Section 1: Product and Company Identification

Product Name: ADDOCAT® 108 374D
Article Number: 2280492
Chemical Family: (Tertiary Amine / Glycol) Mixture
Chemical Name: (Bis(2-dimethylaminoethyl)Ether/Dipropylene Glycol) Mixture

Section 2: Composition/Information on Ingredients

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name/ CAS Number</th>
<th>Exposure Limits</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(Dimethylaminoethyl) Ether 3033-62-3</td>
<td>OSHA (PEL): Not Established</td>
<td>60% 100%</td>
</tr>
<tr>
<td></td>
<td>ACGIH (TLV):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.05 ppm TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.33 mg/m3 TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.15 ppm STEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.98 mg/m3 STEL</td>
<td></td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

EMERGENCY OVERVIEW

WARNING! Corrosive. Toxic. Color: Colorless to Yellow Form: Liquid Odor: Ammonia-like
May cause eye, skin, and respiratory tract burns. May cause eye, skin, and respiratory tract irritation. Harmful if inhaled. May cause allergic skin reaction. May be harmful if absorbed through skin. May cause a temporary fogging of the eyes. Harmful if
swallowed. Use water as fog or mist; solid streams may spread fire. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Toxic gases/fumes are given off during burning or thermal decomposition.

POTENTIAL HEALTH EFFECTS

Route(s) of Entry: Inhalation, Skin Contact, Eye Contact, Ingestion, Skin Absorption

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation Hazards
Acute Inhalation Hazards: Inhalation of aerosols, mists, fogs of this product may irritate and/or severely damage contacted tissue and mucous membranes of the respiratory tract. It is possible that scarring may occur.

Chronic Inhalation Hazards: None reported for this product as a whole.

Skin Hazards
Acute Skin Hazards: Contact of the undiluted product with the skin may cause severe irritation and pain. Depending on concentration and duration of contact this product may cause blistering, burns, and necrosis with permanent injury possible. This tertiary amine is absorbed through the skin and may cause malaise, discomfort and injury.

Chronic Skin Hazards: Repeated and/or prolonged contact with this product may cause dermatitis or other allergic skin reactions.

Eye Hazards
Acute Eye Hazards: Product vapor in low concentrations can cause lacrimation, conjunctivitis and corneal edema when absorbed into the tissue of the eye from the atmosphere. Corneal edema may give rise to a perception of "blue haze or halos" or "fog" around lights. The effect is transient and has no known residual effects. Contact of undiluted product with the eyes can cause severe irritation and pain and may cause permanent injury.

Chronic Eye Hazards: In addition to effects listed in acute exposure, repeated or prolonged contact may result in conjunctivitis.

Ingestion Hazards
Acute Ingestion Hazards: Not a likely route of exposure. However if ingested, this product may cause severe gastrointestinal distress with blistering or burns of the mouth, throat, esophagus, and stomach possible. Other symptoms could include headache, nausea, and vomiting.

Chronic Ingestion Hazards: None reported for this product as a whole.

Carcinogenic Components:
NTP: None
None

IARC: None
None

OSHA: None
None
Medical Conditions Aggravated by Exposure: May aggravate existing eye or skin conditions.

Section 4: First Aid Measures

First Aid for Eye: In case of contact, flush eyes with large quantities of water for at least 15 minutes. The eyelids should be held apart during irrigation to ensure thorough flushing of all eye tissue. Call a physician immediately.

First Aid for Skin: Immediately remove contaminated clothing and shoes. In case of skin contact, wash affected areas with soap and water. Call a physician immediately.

First Aid for Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

First Aid for Ingestion: Call a physician immediately. Give victim one or two glasses of water or milk. If material is ingested, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Note to Physician: Treat symptomatically.

Section 5: Fire Fighting Measures

Flash Point: 176 °F (80 °C) Cleveland Open Cup (ASTM D-92)

Flammable Limits: Not Established

Upper Explosion Limit (UEL %): Not Established

Lower Explosion Limit (LEL %): Not Established

Auto-ignition Temperature: Not Established

Extinguishing Media:

Suitable: Water, Foam, Dry Chemical, Water spray for large fires, Carbon Dioxide, Sand

Special Fire Fighting Procedures: A solid stream of water directed into the burning material could spread the fire. Evacuate non-emergency personnel to a safe area. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. Use cold water spray to cool fire exposed containers. During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion.

