Appendix C
Selected Cleaning Alternatives
Alternative Cleaners Examined During Preliminary Screening Tests for Coating and Adhesive Application Equipment Cleaning
Material Safety Data Sheet

I. General Information

Manufacturer: UNIVERSAL CHEMICAL TECHNOLOGIES
Trade Name & Synonyms: Power Kleen: Spray Clean 12
DOT Hazard Classification: Alkaline Liquid
Chemical Family: Mixture
Prep. NOS Shipping Name: Spray Clean 12
Prepared By: D.C. ATKINS & SONS, INC.
Date: 7/6/99

II. Ingredients

<table>
<thead>
<tr>
<th>Hazardous Component</th>
<th>CAS NUMBER</th>
<th>Percent</th>
<th>ACOTH PLX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not contain materials considered hazardous per 29 CFR 1910.1200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III. Physical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (°F)</td>
<td>Approx. 215 F</td>
</tr>
<tr>
<td>Flash Point (°F)</td>
<td>Approx. 18</td>
</tr>
<tr>
<td>Specific Gravity (H2O = 1)</td>
<td>1.1</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>Approx. 12</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Complete</td>
</tr>
<tr>
<td>Appearance &amp; Odor</td>
<td>Clear Liquid, No Odor</td>
</tr>
</tbody>
</table>

IV. Fire & Explosion Hazard Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition Method</td>
<td>NA</td>
</tr>
<tr>
<td>Flammable Limits</td>
<td>NA</td>
</tr>
<tr>
<td>Flashpoint Temperature</td>
<td>NA</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>NA</td>
</tr>
<tr>
<td>Liquid Fire Fighting Media</td>
<td>NA</td>
</tr>
<tr>
<td>Solvent Fire &amp; Explosion Hazard</td>
<td>NA</td>
</tr>
<tr>
<td>Intersolvent</td>
<td>NA</td>
</tr>
<tr>
<td>Non-Solvent</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note:

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3001 East Harmony Circle
Anaheim, CA 92807

714-701-9500

HAZARD RATING:
1. DRUG
2. POISON
3. AFFECT
4. EXPLOD
5. CORRODE
6. DISPOS
7. OTHER

LEGEND:
NOS = Not Established
NA = Not Applicable

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### V. Health Hazard Data

**Symptoms of Exposure and Routes of Entry**

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Severe irritation</th>
<th>See Section II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Irritation on prolonged contact</td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td>Not a normal route of entry</td>
<td></td>
</tr>
<tr>
<td>Ingestion</td>
<td>Not a normal route of entry</td>
<td></td>
</tr>
</tbody>
</table>

**First Aid**

- **Eyes:** Flush with water for 15 minutes. Consult a physician if irritation persists.
- **Skin:** Wash with water. Remove contaminated clothing and footwear.
- **Ingestion:** Do not induce vomiting. Give plenty of water. Consult a physician immediately.

### VI. Reactivity Data

- **Stability:** Stable
- **Incompatibility:** Strong acids
- **Hazardous Polymerization:** May occur
- **Hazardous Decomposition Products:** Oxides of carbon or nitrogen

### VII. Environmental Protection Procedures

- **Spill Response:**
  - Small Spill: Absorb with suitable absorbent; discard as alkaline waste.
  - Large Spill: Dilute area, pump into suitable tank for recovery of disposal.
- **Waste Disposal Methods:** Neutralize to pH of approximately 7 using dilute acid. Check with sewer district before running down drain; check all applicable regulatory ordinances.

### VIII. Special Protection Information

- **Eye Protection:** Safety Glasses Recommended
- **Skin Protection:** Rubber Gloves and Apron suggested
- **Respiratory Protection:**
  - Not normally needed
  - Ventilation Recommended: General
- **Other Precautions:**
  - Eye wash area

### IX. Special Precautions

- **Hazard Precaution in Handling & Storage:**
  - Do not store with acidic materials
- **Other Precautions:**
  - Keep closures on containers when not in use.

