MSDS Number: B0030 Effective Date: 10/31/2001 Supercedes: 6/16/2001

**MSDS** Material Safety Data Sheet

*From:* Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

J.T.Baker®

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# BAKER ALEG® -310 Ash Residue Remover

## 1. Product Identification

**Synonyms:** BAKER ALEG® -310 Ash Residue Remover, Patented
**CAS No:** Not applicable to mixtures.
**Molecular Weight:** Not applicable to mixtures.
**Chemical Formula:** Not applicable to mixtures.
**Product Codes:** 6406, 6416

## 2. Composition/Information on Ingredients

| Ingredient | CAS No. | Percent | Hazardous |
|---|---|---|---|
| 1-Methyl-2-pyrrolidinone | 872-50-4 | 30 - 65% | Yes |
| Proprietary Solvent, TSRN004314011-5029 | N/A | 5 - 50% | Yes |
| Ethanolamine | 141-43-5 | 10 - 60% | Yes |
| Catechol | 120-80-9 | < 5% | Yes |

## 3. Hazards Identification

### Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. AFFECTS EYES, SKIN, RESPIRATORY SYSTEM, CENTRAL NERVOUS SYSTEM, LIVER, AND KIDNEY. MAY CAUSE ALLERGIC SKIN REACTION.

### J.T. Baker SAF-T-DATA ™ Ratings

(Provided here for your convenience)

| Health: | Flammability: | Reactivity: | Contact: |
|---|---|---|---|
| 2 - Moderate | 1 - Slight | 1 - Slight | 3 - Severe (Corrosive) |

**Lab Protection Equip:** GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER.
**Storage Color Code:** White (Corrosive)

### Potential Health Effects

**Inhalation:**

Inhalation can cause severe irritation of mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. High concentrations may cause lung damage. Higher exposure may affect the blood and central nervous system. Higher levels of exposure may cause damage to the kidneys and liver.

**Ingestion:**

Corrosive. Swallowing can cause burning pain in mouth, throat, esophagus, and stomach. May cause abdominal pain, headache, dizziness, muscular weakness, irregular breathing, coma, and possibly death. May affect the liver and lung. With catechol exposure, convulsions are more marked than with phenol exposure, and blood dyscrasias (imbalance of components of the blood) have been noted. May interfere with blood's capability to carry oxygen (methemoglobinemia), as evidenced by bluish color to skin and lips.

**Skin Contact:**

Corrosive. Symptoms of redness, pain, and severe burn can occur. May be absorbed through the skin with possible systemic effects. May cause allergic skin reactions.

**Eye Contact:**

Corrosive. Redness, pain, blurred vision may occur. May cause severe damage and blindness.

**Chronic Exposure:**

Repeated exposure may cause symptoms similar to those listed for acute effects.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems or impaired respiratory function, or impaired liver or kidney function may be more susceptible to the effects of the substance.

## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

## 5. Fire Fighting Measures

**Fire:**

Flash point: > 100°C (> 212°F) CC
Contact with strong oxidizers may cause fire.

**Explosion:**

Sealed containers may rupture when heated. Above the flash point, explosive vapor-air mixtures may be formed.

**Fire Extinguishing Media:**

Use alcohol foam, dry chemical or carbon dioxide. (Water may be ineffective.) Water spray may be used to keep fire exposed containers cool.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from heat, ignition sources and oxidizing agents. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

For Ethanolamine:
- OSHA Permissible Exposure Limit (PEL) -
  3 ppm (TWA)
- ACGIH Threshold Limit Value (TLV) -
  3 ppm (TWA), 6 ppm (STEL)

For Catechol:
- ACGIH Threshold Limit Value (TLV) -
  5 ppm (TWA) skin, A3 - animal carcinogen.
- NIOSH Recommended Exposure Limits (RELs) -
  5 ppm (TWA) skin.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

**Personal Respirator (NIOSH Approved)**

If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type N95 or better filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH N 100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P particulate filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

**Appearance:**
Clear, light orange liquid.
**Odor:**
Amine-like odor
**Solubility:**
Complete (100%)
**Specific Gravity:**
1.06
**pH:**
10.8 (5% solution)
**% Volatiles by volume @ 21°C (70°F):**
100

**Boiling Point:**
115°C (239°F)
**Melting Point:**
- 40°C (-40°F)
**Vapor Density (Air=1):**
No information found.
**Vapor Pressure (mm Hg):**
No information found.
**Evaporation Rate (BuAc=1):**
0.23

