NIAx Catalyst A-1
Tertiary Amine / Glycol Mixture

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer Name: Momentive Performance Materials - Sistersville
3500 South State Route 2
FRIENDLY WV 26146

Revised: 02/07/2013
Prepared by: Product Safety Team
CHEMTREC: 1-800-424-9300
MSDS Contact: 1-888-443-9466
Information: 4information@momentive.com

Chemical Family/Use: Catalyst

Formula: Tertiary Amine / Glycol Mixture

HMIS
Health: 3 Flammability: 2 Reactivity: 0

NFPA
Health: 3 Flammability: 2 Reactivity: 0

2. HAZARDS IDENTIFICATION

WHMIS CLASSIFICATION

Corrosive Material
Combustible liquid.
Toxic Material Causing Immediate and Serious Toxic Effects

EMERGENCY OVERVIEW
DANGER! Harmful and corrosive if swallowed. Causes skin and eye burns. Combustible. Aspiration may cause lung damage. Vapor may produce increased corneal thickness and eye irritation.
Form: Liquid
Color: Colorless / Yellow
Odor: amine like

Potential Health Effects

INGESTION
Causes severe irritation or chemical burns. Do NOT induce vomiting. Prolonged and/or repeated contact may result in: - lung damage - liver damage

SKIN
Corrosive. Prolonged and/or repeated contact may result in: - kidney damage
INHALATION
Causes: - nasal discomfort and discharge - chest pain Coughing. At low humidity (< 50%), respiratory and eye irritation are expected to be more severe. Prolonged and/or repeated exposure may cause the following effects: - thickening of the cornea - microscopic swelling of a variety of tissues

EYES
Causes severe irritation or chemical burns. See 'Notes to Physician'.

MEDICAL CONDITIONS AGGRAVATED
Skin contact may cause:

CHRONIC EFFECTS / CARCINOGENICITY
This product or one of its ingredients present at 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENT(S)

<table>
<thead>
<tr>
<th>PRODUCT COMPOSITION</th>
<th>CAS-NO.</th>
<th>WGT. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(2-dimethylaminoethyl)ether</td>
<td>3033-62-3</td>
<td>60% - 100%</td>
</tr>
<tr>
<td>Dipropylene Glycol</td>
<td>25265-71-8</td>
<td>15% - 40%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

INGESTION
Give one or two glasses or water if patient is alert and able to swallow. Seek immediate medical attention. If medical attention will be delayed, contact a Regional Poison Centre or emergency medical professional regarding the use of activated charcoal/syrup of ipecac. Do not induce vomiting.

SKIN
Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Wash contaminated clothing before reuse.

INHALATION
Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen.
Get medical attention immediately.

**EYES**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

**NOTE TO PHYSICIAN**

This product is a corrosive material. Gastric lavage or emesis may be contraindicated. Ingestion or inhalation may result in shock, decreased blood pressure, pulmonary edema, CNS depression, edema of the glottis with asphyxia, and perforation of the esophagus or stomach. Inhalation of vapors or fumes may result in coughing, choking, and CNS effects followed after a 6-8 hour latent period by pulmonary edema with tightness in the chest, air hunger, dizziness, frothy sputum, and cyanosis. Physical findings may include moist rales, low blood pressure, and high pulse pressure. Hemoptysis and dyspnea may continue for several weeks. Prednisolone may reduce esophageal stricture formation.

Exposure to the vapor may cause minor transient edema of the corneal epithelium. This condition, referred to as "glaucopsia", "blue haze" or "blue-gray haze", produces a blurring of vision against a general bluish haze and the appearance of halos around bright objects. The effect disappears spontaneously within a few hours of the end of an exposure and leaves no sequelae. Although not detrimental to the eye per se, glaucopsia predisposes an affected individual to physical accidents and reduces the ability to undertake skilled tasks, such as driving a motorized vehicle.

**5. FIRE-FIGHTING MEASURES**

**FLASH POINT:** 74 °C; 165 °F

**METHOD**

ASTM D 93

**Autoignition Temperature:** No data available.

**FLAMMABLE LIMITS LEL:** 1 %(V). (BDMAEE)

**FLAMMABLE LIMITS UEL:** 5.1 %(V). (BDMAEE)

**SENSITIVITY TO MECHANICAL IMPACT:** No

**SENSITIVITY TO STATIC DISCHARGE**

Sensitivity to static discharge is expected; material has a flash point below 200 F.

**EXTINGUISHING MEDIA**

All standard extinguishing agents are suitable.

**SPECIAL FIRE FIGHTING PROCEDURES**

Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

**PRECAUTIONS FOR FIRE-FIGHTING**

This material may produce a floating fire hazard.
6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.

ENVIRONMENTAL PRECAUTIONS
Do not allow runoff to sewer, waterway or ground.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Do not taste or swallow. Avoid contact with skin and eyes. Keep out of reach of children.

STORAGE
Keep container tightly closed. Keep away from heat and flame.