**Disposal of Empty Containers**

Flush thoroughly with water before disposing.
SECTION I-IDENTIFICATION

PRODUCT: SOYGOLD® 1000
CAS No.: 67784-80-9
CHEMICAL: Fatty acid methyl esters
SYNONYMS: Methyl esters of soybean oil

SECTION II-INGREDIENTS AND HAZARD CLASSIFICATION

TYPICAL COMPOSITION
Alkyl C12-C16 Methyl Esters
This product contains no hazardous materials.
SARA HAZARD: TITLE III SECTION 313-Not listed FIRE (Section 311/312): None noted

EFFECTS OF OVEREXPOSURE
INHALATION: No known problems
INGESTION: LD50=50ml/kg (abirno rats/similar products)
EYE CONTACT: Not classified as an eye irritant
SKIN CONTACT: Not classified as a skin irritant or corrosive material

SECTION III-HEALTH INFORMATION
PEL: NO OSHA PEL TLV: NO ACGIH TLV

SECTION IV-OCCUPATIONAL EXPOSURE LIMITS

FOLLOW STANDARD FIRST AID PROCEDURES
SWALLOWING: Call physician or poison control center.
SKIN CONTACT: Wash affected area.
EYE CONTACT: Flush eyes with cool water for at least 15 minutes. Do not let victim rub eyes.
INHALATION: Immediately remove victim to fresh air. Get medical attention immediately.

SECTION VI-PHYSICAL DATA

BOILING POINT: Over 600°F (315°C) at 760 mm Hg pressure
MELTING POINT: 1°C
VAPOR PRESSURE: 1.8 mm Hg at 68°F
SPECIFIC GRAVITY: 0.882 g/ml at 25°C
DIELECTRIC STRENGTH: 42.4
SOLUBILITY IN WATER: Negligible at room temperature
APPEARANCE AND COLOR: Light yellow and liquid at room temperature
ODOR: Light vegetable oil odor

SECTION VII-FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: 425°F (220°C) (FMOC)
FLAMMABLE LIMITS: Not applicable
NFPA RATING: No NFPA rating
HMIS RATING: HEATH: 0 FIRE: 1 REACTIVITY: 0

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS
Treat as oil fire. Use water spray, dry chemical, foam or carbon dioxide.
UNUSUAL FIRE & EXPLOSION HAZARDS
Rags soaked with any solvent present a fire hazard and should always be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to spontaneous combustion. This product contains antioxidants to retard oxidation.

SECTION VIII-REACTIVITY

STABILITY: Stable
HAZARDOUS POLYMERIZATION: None likely
MATERIALS TO AVOID: Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS: CO₂, CO
CONDITIONS TO AVOID: None known

SECTION IX-EMPLOYEE PROTECTION

CONTROL MEASURES:
RESPIRATORY PROTECTION: Adequate ventilation
PROTECTIVE CLOTHING: None required
EYE PROTECTION: No need anticipated

SECTION X-ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS:
SPILL OR LEAK PRECAUTIONS: Avoid uncontrolled releases of this material into environment. Contain spilled material, Transfer to secure containers. Where necessary, collect using absorbent media.
WASTE DISPOSAL: Dispose of according to federal, state and/or local requirements.

SECTION XI-REGULATORY CONTROLS

DOT CLASSIFICATION: Class 55
DOT PROPER SHIPPING NAME: Charring Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS: Listed in TSCA Inventory

SECTION XII-PRECAUTIONS: HANDLING, STORAGE AND USAGE

No special precautions necessary.

SECTION XIII-DATE AND SIGNATURE

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company’s knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user’s responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.I.C.
9804 PFLUMM
LEXINGTON, KS 66051

SIGNATURE: [Signature]
PREPARED BY: WILLIAM A. AYRES  REVISION DATE: 5-01-01
UNUSUAL FIRE & EXPLOSION HAZARDS
Rags soaked with any solvent present a fire hazard and should always be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to oxidation. Oxidation, under certain conditions can lead to spontaneous combustion. This product contains antioxidants to retard oxidation.