## 10. Stability and Reactivity

**Stability:**
Stable under ordinary conditions of use and storage.
**Hazardous Decomposition Products:**
Oxides of carbon, sulfur and nitrogen may form when heated to decomposition.
**Hazardous Polymerization:**
Will not occur.
**Incompatabilities:**
For 1-Methyl-2-Pyrrolidinone: Strong oxidants and acids. Reacts with chlorinating agents to form the amide. Reacts with sulfur or carbon disulfide at high temperatures and pressures. For Ethanolamine: Sulfuric acid, hydrochloric acid, acetic acid, carbon dioxide in the air, copper, copper alloys, galvanized iron, aluminum, acetic anhydride, acrolein, acrylic acid, acrylonitrile, chlorosulfonic acid, epichlorohydrin, hydrofluoric acid, mesityl oxide, nitric acid, oleum, beta-propiolactone, and vinyl acetate. For Catechol: Acid chlorides, acid anhydrides, bases, and oxidizing agents.
**Conditions to Avoid:**
Heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

LD50 Oral Rat:
3914 mg/kg for 1-Methyl-2-Pyrrolidinone;
1720 mg/kg for Ethanolamine;
260 mg/kg for Catechol.
LD50 Skin Rabbit:
8000 mg/kg for 1-Methyl-2-Pyrrolidinone;
1000 mg/kg for Ethanolamine;
800 mg/kg for Catechol.
1-Methyl-2-pyrrolidinone and ethanolamine have been investigated as a mutagen and reproductive effector; catechol has been investigated as a tumorigen, mutagen and reproductive effector.

**Cancer Lists**

| Ingredient | —NTP Carcinogen— Known | Anticipated | IARC Category |
|---|---|---|---|
| 1-Methyl-2-pyrrolidinone (872-50-4) | No | No | None |
| Proprietary Solvent. TSRN004314011-5029 | No | No | None |
| Ethanolamine (141-43-5) | No | No | None |
| Catechol (120-80-9) | No | No | 2B |

## 12. Ecological Information

**Environmental Fate:**

When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into water, this material is not expected to evaporate significantly. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

**Environmental Toxicity:**

For 1-Methyl-2-pyrrolidinone: The LC50/96-hour values for fish are over 100 mg/l.
For Catechol: The LC50/96-hour values for fish are between 1 and 10 mg/l.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

**Domestic (Land, D.O.T.)**

**Proper Shipping Name:** RQ, CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (ETHANOLAMINE, CATECHOL)
**Hazard Class:** 8
**UN/NA:** UN3267 **Packing Group:** II
**Information reported for product/size:** 440LB

**International (Water, I.M.O.)**

**Proper Shipping Name:** CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (ETHANOLAMINE, CATECHOL)
**Hazard Class:** 8
**UN/NA:** UN3267 **Packing Group:** II
**Information reported for product/size:** 440LB

## 15. Regulatory Information

**Chemical Inventory Status**

| Ingredient | TSCA | EC | Japan | Australia | Korea | Canada DSL | Canada NDSL | Phil. |
|---|---|---|---|---|---|---|---|---|
| 1-Methyl-2-pyrrolidinone (872-50-4) | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes |
| Proprietary Solvent, TSRN004314011-5029 | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes |
| Ethanolamine (141-43-5) | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes |
| Catechol (120-80-9) | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes |

**Federal, State & International Regulations**

| Ingredient | SARA 302 RQ | SARA 302 TPQ | SARA 313 List | SARA 313 Chemical Catg. | CERCLA | RCRA 261.33 | TSCA 8(d) |
|---|---|---|---|---|---|---|---|
| 1-Methyl-2-pyrrolidinone (872-50-4) | No | No | Yes | No | No | No | No |
| Proprietary Solvent, TSRN004314011-5029 | No | No | No | No | No | No | No |
| Ethanolamine (141-43-5) | No | No | No | No | No | No | No |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Catechol (120-80-9) | No | No | Yes | No | 100 | No | Yes |

**Chemical Weapons Convention:** No **TSCA 12(b):** Yes **CDTA:** Yes

**SARA 311/312:** Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Mixture / Liquid)

**Warning:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

**Australian Hazchem Code:** None allocated. **Australian Poison Schedule:** None allocated.

**WHMIS:** This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:**

Health: 3 Flammability: 1 Reactivity: 1

**Label Hazard Warning:**

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. AFFECTS EYES, SKIN, RESPIRATORY SYSTEM, CENTRAL NERVOUS SYSTEM, LIVER, AND KIDNEY. MAY CAUSE ALLERGIC SKIN REACTION.

**Label Precautions:**

Do not get in eyes, on skin, or on clothing.
Do not breathe vapor or mist.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.

**Label First Aid:**

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.

**Product Use:**

Process Chemical

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 15.

**Disclaimer:**

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