MATERIAL SAFETY DATA SHEET

ADDOCAT KE-9018  363D

RHEIN CHEMIE CORPORATION
145 Parker Court
Chardon, OH 44024

TRANSPORTATION EMERGENCY
CALL CHEMTREC........ : (800) 424-9300
INTERNATIONAL .......... : (703) 527-3887

NON-TRANSPORTATION
RCC EMERGENCY PHONE : (440) 285-3547
RCC INFORMATION PHONE: (800) 289-2436

Section 1: Product and Company Identification

Product Name: ADDOCAT KE-9018  363D
Article Number: 2280484
Chemical Family: Aliphatic Diamines
Chemical Name: N,N-Dimethyl-1,3-propanediamine

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>Dimethylaminopropyl Amine</td>
<td>OSHA (PEL):</td>
<td>95%</td>
</tr>
<tr>
<td>109-55-7</td>
<td>Not Established</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH (TLV):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Established</td>
<td></td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

EMERGENCY OVERVIEW

DANGER! Corrosive. Flammable. Color: Colorless to Yellow Form: Liquid
Odor: Pungent odor (Amine like)
Causes respiratory tract burns. Causes skin burns. Causes eye burns. Causes digestive tract burns. Vapors may ignite explosively. Ground containers and equipment before transferring to avoid static sparks. 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

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation Hazards
Acute Inhalation Hazards: Per the supplier this material is considered corrosive in nature. Corrosive substances may cause symptoms of respiratory tract irritation possibly including coughing, choking, pain in the nose, mouth, and throat and burns of the mucous membranes. Harmful if inhaled.

Chronic Inhalation Hazards: Expected to be similar to those for acute inhalation.

Skin Hazards
Acute Skin Hazards: Product is considered corrosive to the skin and is expected to cause severe skin damage resulting in dermatitis and deep burns.

Chronic Skin Hazards: Effects of chronic skin exposure are expected to be similar to those listed for acute skin exposure. Effects depend on concentration and duration of exposure.

Eye Hazards
Acute Eye Hazards: Contact with the eyes, liquid and vapors, causes severe irritation, pain and burns, possibly severe. Injuries may be permanent (blindness). Effects depend on concentration and duration of exposure.

Chronic Eye Hazards: Effects are expected to be similar to those listed above for acute eye exposure.

Ingestion Hazards
Acute Ingestion Hazards: Ingestion of this product will cause severe irritation and burns of the mouth, throat, esophagus and stomach with abdominal pain, vomiting and diarrhea.

Chronic Ingestion Hazards: None reported for this product as a whole. However, depending on the concentration, repeated ingestion may cause effects as with acute ingestion.

Carcinogenic Components:
NTP: None
IARC: None
OSHA: None

Medical Conditions Aggravated by Exposure: May aggravate existing eye, skin or respiratory conditions. Persons with preexisting eye or respiratory tract conditions may be more susceptible to the effects of this product.

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: In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Call a physician immediately. Wash clothing and clean shoes before reuse.

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

First Aid for Ingestion: If material is ingested, do not induce vomiting unless directed to do so by medical personnel. Give victim one or two glasses of water or milk. Never give anything by mouth to an unconscious person. Should vomiting occur, keep patients head below hip level to prevent aspiration of fluid into the lungs. Call a physician immediately.

Note to Physician: Treat symptomatically.

Section 5: Fire Fighting Measures

Flash Point: 89.6 °F (32 °C) DIN 51755

FlammableLimits:
Upper Explosion Limit (UEL %): 12.35 @ 68 °F (20 °C)
Lower Explosion Limit (LEL %): 2.3 @ 68 °F (20 °C)
Auto-ignition Temperature: 419 °F (215 °C) ASTM D2155

Extinguishing Media:
Suitable: Water, Carbon Dioxide, Dry Chemical, Water spray for large fires., Foam, Halon

Special Fire Fighting Procedures:
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. A solid stream of water directed into the burning material could spread the fire. Contain fire fighting water for treatment and proper disposal. During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion.

Unusual Fire/Explosion Hazards: Vapors may form explosive mixtures with air.

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. 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. Cover the spill with absorbent material such as sand, sweeping compound or diatomaceous earth. Scoop up solid absorbent for waste 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.

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### Section 7: Handling and Storage

**Storage Temperature:** Not Established - Ambient Recommended  
**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. This product may form explosive vapor/air mixtures. Keep container tightly closed when not in use. Do not get in eyes. Do not get on skin or clothing. Store away from food and beverages. Storage area should be equipped with sprinkler system. All handling equipment should be properly grounded to prevent the build-up of electrostatic charges. Handle in accordance with good industrial hygiene and safety practices.

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### Section 8: Exposure Controls/Personal Protection

**Personal Protection Equipment**

**Eye Protection Requirements:** Chemical safety goggles, full-face shield. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face-shield.