SECTION VIII-REACTIVITY
STABILITY: Stable
HAZARDOUS POLYMERIZATION: None likely
MATERIALS TO AVOID: Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS: CO₂, CO
CONDITIONS TO AVOID: None known

SECTION IX-EMPLOYEE PROTECTION
CONTROL MEASURES: Adequate ventilation
RESPIRATORY PROTECTION: None required
PROTECTIVE CLOTHING: No need anticipated
EYE PROTECTION: None required

SECTION X-ENVIRONMENTAL PROTECTION
ENVIRONMENTAL PRECAUTIONS: Avoid uncontrolled releases of this material into environment.
SPILL OR LEAK PRECAUTIONS: Protect spill area. Avoid breathing contaminated air. Wear self-contained breathing apparatus. Store in a cool, dry, well-ventilated area. Do not incinerate. Contact local sanitary authorities if spills occur.
WASTE DISPOSAL: Dispose of according to federal, state and/or local requirements.

SECTION XI-REGULATORY CONTROLS
DOT CLASSIFICATION: Class 58
DOT PROPER SHIPPING NAME: Charring Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS: Listed in TSCA inventory

SECTION XII-PRECAUTIONS: HANDLING, STORAGE AND USAGE
No special precautions necessary.

SECTION XIII-DATE AND SIGNATURE
This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.L.C.
9804 PFEUMM
LENEXA, KS 66215

SIGNATURE: ____________________________
PREPARED BY: WILLIAM A. AYRES
REVISION DATE: 5-01-01
SECTION I - IDENTIFICATION

PRODUCT: SOYGOLD® 2000
CAS No.: 67784-89-9
CHEMICAL: Fatty acid methyl esters
SYNONYMS: Methyl esters of soybean oil

SECTION II - INGREDIENTS AND HAZARD CLASSIFICATION

TYPICAL COMPOSITION

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkyl C&lt;sub&gt;12&lt;/sub&gt;-C&lt;sub&gt;18&lt;/sub&gt;Methyl Esters</td>
<td>67784-89-9</td>
<td>97.99</td>
</tr>
<tr>
<td>Surfactant</td>
<td>9016-45-9</td>
<td>1.34</td>
</tr>
</tbody>
</table>

SARA HAZARD: TITLE III SECTION 313: Not listed
FIRE: (Section 311/312): None noted

SECTION III - HEALTH INFORMATION

EFFECTS OF OVEREXPOSURE

INHALATION: No known problems
INGESTION: LD<sub>50</sub> > 5000 mg/kg (albino rats) (similar products)
EYE CONTACT: Not classified as eye irritants
SKIN CONTACT: Not classified as a skin irritant or corrosive material

SECTION IV - OCCUPATIONAL EXPOSURE LIMITS

PEL: No OSHA PEL
TLV: No ACGIH TLV

SECTION V - EMERGENCY FIRST AID PROCEDURE

FOLLOW STANDARD FIRST AID PROCEDURES

SWALLOWING: Call physician or poison control center.
SKIN CONTACT: Wash affected area.
EYE CONTACT: Flush eyes with cool water for at least 15 minutes. Do not let victim rub eyes.
INHALATION: Immediately remove victim to fresh air. Get medical attention immediately.

SECTION VI - PHYSICAL DATA

BOILING POINT: Over 600°F (315°C) at 760 mm Hg pressure
MELTING POINT: >1°C
VAPOUR PRESSURE: 0.882 mm Hg at 25°C
SPECIFIC GRAVITY: 0.882 g/ml at 25°C
DIELECTRIC STRENGTH: >56.9
SOLUBILITY IN WATER: Negligible at room temperature
APPEARANCE AND COLOR: Light yellow to clear and liquid at room temperature
ODOR: Light vegetable oil odor

SECTION VII - FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: 425°F (224°C) (PMMC)
FLAMMABLE LIMITS: Not applicable
NFPA RATING: No NFPA rating
HMIS RATING: HEALTH: 0   FIRE: 1   REACTIVITY: 0
SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS
Treat as oil fire. Use water spray, dry chemical, foam or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS
Rags soaked with any solvent present a fire hazard and should always be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to oxidation. Oxidation, under certain conditions can lead to spontaneous combustion. This product contains antioxidants to retard oxidation.

