Section 1: Product and Company Identification

Product Name: ADDOCAT 117 50kgBKA/400kgPAL
Article Number: 1174138

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>Amine compound</td>
<td>OSHA (PEL):</td>
<td>100%</td>
</tr>
<tr>
<td>CAS# is a trade secret</td>
<td>Not Established</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH (TLV):</td>
<td>Not Established</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

EMERGENCY OVERVIEW

WARNING! Flammable. Color: Light Yellow  Form: Liquid  Odor: Not Established
Harmful if inhaled or ingested. Causes respiratory tract burns. Causes skin burns. May be harmful if absorbed through skin. Causes eye burns. Vapors may spread long distances and ignite.

POTENTIAL HEALTH EFFECTS

Route(s) of Entry: Inhalation, Skin Contact, Skin Absorption, Eye Contact, Ingestion
HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation Hazards
Acute Inhalation Hazards: May be harmful if inhaled. 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. Exposure to high vapor concentrations may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs).

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

Skin Hazards
Acute Skin Hazards: Contact may lead to burns associated with severe reddening and swelling of the affected area. Contact with fumes from the hazardous component(s) may cause irritation to the skin. 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.

Chronic Eye Hazards: Effects depend on concentration and duration of exposure.

Ingestion Hazards
Acute Ingestion Hazards: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract.

Chronic Ingestion Hazards: None reported

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

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. 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.
First Aid for Ingestion: If material is ingested, do not induce vomiting unless directed to do so by medical personnel. Call a physician immediately.

Note to Physician: Inducing vomiting is contraindicated because of the irritating nature of the product.

Section 5: Fire Fighting Measures

Flash Point: 21 °C

Flammable Limits:
- Upper Explosion Limit (UEL %): Not Established
- Lower Explosion Limit (LEL %): Not Established

Auto-ignition Temperature: Not Established

Extinguishing Media:
- Suitable: Water, Foam, Dry Chemical, Carbon Dioxide

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. Contain fire fighting water for treatment and proper disposal. During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion. Use cold water spray to cool fire exposed containers.

Section 6: Accidental Release Measures

Spill or Leak Procedures: Extinguish all ignition sources. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment, including respiratory equipment during clean-up. (See Employee Protection Recommendations). Cover spill with absorbent material, such as sand, sweeping compound or diatomaceous earth; collect material for disposal.

Other Accidental Release Notes: Spilled material is slippery on walkways and hard surfaces.

Section 7: Handling and Storage

Storage Temperature: Not Established - Ambient Recommended

Shelf Life: Not Established

Handling/Storage Precautions: Do not get on skin or clothing. Do not get in eyes. Do not taste or immediately.
swallow. Do not breath dust, vapors or mist. Do not store with incompatible materials. Keep away from heat, sparks and flames. Store in a dry place away from excessive heat. Use with adequate ventilation.

Section 8: Exposure Controls/Personal Protection

Personal Protection Equipment

Eye Protection Requirements: In a splash hazard environment chemical goggles should be used in combination with a full face-shield. If vapor exposure is causing irritation, use a full-face, air-supplied respirator.

Skin Protection Requirements: Permeation resistant gloves (neoprene, nitrile, or PVC) and impervious clothing (long sleeve shirts) are recommended.

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

Respirator Requirements: 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.

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

Physical Form: Liquid
Color: Light Yellow
Odor: Not Established
pH: 9.5
Boiling Point: 130 °C
Melting/Freezing Point: Not Established
Softening Point: Not Applicable
Pour Point: Not Established
Viscosity: Not Established
Solubility in Water: Not Established
Specific Gravity: 1.27
Bulk Density: Not Established
Vapor Pressure: Not Established
Vapor Density: Not Established

Section 10: Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur
Substances to Avoid: Acids, Isocyanates
Conditions to Avoid: Avoid heat, flames, sparks and other sources of ignition.
Decomposition Temperature: Not Established
Decomposition Products: Oxides of carbon, Oxides of nitrogen

Section 11: Toxicological Information

Toxicity Data for ADDOCAT 117 50kgBKA/400kgPAL
Acute oral toxicity: LD50 = 2,800 mg/kg (Rat)  Source: Bayer AG Safety Data Sheet
Eye Irritation: Corrosive  Source: Bayer AG Safety Data Sheet
Skin Irritation: Corrosive  Source: Bayer AG Safety Data Sheet
Sensitization: No sensitization. (Guinea pig)  Source: Bayer AG Safety Data Sheet

Toxicity Data for Amine compound
Toxicity Note: No data available for this component.