**Skin Protection Requirements:** Permeation resistant gloves (neoprene, nitrile, or PVC) and impervious clothing (long sleeve shirts) are recommended. Cover as much of the exposed skin area as possible with appropriate clothing, coveralls, apron and boots.

**Ventilation Requirements:** Thermal processing equipment should be ventilated to control gases and fumes given off during processing. Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.

**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). Air purifying respirator equipped with a full-face organic vapor and dust/mist cartridge if vapors are near or exceeding the exposure limits listed in Section 2. In areas of high concentrations, confined space or other poorly ventilated areas and for large spill clean-up sites, fresh air-line respirators or self-contained breathing apparatus should be used. Observe OSHA regulations for respirator use (29 CFR 1910.134.)

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.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless to Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent odor (Amine like)</td>
</tr>
<tr>
<td>pH</td>
<td>12.7 in 5% in water</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>269.6 °F (132 °C)</td>
</tr>
<tr>
<td>Melting/Freezing Point</td>
<td>-58 °F (-50 °C)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>1 mPa.s @ 77 °F (25 °C)</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.82 @ 68 °F (20 °C)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>8 mmHg @ 68 °F (20 °C)</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur
Substances to Avoid: Oxidizing agents, Strong acids
Conditions to Avoid: Avoid heat, flames, sparks and other sources of ignition.
Decomposition Temperature: Not Established
Decomposition Products: Thermal decomposition may produce toxic oxides and fumes of the components of this product and other potentially toxic fumes, Oxides of carbon, Oxides of nitrogen, and other undetermined fragments.

Section 11: Toxicological Information

Toxicity Data for ADDOCAT KE-9018 363D
Toxicity Data for Dimethylaminopropyl Amine
Acute oral toxicity: LD50 = 1,870 mg/kg (Rat)
Acute dermal toxicity: LD50 = 600 uL/kg (Rabbit)

**Section 12: Ecological Information**

**Ecological Data for ADDOCAT KE-9018 363D**

**Ecological Data for Dimethylaminopropyl Amine**

**Fish Toxicity:** 500 mg/L, 48 hrs. Ide, silver or golden orfe (Leuciscus idus)

**Biodegradation:** > 60 %

**Ecological Note:** Water Pollution Class WGK 2 - impairment of water quality (German Water Resources Act)

**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. Incineration is the preferred method of disposal.

**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. Do not reuse empty container.

**Section 14: Transportation Information**

**Technical shipping name:** N,N-Dimethyl-1,3-propanediamine

**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:** Amines, Liquid, Corrosive, Flammable, N.O.S.
- **Hazard Class or Division:** 8. 3
- **UN/NA Number:** UN2734
- **Packing Group:** II
- **Hazard Label(s):** Corrosive, Flammable Liquid
- **Hazard Placard(s):** Corrosive, Flammable

**Marine Transportation (IMO / IMDG)**
Proper Shipping Name: Amines, Liquid, Corrosive, Flammable, N.O.S.
Hazard Class Division Number: 8, 3
UN Number: UN2734
Packaging Group: II
Hazard Label(s): Corrosive, Flammable Liquid
Hazard Placard(s): Corrosive, Flammable Liquid

Air Transportation (ICAO / IATA)
Proper Shipping Name: Amines, Liquid, Corrosive, Flammable, N.O.S.
Hazard Class Division Number: 8
UN Number: UN2734
Subsidiary Risk: 3
Packing Group: II
Hazard Label(s): Corrosive, Flammable Liquid
Radioactive?: Non-Radioactive
Passenger Air - Max. Qty.: 1 L
Passenger Packing Instruction: 808
Cargo Air - Max. Qty.: 30 L
Cargo Air Packing Instruction: 812

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

SARA Title III
SARA Section 302 Extremely Hazardous Substances:
Component(s)/ Concentration
CAS Number Min. Max.
None

SARA Section 311/312 Hazard Categories:
Immediate Health Hazard, Fire Hazard

SARA Section 313 Toxic Chemicals:
Component(s)/ Reporting Concentration
CAS Number Threshold Min. Max.
None

RCRA Status: When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA Hazardous Waste Number D001). (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**

<table>
<thead>
<tr>
<th>Component(s)/CAS Number</th>
<th>State Code</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethylaminopropyl Amine 109-55-7</td>
<td>PA-H, NJ-N, MA-H</td>
<td>95%</td>
</tr>
</tbody>
</table>

**State Code Translation Table**

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

**Foreign Chemical Inventory List(s)**

- EINECS (Europe): Listed
- DSL (Canada): Listed
- AICS (Australia): Listed
- MITI (Japan): Listed
- MOE (Korea): Listed
- PICCS (Philippines): Listed

**Section 16: Other Information**

**HMIS Rating**

Health | 3  
Flammability | 3  
Reactivity | 1  
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: 00000001880  
Version Date: 06/29/2006  
MSDS Version: 2.0

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Indicates Relevant Change Made.