SECTION VIII-REACTIVITY
STABILITY: Stable
HAZARDOUS POLYMERIZATION: None likely
MATERIALS TO AVOID: Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS: CO₂, CO
CONDITIONS TO AVOID: None known

SECTION IX-EMPLOYEE PROTECTION
CONTROL MEASURES:
RESPIRATORY PROTECTION: Adequate ventilation
PROTECTIVE CLOTHING: None required
EYE PROTECTION: No need anticipated

SECTION X-ENVIRONMENTAL PROTECTION
ENVIRONMENTAL PRECAUTIONS: Avoid uncontrolled releases of this material into environment.
SPILL OR LEAK PRECAUTIONS: Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media.
WASTE DISPOSAL: Dispose of according to federal, state and/or local requirements.

SECTION XI-REGULATORY CONTROLS
DOT CLASSIFICATION: Class 55
DOT PROPER SHIPPING NAME: Cleaning Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS: Listed in TSCA inventory

SECTION XII-PRECAUTIONS: HANDLING, STORAGE AND USAGE
No special precautions necessary.

SECTION XIII-DATE AND SIGNATURE
This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company’s knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user’s responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.L.C.
9804 PFLUMM
LENEXA, KS 66215

SIGNATURE: [signature]
PREPARED BY: WILLIAM A. AYRES
REVISION DATE: 5-01-01
ACETONE

MSDS Number: A0446 — Effective Date: 04/10/01

1. Product Identification

   Synonyms: Dimethylketone; 2-propanone; dimethylketal
   CAS No.: 67-64-1
   Molecular Weight: 58.06
   Chemical Formula: (CH₃)₂CO
   Product Codes:
   J.T. Baker: 5336, 5383, 5805, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9015, 9036, 9125, 9254, 9271, A134, V655
   Mallinckrodt: 0018, 2432, 2435, 2437, 2438, 2440, 2443, 2445, 2850, 18451, 11540, 11981

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

   Emergency Overview
   DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

   J.T. Baker SAF.T.DATA(R) Ratings (Provided here for your convenience)

   Health Rating: 1 - Slight

http://www.jtbaker.com/msds/A0446.htm

8/15/02
Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES, LAB COAT, VENT HOOD, PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dizziness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.

Ingestion:
Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.

Skin Contact:
Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.

Eye Contact:
Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Exposure:
Chronic Exposure: Prolonged or repeated skin contact may produce severe irritation or dermatitis.

Aggravation of Pre-existing Conditions:
Use of alcoholic beverages enhances toxics effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethylene.

4. First Aid Measures

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

Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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

5. Fire Fighting Measures

Fire:
Flash point: -20°C (-4°F) CC
Autoignition temperature: 465°C (869°F)
Flammable limits in air % by volume:
lel: 2.5; uel: 12.8
Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.

Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.
**Acetone**

**Fire Extinguishing Media:**
Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

**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.

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**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. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. 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.

J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of this product.

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**7. Handling and Storage**
Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatible. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. 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.

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**8. Exposure Controls/Personal Protection**

**Airborne Exposure Limits:**

Acetone:
- OSHA Permissible Exposure Limit (PEL):
  1000 ppm (TWA)
- ACGIH Threshold Limit Value (TLV):
  500 ppm (TWA), 750 ppm (STEL)

**A4 - not classifiable as a human carcinogen**

**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 Respirators (NIOSH Approved):**
If the exposure limit is exceeded, a half-face organic vapor respirator 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 organic vapor respirator 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 lower. 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.

**Skin Protection:**
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin
9. Physical and Chemical Properties

Appearance:
Clear, colorless, volatile liquid.

