1. PRODUCT AND COMPANY IDENTIFICATION

Product name: CORAFOAM® PIR FOAM  
CAS number: Mixture  
Product type and use: Rigid expanded polyurethane modified polyisocyanurate foam for thermal insulation  
Company: DUNA-USA Inc.  
4210 FM 1405 Baytown, TX, 77523 USA  
1-281-383-3862 info-dunausa@dunagroup.com

In case of emergency call: CHEMTREC 1-800-424-9300 (24 HOURS DAY, 7 DAYS A WEEK)

2. HAZARDS IDENTIFICATION

Physical state: Solid  
Appearance: Rigid foam  
Emergency overview: Low hazard for usual industrial or commercial handling  
OSHA regulatory status: This product is considered NOT hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential health effects:
- Eyes: Dust may irritate the eyes.
- Skin: Nonirritating. May cause irritation only through mechanical abrasion.
- Inhalation: Dust may irritate the respiratory system.
- Ingestion: May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Target organs: Inhalation  
Skin  
Eye  
Chronic effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Signs and symptoms: May cause eye irritation. Itching, redness, burning of skin.

Potential environmental effects: The product is not classified as environmentally hazardous.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigid expanded polyurethane modified polyisocyanurate foam</td>
<td>not applicable</td>
<td>90 - 100</td>
</tr>
<tr>
<td>Cyclopentane</td>
<td>287-92-3</td>
<td>2.5 - 10.0</td>
</tr>
<tr>
<td>2-Methylbutane</td>
<td>78-78-4</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

First aid procedures

Eye contact  Dust in the eyes: Flush thoroughly with water for at least 15 minutes. Get medical attention if any discomfort continues.

Skin contact  Contact with dust: Essentially nonirritating to skin. Wash with soap and water if mechanical injury occurs.

Inhalation  If symptoms develop, move to fresh air. Get medical attention if discomfort develops or persists.

Ingestion  Do not induce vomiting. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Flammable properties  Not flammable by OSHA criteria

Extinguishing media  Suitable extinguishing media

Protection of firefighters  Specific hazards arising from the chemical

Fire fighting instructions  Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguisher may be used for small fires.

Fire fighting equipment  Wear positive-pressure self contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Specific methods  Not applicable.


6. ACCIDENTAL RELEASE MEASURES

Personal precautions  No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the MSDS for additional personal protection advice when handling this product.

Environmental precautions  No specific precautions.

Methods for cleaning up  For waste disposal, see Section 13 of the MSDS.

7. HANDLING AND STORAGE
Handling
Use work methods which minimize dust production. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene practices. Refer to “EXPOSURE CONTROLS AND PERSONAL PROTECTION”, Section 8 of the MSDS. No smoking, open flames or sources of ignition in handling and storage area. Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit. Good housekeeping and controlling of dusts are necessary for safe handling of product.

Storage
Store away from incompatible materials. Minimize sources of ignition, such as static build-up, heat, spark or flame. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources. Read and follow manufacturer's recommendations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational exposure limits
US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylbutane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
<tr>
<td>Cyclopentane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
</tbody>
</table>

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylbutane</td>
<td>TWA</td>
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<tr>
<td>Cyclopentane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1770 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1720 mg/m³</td>
</tr>
</tbody>
</table>

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylbutane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
<tr>
<td>Cyclopentane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
</tbody>
</table>

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylbutane</td>
<td>STEL</td>
<td>2210 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>750 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>600 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1770 mg/m³</td>
</tr>
<tr>
<td>Cyclopentane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1720 mg/m³</td>
</tr>
</tbody>
</table>

Canada. Quebec OELS. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclopentane</td>
<td>TWA</td>
<td>600 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1720 mg/m³</td>
</tr>
</tbody>
</table>

Engineering controls
Provide sufficient ventilation for operations causing dust formation. Observe occupational exposure limits and minimize the risk of exposure.
Personal protective equipment

Eye/face protection
No special precautions.

Skin protection
Gloves, for handling rough edges

Respiratory protection
When engineering controls are not sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH approved respirator for dusts.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

Ingestion
No precautions necessary due to the physical properties of the material.

Engineering Controls
Ventilation
Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Rigid foam</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Form</td>
<td>Foam</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: &gt; 300°C (&gt; 572°F)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 400°C (&gt; 752°F)</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Thermally stable at typical use temperatures. See TDS.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Avoid temperatures above 260°C (500°F). UV rays may cause discoloration.</td>
</tr>
<tr>
<td>Incompatibility materials</td>
<td>Strong acids, strong alkalies and oxidizing agents</td>
</tr>
<tr>
<td>Hazardous polymerization</td>
<td>Will not occur</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.</td>
</tr>
</tbody>
</table>

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11. TOXICOLOGICAL INFORMATION

Toxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylbutane (78-78-4)</td>
<td>Acute Inhalation LC50 Mouse: 450 mg/l 2 Hours</td>
</tr>
</tbody>
</table>

Acute effects
Under normal conditions of intended use, this material does not pose a risk to health.

Local effects
Exposure to particles from cutting operations may cause mechanical irritation of eyes.

Repeated dose toxicity
Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The product is not classified as environmentally hazardous. Not expected to be acutely toxic to aquatic organisms

Persistence and degradability
The product is not biodegradable. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Mobility in environmental media
The product is insoluble in water. No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

13. DISPOSAL CONSIDERATIONS

Disposal instructions:
Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

14. TRANSPORT INFORMATION

DOT, TDG, IMDG, IATA-ICAO: Not regulated.

15. REGULATORY INFORMATION

US federal regulations
CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)
- Cyclopentane: 100
- 2-Methylbutane: 100
Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories

- Immediate Hazard: No
- Delayed Hazard: No
- Fire Hazard: No
- Pressure Hazard: No
- Reactivity Hazard: No

Section 302 extremely hazardous substance (40 CRF 355, Appendix A)
No

Section 311/312 (40 CFR 370)
No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)
Not controlled

WHMIS status
Non controlled

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*“A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

US - California Hazardous Substances (Director’s): Listed substance
  Cyclopentane (CAS 287-92-3) Listed.

US - Massachusetts RTK - Substance: Listed substance
  2-Methylbutane (CAS 78-78-4) Listed.
  Cyclopentane (CAS 287-92-3) Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold
  2-Methylbutane (CAS 78-78-4) 500 LBS

US - New Jersey RTK - Substances: Listed substance
  2-Methylbutane (CAS 78-78-4) Listed.
  Cyclopentane (CAS 287-92-3) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance
  2-Methylbutane (CAS 78-78-4) Listed.
  Cyclopentane (CAS 287-92-3) Listed.
16. OTHER INFORMATION

Label requirements: None

Hazardous Material Information System

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Notice to reader

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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