Unusual Fire/Explosion Hazards: Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion hazard.
Section 6: Accidental Release Measures

Spill or Leak Procedures: Extinguish all ignition sources. Emergency clean-up personnel should wear appropriate protection when entering the spill area for clean-up. Keep unnecessary personnel out of spill area. Do not allow spilled or released material to enter ground water, waste water or soil. Notify local health authorities and other appropriate agencies if such contamination should occur. Place in properly marked containers for disposal. Vermiculite absorbent can be spread over the spill area to absorb as much of the remaining product as possible. Scoop up solid absorbent for waste disposal. Spill area can be washed with water. Collect for disposal. Ventilate area to remove vapors.

Other Accidental Release Notes: Rhein Chemie requires that CHEMTREC be immediately notified (800-424-9300) when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Such notification must be immediate and made by the person having knowledge of the release. Distribution includes transportation, storage incidental to transportation, loading and unloading.

Section 7: Handling and Storage

Storage Temperature: Store at ambient conditions

Shelf Life: Not Established

Special Sensitivity: Heat and sources of ignition.

Handling/Storage Precautions: Keep away from heat, sparks and flames. Store in a dry place away from excessive heat. Store in steel containers. Recommended suitable container material includes plastic, stainless, and carbon steels. Keep container tightly closed when not in use. All handling equipment should be properly grounded to prevent the build-up of electrostatic charges. Avoid contact with skin or clothing. Avoid breathing dusts, vapors or mists. Storage area should be equipped with sprinkler system. Handle in accordance with good industrial hygiene and safety practices.

Section 8: Exposure Controls/Personal Protection

Personal Protection Equipment

Eye Protection Requirements: Contact lenses should not be worn., Chemical safety goggles, full-face shield., Safety glasses with side shields or goggles are recommended.

Skin Protection Requirements: Butyl or nitrile gloves, chemical protective clothing (butyl or latex) and neoprene boots are recommended.

Ventilation Requirements: Use local exhaust ventilation if dusting or misting is a problem, to
maintain air levels below the recommended exposure limit. Explosion proof and general local exhaust ventilation with 12 - 30 changes per hour are recommended when working with this product.

**Respirator Requirements:**
The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA). Chemical cartridge respirator with face piece to protect against the organic vapor; supplied air respirator with full face piece; or in high vapor concentrations use self-contained breathing apparatus in pressure demand mode.

**Additional Protective Measures:**
Emergency showers and eye wash stations should be available. Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees on the safe use and handling of this product.

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**Section 9: Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Physical Form:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>Colorless to Yellow</td>
</tr>
<tr>
<td>Odor:</td>
<td>Ammonia-like</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>Not Established</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>Not Established</td>
</tr>
<tr>
<td>Melting/Freezing Point:</td>
<td>Not Established</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>Not Established</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>Soluble</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>0.9 @ 68 °F (20 °C)</td>
</tr>
<tr>
<td>Bulk Density:</td>
<td>Not Established</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>Not Established</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>Not Established</td>
</tr>
<tr>
<td>VOC by Weight:</td>
<td>100 % Calculated Value</td>
</tr>
<tr>
<td>HOC by Weight:</td>
<td>None</td>
</tr>
</tbody>
</table>

**Section 10: Stability and Reactivity**

<table>
<thead>
<tr>
<th>Stability:</th>
<th>Stable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Polymerization:</td>
<td>Will not occur</td>
</tr>
<tr>
<td>Substances to Avoid:</td>
<td>Mineral acids (i.e. sulfuric, phosphoric, etc.), Organic acids (i.e. acetic acid, citric acid etc.), Oxidizing agents, Sodium or Calcium Hypochloride., Product slowly corrodes copper, aluminum, zinc and galvanized surfaces., Heat., Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.</td>
</tr>
<tr>
<td>Decomposition Products:</td>
<td>By heat or fire: carbon monoxide, carbon dioxide, oxides of nitrogen, and ammonia gas.</td>
</tr>
</tbody>
</table>
Section 11: Toxicological Information

**Toxicity Data for ADDOCAT® 108 374D**

*Toxicity Note:* No data available for this product.