Odor:
Fragrant, mint-like

Solubility:
Miscible in all proportions in water.

Specific Gravity:
0.79 @ 20°C/4°C

pH:
No information found

% Volatiles by volume @ 21°C (70°F):
100

Boiling Point:
50.5°C (123°F) @ 760 mm Hg

Melting Point:
-95°C (-139°F)

Vapor Density (Air=1):
2.0

Vapor Pressure (mm Hg):
400 @ 39.5°C (103°F)

Evaporation Rate (BuAc=1):
c.a. 7.7

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 3800 mg/kg; Inhalation rat LC50: 50,000mg/m3; Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

http://www.jshaker.com/made/A0446.htm

8/15/02
12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into water, this material is expected to quickly evaporate. When released into water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Environmental Toxicity:
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 106 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. 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: ACETONE
Hazard Class: 3
UN/NA: UN1099
Packing Group: II
Information reported for product/size: 350LB

International (Water, L.M.O.)

Proper Shipping Name: ACETONE
Hazard Class: 3
UN/NA: UN1096
Packing Group: II
Information reported for product/size: 350LB

15. Regulatory Information

Chemical Inventory Status - Part I

Ingredient  TSCA EC  Japan  Australia

http://www.jtbaker.com/msds/A0446.htm  8/15/02
12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

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14. Transport Information

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

- Proper Shipping Name: ACETONE
- Hazard Class: 3
- UN/NA: UN1099
- Packing Group: II
- Information reported for product/size: 350LB

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

- Proper Shipping Name: ACETONE
- Hazard Class: 3
- UN/NA: UN1099
- Packing Group: II
- Information reported for product/size: 350LB

15. Regulatory Information

- Ingredient
- Chemical Inventory Status: Part I
- TSCA EC Japan Australia

http://www.jtbaker.com/msds/A0446.htm  8/15/02
16. Other Information

NFPA Ratings: Health 1 Flammability 3 Reactivity 0

Label Hazard Warning:
DANGER: EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Label Precautions:
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.

Label First Aid:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:
Laboratory Reagent.

Revision Information:
No changes.

http://www.jhakur.com/msds/A0446.htm
Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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Prepared by: Environmental Health & Safety
Phone Number: (314) 634-1600 (U.S.A.)

http://www.jtbaker.com/msds/A0446.htm

8/15/02
Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: METHYL ACETATE, ANHYDROUS, 96.5%
Brand: Aldrich Chemical

Company: Sigma-Aldrich
Street Address: 3550 South State Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 314 771 5852

Emergency Phone: 800 528 0761 Ext. 5596

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHYL ACETATE</td>
<td>75-55-1</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula: C3H6O2
Synonyme: Acetate di methane (French), Devoton, Ethyl ester acet of monoacetic acid, Methylacetaat (Dutch), Methylacetat (German), Methy acetate (ACGIH-OE-A), Metyle (aceuta de) (French), Methylester kiselyt acERVE (Czech), Methylethanoate, Metile (acetato di) (Italian), CLean methyl (Polish).

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water. Provided person is conscious, call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.
Eye Exposure  
In case of contact immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Flammable Hazard: Yes

Explosion Hazards: 
Vapor may travel considerable distances to source of ignition and flash back. Container explosion may occur under fire conditions.

Flash Point: -20.8 °F (-26 °C)

Explosion Limits: Lower: 31 %  Upper: 16 %

Autoignition Temp: 502 °C

Flammability: Yes

Extinguishing Media: 
Suitable: Water spray. Carbon dioxide, dry chemical, powder, or appropriate foam.

Firefighting Protective Equipment: 
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s): 
Flammable liquid. Emits toxic fumes under fire conditions.

Specific Method(s) of Fire Fighting: 
Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill: 
Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Protection(s): 
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up: 
Cover with dry-hydrant sand, or sand and soda ash. Place in covered containers using non-sparking tools and transport out of doors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling: 
User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage: 
Suitable: Keep container closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Special Requirements: 
Protected from moisture.

