code of Federal Regulations, Part 372:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>SARA 313 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-Methylenediphenyl Diisocyanate</td>
<td>101-68-8</td>
<td>30 - 60</td>
<td>Listed</td>
</tr>
</tbody>
</table>

EPCRA: Emergency Planning and Community Right-to-Know Act
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following HAPs:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>HAPS data</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-Methylenediphenyl Diisocyanate</td>
<td>101-68-8</td>
<td>30 - 60</td>
<td></td>
</tr>
</tbody>
</table>

CERCLA
This product contains the following reportable quantities:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>40 CFR 302.4 RQ</th>
<th>40 CFR 355 EHS TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-Methylenediphenyl Diisocyanate</td>
<td>5000 lb</td>
<td>2270 kg</td>
</tr>
</tbody>
</table>

State Regulations

California Proposition 65
This product is not known to contain any chemicals listed by the State of California (Safe Drinking Water and Toxic Enforcement Act of 1986) to cause cancer or reproductive toxicity.
Canada
This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Rating</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Prepared By: Polynt Regulatory Department
Revision Date: 02/Jan/2018
Revision Note: None
Former date: New

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End of Safety Data Sheet

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