### 1. Product and company identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>EPIKURE™ Curing Agent 3282</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSDS Number</td>
<td>1641</td>
</tr>
<tr>
<td>Internal code</td>
<td>K814L</td>
</tr>
<tr>
<td>Product Type</td>
<td>Curing Agent</td>
</tr>
<tr>
<td>Manufacturer, Importer, Supplier</td>
<td>Momentive Specialty Chemicals Inc.</td>
</tr>
<tr>
<td>Telephone</td>
<td>For Emergency Medical Assistance Call Health &amp; Safety Information Services, 1-866-303-6949</td>
</tr>
<tr>
<td></td>
<td>For Emergency Transportation Information CHEMTREC US Domestic (800) 424-9300 CHEMTREC International (703) 527-3887 CANUTEC CA Domestic (613) 996-6666</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:4information@momentive.com">4information@momentive.com</a></td>
</tr>
<tr>
<td>Print date</td>
<td>18-AUG-2011</td>
</tr>
<tr>
<td>Telephone</td>
<td>For additional health and safety or regulatory information, call 1 888 443 9466</td>
</tr>
</tbody>
</table>

### 2. Hazards identification

<table>
<thead>
<tr>
<th>Form</th>
<th>Viscous liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Amine</td>
</tr>
<tr>
<td>OSHA/HCS status</td>
<td>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</td>
</tr>
<tr>
<td>Emergency overview</td>
<td>DANGER ! TOXIC IF INHALED. HARMFUL IN CONTACT WITH SKIN OR IF SWALLOWED. CAUSES RESPIRATORY TRACT, DIGESTIVE TRACT, EYE AND SKIN BURNS. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. CROSS-SENSITIZATION TO OTHER AMINES MAY OCCUR.</td>
</tr>
</tbody>
</table>

**Potential acute health effects**

**Inhalation** Can cause central nervous system (CNS) depression. Corrosive to the respiratory system. May cause sensitization by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Toxic if inhaled. Exposure can produce sensorimotor effects.
**Ingestion**
Harmful if swallowed. Can cause central nervous system (CNS) depression. Corrosive to the digestive tract. Causes burns.

**Skin**
Corrosive to the skin. Causes burns. Harmful in contact with skin. May cause sensitization by skin contact.

**Eyes**
Corrosive to eyes. Causes burns. Excessive tear formation. Direct contact with the eyes can cause irreversible damage, including blindness.

**Potential chronic health effects**

**Chronic effects**
Contains material that can cause target organ damage.

**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.

**Target organs**
Contains material which causes damage to the following organs: kidneys, lungs, liver, central nervous system (CNS), Review Section 2 and 11 for any additional assessments.

**Over-exposure signs/symptoms**

**Inhalation**
Adverse symptoms may include the following: nausea or vomiting, respiratory tract irritation, coughing, headache, drowsiness/fatigue, dizziness/vertigo, wheezing and breathing difficulties, unconsciousness, asthma, visual disturbances, halos around bright objects,

**Ingestion**
Adverse symptoms may include the following: stomach pains, nausea or vomiting, dizziness/vertigo, drowsiness/fatigue, headache, unconsciousness, convulsion,

**Skin**
Adverse symptoms may include the following: pain or irritation, redness, blistering may occur

**Eyes**
Adverse symptoms may include the following: pain, watering, redness,

**Medical conditions aggravated by over-exposure**
Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See section 11 for more detailed information on health effects and symptoms.

### 3. Composition/Information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>WT %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylenepolyamine Epoxy Adduct (Proprietary)</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>4,4’-Isopropylidenediphenol</td>
<td>80-05-7</td>
<td></td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>111-40-0</td>
<td></td>
</tr>
</tbody>
</table>

**Any applicable Canadian trade secret numbers will be listed in Section 15.**

### 4. First aid measures

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove
any contact lenses. Chemical burns must be treated promptly by a physician. Get medical attention immediately.

**Skin contact**
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

**Inhalation**
Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

**Ingestion**
Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Protection of first aid personnel**
No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. If it is suspected that dust, vapor, mist or gas are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

**Notes to physician**
In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

See section 11 for more detailed information on health effects and symptoms.

### 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Flammability of the product</th>
<th>In a fire or if heated, a pressure increase will occur and the container may burst.</th>
</tr>
</thead>
</table>

**Extinguishing media**

<table>
<thead>
<tr>
<th>Suitable</th>
<th>Use an extinguishing agent suitable for the surrounding fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not suitable</td>
<td>Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.</td>
</tr>
</tbody>
</table>

**Special exposure hazards**
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.

**Hazardous combustion products**
Decomposition products may include the following materials: carbon oxides, nitrogen oxides,
6. Accidental release measures

Personal precautions

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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Do not breathe dust, vapor, mist or gas.

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).

Large spill

Stop leak if without risk. Move containers from spill area. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling

Put on appropriate personal protective equipment (see section 8). 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. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Do not breathe dust, vapor, mist or gas.

Storage

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 (see section 10) 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

### 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-Isopropylidenediphenol</td>
<td>ACGIH TLV 8-hr TWA 5 mg/m3</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL 8-hr TWA 5 mg/m3 (respirable particulate)</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL 8-hr TWA 15 mg/m3 (total dust)</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>ACGIH TLV 8-hr TWA 4.2 mg/m3 1 ppm</td>
</tr>
</tbody>
</table>

Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

**Engineering measures**

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. 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.

**Respiratory**

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Hands**

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.

Recommended:
- Neoprene gloves
- Nitrile rubber gloves
- gauntlet type

**Eyes**

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 or dusts.

**Skin**

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.