Section 8 - Exposure Controls / PPE

Engineering Controls: 
Safety shower and eye bath. Use non-sparking tools. Mechanical exhaust required.

Personal Protective Equipment: 
Aldrich Chemical Co 208986
Respiratory
NIOSH/MSHA-approved respirator

Hand
Compatible chemical-resistant gloves

Eye
Chemical safety goggles

General hygiene measures
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Exposure Limits, RTECS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>ACGIH</td>
<td>STEL</td>
<td>767 mg/m³ (260 ppm)</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>ACGIH</td>
<td>TWA</td>
<td>860 mg/m³ (300 ppm)</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>NIOSH</td>
<td>PEL</td>
<td>68 TWA 200 PPM (610 mg/m³)</td>
<td>check ACGIH TLV</td>
</tr>
<tr>
<td>New Zealand</td>
<td>CEL</td>
<td>TWA STEL</td>
<td>200 ppm - 350 ppm</td>
<td></td>
</tr>
</tbody>
</table>

Section 9 - Physical/Chemical Properties

Appearance
Physical State: Clear liquid
Color: Colorless

Molecular Weight: 74.08 AMU

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>at Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>AP/SP Range</td>
<td>58 – 58 °C</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>98 °C</td>
<td></td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>45 mm-Hg</td>
<td>20 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.55 g/l</td>
<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>SG Density</td>
<td>0.934 g/ml</td>
<td></td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flash Point °F</td>
<td>46.9 °F</td>
<td></td>
</tr>
<tr>
<td>Flash Point °C</td>
<td>-16 °C</td>
<td></td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>Lower: 3.1%</td>
<td>Upper: 16%</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>552 °C</td>
<td></td>
</tr>
<tr>
<td>Refractive Index</td>
<td>1.362</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Section 10 - Stability and Reactivity

Stability
Stable

Conditions to Avoid
Protect from moisture.
Materials to Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Causes eye irritation.

Inhalation
May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Target Organ(s) or Systems
Eyes, kidneys, central nervous system.

Signs and Symptoms of Exposure
Exposure can cause: Nausea, vomiting, headache, severe respiratory distress. Formic acid can be toxic to the liver, kidney, and central nervous system. Inhalation of formic acid may cause death. Formic acid is flammable.

RTCEO5 Number: A19100000

Toxicity Data
Oral - Rat: > 5000 mg/kg (LD50)
Rat - Rabbit: 5700 mg/kg (LD50)
Skin - Rabbit: > 5000 mg/kg (LD50)
Inhalation - Rat: 3700 mg/kg (LD50)

Inhalation Data
Skin - Rabbit: 100 mg/24H
Removes: Middle irritation effect
Skin - Rabbit: 20 mg/24H
Removes: Moderate irritation effect
Skin - Rabbit: 100 mg/24H
Removes: Moderate irritation effect

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Appropriate Method of Disposal or Substance or Preparation
Consult a licensed professional waste disposal service to dispose of this material.

Burn it in a chemical incinerator equipped with an afterburner and scrubber but wear extra care in handling as this material is highly flammable.
Section 14 - Transport Information

DOT
Proper Shipping Name: Methyl acetate
UN No.: 1231
Class: 3
Packing Group: II
P401: Not PH

IATA
Proper Shipping Name: Methyl acetate
IATA Number: 1231
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU Directives Classification
Symbol of Danger: F X1
Indication of Danger: Highly Flammable
Risk Statements: R: 11/26/68/67
Highly flammable, flaring to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and disorientation.
Safety Statements: S: 16/26/29/33
Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges.

US Classification and Label Text
Indication of Danger: Flammable (USA) - Highly Flammable (EU) - Intact.
Risk Statements: R: 11/26/68/67
Highly flammable, flaring to eyes and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and disorientation.
Safety Statements: S: 16/26/29/33
Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eyewash protection.