Section 12: Ecological Information

Ecological Data for ADDOCAT 117 50kgBKA/400kgPAL
Fish Toxicity: 100 mg/L, 96 hrs. Zebra barbel (Danio rerio)  Source: Bayer AG Safety Data Sheet
Invertebrate Toxicity: Begins at 100 mg/L, 48 hrs. Water flea (Daphnia magna)  Source: Bayer AG Safety Data Sheet
Biodegradation: 90 %  Source: Bayer AG Safety Data Sheet
Ecological Note: Material is very easily biodegradable.

Ecological Data for Amine compound
Ecological Note: No data available for this component.

Section 13: Disposal Considerations

Waste Disposal Method: Disposal must be in compliance with federal, state and local environmental control regulations.
Empty Container Precautions: Do not introduce isocyanates into empty container. Recondition or dispose of empty container in accordance with government regulations. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat, flame, sparks, static electricity, or other
sources of ignition.

**Other Disposal 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 14: Transportation Information

**Technical shipping name:** N,N'-Dimethylpiperazine

**Product Label:** Product Label Established

### Domestic Surface Transportation (DOT)

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>AMINES, FLAMMABLE, CORROSIVE, N.O.S. N,N'-DIMETHYLPIPERAZINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class or Division</td>
<td>3, 8</td>
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<tr>
<td>UN/NA Number</td>
<td>UN2733</td>
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<tr>
<td>Packing Group</td>
<td>II</td>
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<tr>
<td>Hazard Label(s)</td>
<td>Flammable Liquid, Corrosive</td>
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<tr>
<td>Hazard Placard(s)</td>
<td>Flammable, Corrosive</td>
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### Marine Transportation (IMO / IMDG)

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>AMINES, FLAMMABLE, CORROSIVE, N.O.S. N,N'-DIMETHYLPIPERAZINE</th>
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</thead>
<tbody>
<tr>
<td>Hazard Class Division</td>
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<tr>
<td>Number</td>
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<tr>
<td>UN Number</td>
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<tr>
<td>Packaging Group</td>
<td>II</td>
</tr>
<tr>
<td>Hazard Label(s)</td>
<td>Flammable Liquid, Corrosive</td>
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<tr>
<td>Hazard Placard(s)</td>
<td>Flammable Liquid, Corrosive</td>
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</tbody>
</table>

### Air Transportation (ICAO / IATA)

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>AMINES, FLAMMABLE, CORROSIVE, N.O.S. N,N'-DIMETHYLPIPERAZINE</th>
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</thead>
<tbody>
<tr>
<td>Hazard Class Division</td>
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<tr>
<td>Number</td>
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<tr>
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<tr>
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<td>Packing Group</td>
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<td>Non-Radioactive</td>
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<td>Passenger Packing Instruction:</td>
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<tr>
<td>Cargo Air - Max. Qty.:</td>
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<td>Cargo Air Packing</td>
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<tr>
<td>Instruction</td>
<td></td>
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</tbody>
</table>
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
Component(s)/ Concentration
CAS Number State Code Min. Max.
Amine compound PA-N, NJ-N 100%

State Code Translation Table
PA-N = Pennsylvania Non-hazardous
NJ-N = New Jersey Other - includes predominant ingredients

Section 16: Other Information

HMIS Rating

Health 3 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
Flammability 3
Reactivity 0 *

*=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: 00000005603
Version Date: 12/15/2006
MSDS Version: 1.0

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Indicates Relevant Change Made.