**Toxicity Data for Bis(Dimethylaminoethyl) Ether**

*Acute oral toxicity:* LD50 = 1,070 mg/kg (Rat)

*Acute dermal toxicity:* 
  - LD50 = 280 uL/kg (Rabbit)
  - LD50 = > 250 mg/kg (Rabbit)

*Acute inhalation toxicity:* 
  - 117 ppm, 6 hrs, (Rat)
  - 2 mg/L, 1 hrs,

*Eye Irritation:* Severely irritating (Rabbit) Standard Draize Test

*Skin Irritation:* 
  - Severely irritating (Rabbit) Standard Draize Test
  - Severely irritating (Rabbit) Open Draize Test
  - Corrosive (Rabbit)

*Sensitization:* No sensitization. (Guinea pig) Maximization Test

Section 12: Ecological Information

**Ecological Data for ADDOCAT® 108 374D**

*Ecological Note:* No data available for this product.

**Ecological Data for Bis(Dimethylaminoethyl) Ether**

*Biodegradation:* < 20 %,

Section 13: Disposal Considerations

**Waste Disposal Method:** Disposal must be in compliance with federal, state and local environmental control regulations. If incinerated, toxic and corrosive combustion gases must be properly handled.

**Empty Container Precautions:** Empty container retains product residue and can be hazardous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat, flame, sparks, static electricity, or other sources of ignition. Recondition or dispose of empty container in accordance with government regulations.

Section 14: Transportation Information
Technical shipping name: Bis(2-dimethylaminoethyl)Ether / Dipropylene Glycol - Mixture

Freight Class
  Bulk: Chemicals, N.O.I. (NMFC 60000)
  Package: Chemicals, N.O.I. (NMFC 60000)

Product Label: Product Label Established

Domestic Surface Transportation (DOT)
Proper Shipping Name: Corrosive Liquids, Toxic, N.O.S.
Hazard Class or Division: 8, 6.1
UN/NA Number: UN2922
Packing Group: III
Hazard Label(s): Corrosive, Toxic
Hazard Placard(s): Corrosive, Toxic

Marine Transportation (IMO / IMDG)
Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
Hazard Class Division: 8, 6.1
Number:
UN Number: UN2922
Packaging Group: III
Hazard Label(s): Corrosive, Toxic
Hazard Placard(s): Corrosive, Toxic

Air Transportation (ICAO / IATA)
Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
Hazard Class Division: 8
Number:
UN Number: UN2922
Subsidiary Risk: 6.1
Packaging Group: III
Hazard Label(s): Corrosive, Toxic
Radioactive?: Non-Radioactive
Passenger Air - Max. Qty.: 5 L
Passenger Packing Instruction: 818
Cargo Air - Max. Qty.: 60 L
Cargo Air Packing Instruction: 820

Section 15: Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

TSCA Inventory List: On TSCA Inventory

CERCLA Hazardous Substance:
  Component(s) Reportable Quantity
  None

Material Name: ADDOCAT® 108 374D  Article Number: 2280492
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SARA Title III

SARA Section 302 Extremely Hazardous Substances:

| Component(s)/CAS Number | None |

SARA Section 311/312 Hazard Categories:

Immediate Health Hazard, Fire Hazard

SARA Section 313 Toxic Chemicals:

| Component(s)/CAS Number | Reporting Threshold Min. | Max. |

RCRA Status:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product, should be classified as a hazardous waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

State Right-to-Know Information

| Component(s)/CAS Number | State Code | Concentration Min. | Max. |

State Code Translation Table

PA-N = Pennsylvania Non-hazardous
PA-H = Pennsylvania Hazardous Substance List
NJ-N = New Jersey Other - includes predominant ingredients

Foreign Chemical Inventory List(s)

EINECS (Europe): Listed
DSL (Canada): Listed

Section 16: Other Information

HMIS Rating

| Health | 3 |
| Flammability | 2 |
| Reactivity | 0 |

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
*Chronic Health Hazard
RHEIN CHEMIE CORPORATION’s method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by RHEIN CHEMIE CORPORATION as a customer service.

Contact: HES Dept.
Phone: (440) 285-3547
MSDS Number: R36314
Version Date: 06/28/2006
MSDS Version: 2.0

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Indicates Relevant Change Made.