FURTHER INFORMATION ON STORAGE CONDITIONS
No data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS
Provide eyewash station and safety shower.; General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment.; Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

RESPIRATORY PROTECTION
If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

PROTECTIVE GLOVES
Chemical resistant gloves
NIAX* CATALYST A-1
Tertiary Amine / Glycol Mixture

EYE AND FACE PROTECTION
Safety glasses with side shields; Wear approved safety goggles.; Face shield

OTHER PROTECTIVE EQUIPMENT
Wear suitable protective clothing and eye/face protection.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

Consult local authorities for acceptable provincial values.
Absence of values indicates none found

PEL - OSHA Permissible Exposure Limit; TLV - ACGIH Threshold Limit Value; TWA - Time Weighted Average


9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILING POINT (°C):</td>
<td>190 °C; 374 °F</td>
</tr>
<tr>
<td>VAPOR PRESSURE (20 C) (MM HG):</td>
<td>51.80</td>
</tr>
<tr>
<td>VAPOR DENSITY (AIR=1):</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>FREEZING POINT:</td>
<td>-80 °C; -112 °F</td>
</tr>
<tr>
<td>MELTING POINT:</td>
<td>-80 °C; -112 °F</td>
</tr>
<tr>
<td>PHYSICAL STATE:</td>
<td>Liquid</td>
</tr>
<tr>
<td>ODOR:</td>
<td>amine like</td>
</tr>
<tr>
<td>ODOR THRESHOLD:</td>
<td>No data available.</td>
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<tr>
<td>COLOR:</td>
<td>Colorless / Yellow</td>
</tr>
<tr>
<td>EVAPORATION RATE (BUTYL ACETATE=1):</td>
<td>0.08</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY:</td>
<td>ca. 0.9</td>
</tr>
<tr>
<td>DENSITY:</td>
<td>0.9020 g/cm3</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available.</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER (20 C):</td>
<td>Soluble</td>
</tr>
<tr>
<td>Partition Coefficient: n-octanol/water:</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable

HAZARDOUS POLYMERIZATION.
Hazardous polymerisation does not occur.
HAZARDOUS THERMAL DECOMPOSITION / COMBUSTION PRODUCTS
In case of fire, gives off (emits): Carbon oxides; Nitrogen Oxides; Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.; Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

INCOMPATIBLE MATERIALS
Avoid contact with: Strong oxides. Acids. Halogens.

CONDITIONS TO AVOID
None known.

11. TOXICOLOGICAL INFORMATION

GENERAL
The following information is applicable to a component of this material.

ACUTE ORAL
BDMAEE; LD50; Species: Rat; 677 mg/kg;

Repeated dose toxicity
No data available.

ACUTE DERMAL
BDMAEE; LD50; Species: Rabbit; 235 mg/kg;

ACUTE INHALATION
BDMAEE; LC50; Species: Rat; 143 ppm; Remarks: Toxicity following inhalation exposure of vapor is directly related to the relative humidity of the atmosphere.,At typical ambient humidity (i.e.,>=50%), mild irritation to the respiratory tract and eyes is anticipated. At low humidity (<50%), more severe irritation and systemic toxicity is expected. ,At low humidity (< 50%), respiratory and eye irritation are expected to be more severe.

OTHER
Contains one or more amines which may react with nitrites or other nitrosating agents to form nitrosamines. Some nitrosamines have been shown to be carcinogenic in laboratory animals.

GENETIC TOXICITY IN VITRO
No data available.

GENETIC TOXICITY IN VIVO
No data available.

SENSITIZATION
BDMAEE; Species: Guinea Pig; Result: Did not cause sensitization on laboratory animals.
SKIN IRRITATION.
BDMAEE; Species: Rabbit; Result: Corrosive

EYE IRRITATION
BDMAEE; Species: Rabbit; Result: Corrosive

MUTAGENICITY
No data available.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGY
All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Safety Data Sheet.

Elimination information (persistence and degradability)

Biodegradation
Result: The product is not readily biodegradable.
Method: OECD-Guideline 301 F (Manometric Respirometry Test)
Literature Reference

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

Canadian TDG Shipping Name: Amines, liquid, corrosive, n.o.s.(Bis(2-dimethylaminoethyl)ether)
TDG HAZARD CLASS: 8
TDG LABEL (S): 8
UN/NA NUMBER: UN2735
PACKING GROUP: II

IMDG SHIPPING NAME: Amines, liquid, corrosive, n.o.s.(Bis(2-dimethylaminoethyl)ether)
Class: 8
IMDG-Labels: 8
15. REGULATORY INFORMATION

Inventories
- Australia Inventory of Chemical Substances (AICS) y (positive listing)
- EU list of existing chemical substances y (positive listing)
- Japan Inventory of Existing & New Chemical Substances (ENCS) y (positive listing)
- China Inventory of Existing Chemical Substances y (positive listing)
- Korea Existing Chemicals Inventory (KECI) y (positive listing)
- Canada DSL Inventory y (positive listing)
- Canada NDSL Inventory n (Negative listing)
- New Zealand Inventory of Chemicals y (positive listing)
- Philippines Inventory of Chemicals and Chemical Substances (PICCS) y (positive listing)
- TSCA list y (positive listing)

For inventories that are marked as quantity restricted or special cases, please contact Momentive.

Canadian Regulatory Information

WHMIS CLASSIFICATION
- Corrosive Material, Combustible liquid., Toxic Material Causing Immediate and Serious Toxic Effects

CPR Compliance
- This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.
US Regulatory Information

SARA (311,312) HAZARD CLASS
Acute Health Hazard; Fire Hazard

CALIFORNIA PROPOSITION 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

OTHER
These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

C = ceiling limit    NEGL = negligible
EST = estimated      NF = none found
NA = not applicable  UNKN = unknown
NE = none established REC = recommended
ND = none determined V = recommended by vendor
SKN = skin          TS = trade secret
R = recommended     MST = mist
NT = not tested      STEL = short term exposure limit
ppm = parts per million  ppb = parts per billion
By-product= reaction by-product, TSCA inventory status not required under 40 CFR part 720.30(h-2).