**Environmental exposure controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Viscous liquid</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>105 °C(221 °F) Pensky-Martens Closed Cup ASTM D 93</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Flammable limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>1.4 % (V)</td>
</tr>
<tr>
<td>Upper</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Reddish-brown</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Amine</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>Greater than 207 °C(405 °F)</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Less than 13.33 Pa @ 20 °C(68 °F)</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Dynamic- 60 - 150 Pa·s @ 25 °C(77 °F)</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Partial</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>Estimated.1,090 kg/m3 @ 25 °C(77 °F)</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Stability**

The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

**Conditions to avoid**

Strong oxidizer, Keep away from heat, sparks, flame and other ignition sources. Exposure to water vapour.

**Materials to avoid**

strong acids, strong oxidizing agents,

**Hazardous decomposition products**

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Decomposition products may include the following materials: nitrogen oxides, carbon monoxide, other organic compounds,

### 11. Toxicological information

#### Acute toxicity

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>LD50 Oral Rat</th>
<th>LD50 Dermal Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’-Isopropylidenediphenol</td>
<td>3,250 mg/kg</td>
<td>3,000 mg/kg</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LD50 Oral Rat 2,800 mg/kg
LD50 Dermal Rabbit 550 mg/kg

Other Toxicological Information

Chronic toxicity

Conclusion/Summary Bisphenol A: Liver and questionable kidney and bladder effects were observed in animal feeding studies. Toxic levels of exposure resulted in weight loss in laboratory animals with other effects related to the weight loss as a consequence.

Carcinogenicity

Classification

Ingredient name
Polyethylenepolyamine Epoxy Adduct (Proprietary)
ACGIH Not classified
IARC Not classified
NTP Not listed
OSHA Not regulated
EU Not classified

4,4’-Isopropylidenediphenol
Diethylenetriamine
ACGIH Not classified
IARC Not classified
NTP Not listed
OSHA Not regulated
EU Not classified

Teratogenicity

Conclusion/Summary Bisphenol A: Another study on the effects of laboratory rats and mice exposed during pregnancy concluded that even doses high enough to be toxic to the pregnant animals did not alter fetal development of the pups.

12. Ecological information

Environmental effects
No known significant effects or critical hazards.

Aquatic ecotoxicity

Ingredient name
4,4’-Isopropylidenediphenol
Fresh water Acute LC50 4.6 mg/l/96 h Fathead minnow

Other adverse effects
No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal
The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment.
for transportation.

**International transport regulations**

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN/NA number</th>
<th>Proper shipping name</th>
<th>Classes/*PG</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFR</td>
<td>2735</td>
<td>POLYAMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENETRIAMINE)</td>
<td>Class 8 II</td>
<td></td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td>2735</td>
<td>POLYAMINES, LIQUID, CORROSIVE, N.O.S. contains (DIETHYLENETRIAMINE)</td>
<td>Class 8 II</td>
<td></td>
</tr>
<tr>
<td>IATA (Cargo)</td>
<td>2735</td>
<td>POLYAMINES, LIQUID, CORROSIVE, N.O.S. contains (DIETHYLENETRIAMINE)</td>
<td>Class 8 II</td>
<td></td>
</tr>
</tbody>
</table>

*PG : Packing group

**15. Regulatory information**

**US regulations**

**HCS Classification**

Toxic material, Corrosive material, Sensitizing material, Target organ effects

**U.S. Federal regulations**

**SARA 311/312 Classification** Immediate (acute) health hazard, Delayed (chronic) health hazard

**SARA 313 - Supplier Notification**

This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorizations Act of 1986, and Subpart C - Supplier Notification Requirement of 40 CFR Part 372.

- 4,4'-Isopropylidenediphenol - 80-05-7 (25.00%),

**SARA 302 Extremely Hazardous Substances** None required.

**State regulations**

**Massachusetts RTK Substances**

The following components are listed:

- 4,4'-Isopropylidenediphenol, Diethylenetriamine,

**New Jersey RTK Hazardous Substances**

The following components are listed:

- 4,4'-Isopropylidenediphenol, Diethylenetriamine,

**Pennsylvania RTK Hazardous Substances**

The following components are listed:

- 4,4'-Isopropylidenediphenol, Diethylenetriamine,

**California Prop. 65**

None required.

**Canada**

**WHMIS (Canada)**

- Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
- Class D-2A: Material causing other toxic effects (Very toxic).
- Class D-2B: Material causing other toxic effects (Toxic).
- Class E: Corrosive material

**Canadian lists**

**Canadian NPRI**: The following components are listed: 4,4'-Isopropylidenediphenol,

**International regulations**

**Chemical inventories**

Europe inventory All components are listed or exempted.

Australia inventory (AICS) All components are listed or exempted.

China inventory (IECSC) All components are listed or exempted.

Japan inventory (ENCS) All components are listed or exempted.
Japan inventory (ISHL)  Not determined.
Korea inventory (KECI)  All components are listed or exempted.
New Zealand Inventory (NZIoC)  Not determined.
Philippines inventory (PICCS)  Not determined.
Canada inventory  All components are listed or exempted.
United States inventory (TSCA 8b)  All components are listed or exempted.

16. Other information

<table>
<thead>
<tr>
<th>Hazardous Material Information System III (U.S.A.)</th>
<th>Health : 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flammability: 1</td>
</tr>
<tr>
<td></td>
<td>Physical hazards : 0</td>
</tr>
<tr>
<td></td>
<td>Chronic : *</td>
</tr>
</tbody>
</table>

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 are not required on MSDSs 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 mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

Prepared by  Product Safety & Regulatory Compliance Group, (614)225-4778
Date of issue  20-NOV-2010
Date of printing  18-AUG-2011
Version  9.6
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