SAFETY DATA SHEET

Section 1. Identification

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name/Code</td>
<td>R4296</td>
</tr>
<tr>
<td>Product description</td>
<td>Waterborne Aliphatic Polyurethane Dispersion</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not available</td>
</tr>
<tr>
<td>Product type</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Polymer

Uses advised against
All uses other than those indicated on the product label and technical data sheet.

Supplier's details
Essential Polymers
28391 Essential Road
P.O. Box 12
Merton, WI 53089
Phone: 262-538-0091

Emergency telephone number (with hours of operation)
800-843-6174

Section 2. Hazards identification

OSHA/HCS status
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture
Not classified.

GHS label elements

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 35.9%
There is no toxicity data available for the polymer in this product, which is exempt and categorized in a low concern functional group under the EPA's Toxic Substances Control Act (TSCA).

OSHA/HCS status

Classification of the substance or mixture
Not classified.

GHS label elements

Signal word
No signal word.

Hazard statements
No known significant effects or critical hazards.

Precautionary statements

General
Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention
Not applicable

Response
Not applicable

Storage
Not applicable

Disposal
Not applicable

Hazard not otherwise classified
None known.
Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.
Section 5. Fire-fighting measures

- **Hazardous thermal decomposition products**: Decomposition products may include the following materials:
  - Carbon dioxide
  - Carbon monoxide

- **Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- **Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - **For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
  - **For emergency responders**: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- **Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

- **Methods and materials for containment and cleaning up**
  - **Small spill**: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
  - **Large spill**: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- **Precautions for safe handling**
  - **Protective measures**: Put on appropriate personal protective equipment (see Section 8).
  - **Advice on general occupational hygiene**: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
  - **Conditions for safe storage, including any incompatibilities**: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits
None.

Appropriate engineering controls
None.

Environmental exposure controls
None.

Hand protection
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Eye/face protection

Skin protection

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state: Liquid
Color: Light Yellow
Odor: Amine-like
Odor threshold: Not available
pH: 8.5
Melting point: 0°C (32°F)
Boiling point: 100°C (212°F)
Flash point: Closed cup: >93.34°C (>200°F)
Evaporation rate: Not available
Flammability (solid, gas): Not available
Lower and upper explosive (flammable) limits: Not available
Vapor pressure: <4 kPa (<30 mm Hg) [room temperature]
Vapor density: <1 [Air = 1]
Section 9. Physical and chemical properties

- Relative density: 1.03 g/cm³
- Solubility: Not available
- Partition coefficient: n-octanol/water: Not available
- Auto-ignition temperature: Not available
- Decomposition temperature: Not available
- Viscosity: Not available
- VOC content: 2.05 lbs/gal (247 g/l)

Section 10. Stability and reactivity

- Reactivity: No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability: The product is stable.
- Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid: No specific data.
- Incompatible materials: No specific data.
- Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

- Acute toxicity: Not available.
- Irritation/Corrosion: Not available.
- Sensitization: Not available.
- Mutagenicity: Not available.
- Carcinogenicity: Not available.
- Reproductive toxicity: Not available.
- Teratogenicity: Not available.
- Specific target organ toxicity (single exposure): Not available.
- Specific target organ toxicity (repeated exposure): Not available.
- Aspiration hazard: Not available.
Section 11. Toxicological information

Information on the likely routes of exposure
Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Long term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Potential chronic health effects
Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
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<th>Route</th>
<th>ATE value</th>
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</thead>
<tbody>
<tr>
<td>Oral</td>
<td>51592.7 mg/kg</td>
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</tbody>
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Section 12. Ecological information

Toxicity
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential

Date of issue/Date of revision : 1/30/2019
Date of previous issue : No previous validation
Version : 0.01
Section 12. Ecological information

Not available.

**Mobility in soil**

| Soil/water partition coefficient (K_{oc}) | Not available |

**Other adverse effects**

No known significant effects or critical hazards.

Section 13. Disposal considerations

**Disposal methods**

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

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<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
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<tbody>
<tr>
<td>UN number</td>
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<tr>
<td>UN proper shipping name</td>
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<tr>
<td>Transport hazard class(es)</td>
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<td>-</td>
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<tr>
<td>Packing group</td>
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</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Additional information**

**Special precautions for user**

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.

Section 15. Regulatory information

**U.S. Federal regulations**

- **Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)**: Not listed
- **SARA 311/312**
  - Classification: Not applicable
  - Composition/information on ingredients

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**Date of previous issue**: No previous validation  
**Version**: 0.01  
**Page**: 7/9
Section 15. Regulatory information

No products were found.

Inventory list

Canada: All components are listed or exempted.
United States: All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
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<tr>
<th>Health</th>
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</thead>
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<tr>
<td>Flammability</td>
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<tr>
<td>Physical hazards</td>
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Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Flammability: 0
Instability/Reactivity: 0
Health: 0
Special: 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
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<tbody>
<tr>
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History

| Date of printing | 1/30/2019 |
| Date of issue/Date of revision | 1/30/2019 |
| Date of previous issue | No previous validation |
| Version | 0.01 |
| Key to abbreviations | ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 |
Section 16. Other information

as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.