TSCA Inventory Item: Yes

Section 16 - Other Information

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2022 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
Alternative Tested at Southern California Screen Printing
MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Trade Name: SIEBERT AUTOWASH #3
Generic Name: Blanket Wash

Manufacturer: Siebert, Inc.
Address: 8134 West 47th Street
City: Lyons, State: IL Zip: 60534

DOT Hazard Classification: Not Regu
NPF Codes: Health - 0 Flammability - 0 Reactivity - 0
HNIS Codes: Health - 1 Flammability - 0 Reactivity - 0 Personal Protection - B

II. HAZARDOUS INGREDIENTS

If present, IARC, NTP, and OSHA carcinogens and chemicals subject to the reporting requirements of SARA Title III Section 313 are identified in this section.

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS Number</th>
<th>% wt</th>
<th>TLV</th>
<th>STEL</th>
<th>SARA TITLE III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty esters</td>
<td>Various</td>
<td>70 to 90</td>
<td>None established</td>
<td>None established</td>
<td>No</td>
</tr>
<tr>
<td>Surfactants</td>
<td>Various</td>
<td>15 to 30</td>
<td>None established</td>
<td>None established</td>
<td>No</td>
</tr>
</tbody>
</table>


III. PHYSICAL DATA

Boiling Point @ 760 mm Hg: 308 - 335°F
Vapor Pressure @ 80°F: <0.1 mm Hg
Specific Gravity @ 68°F: 0.92
Water Solubility (%): Insoluble
Specific Vapor Density (air=1): <1.0
% Volatile by Volume: <1.0
% Volatile Organic Compound(s): Clear golden liquid
Appearance: Typical organic odor
Odor:

IV. FIRE AND EXPLOSION DATA

Flash Point (Method): >300°F (TCC)
Explosive Limit: LEL - N/E UEL - N/E
Extinguishing Media: Water fog, carbon dioxide, or dry chemical
Unusual Fire Fighting Procedures: Wear self-contained breathing apparatus when fighting chemical fires
Unusual Fire and Explosion Hazards: Fine grays/mists may be combustible at temperatures below normal flash point. Rags soaked with material, stored for a long period while mixed with strong alkali or acidic materials, may smolder, then smoke, and may even ignite.

V. HEALTH HAZARD DATA

Eyes - May cause temporary irritation, redness, tearing, blurred vision. Contact lenses must not be worn when possibility exists for eye contact due to spraying liquid or airborne particles.
Skin - Prolonged or repeated contact may cause irritation.
Breathing - Excessive inhalation of vapors may cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness. Swallowing - Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

First Aid/Emergency Procedures
Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, quiet and get medical attention.
Skin Contact: Wash thoroughly with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
Eyes: Flush with copious amounts of water. Get medical attention.
Ingestion: Do not induce vomiting. If large quantity is swallowed, give lukewarm water (plain). NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get medical attention immediately. Risk of damage to lungs exceeds poisoning risk.
Primary Entry Routes: Inhalation, skin contact.
Chronic Health Effects: Chronic overexposure may aggravate existing skin, eye and lung conditions.

VI. REACTIVITY DATA

Stability: Stable.
Hazardous Polymerization: Cannot occur.
Incompatibilities: Avoid contact with strong oxidizing materials, strong alkalies, strong mineral acids.
Hazardous Decomposition Products: Carbon monoxide, oxides.
Conditions to Avoid: None

VII. SPILL OR LEAK PROCEDURES

Procedures for Spill/Leak:
Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks, etc.).
Small Spill - Absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to a recovery drum.
Large Spill - Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into recovery drums. Prevent run-off to sewers, streams or other bodies of water. Notify proper authorities, as required, that a spill has occurred.

Waste Management:

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection
If workplace exposure limits (TWA) are exceeded, a NIOSH/MSHA approved air supplied respirator is advised in the absence of proper engineering control. OSHA regulations also permit other NIOSH/MSHA respirators (negatable pressure type) under specific conditions. Engineering or administrative controls should be implemented to reduce exposure.

Ventilation: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain minimum exposure.
Eye Protection: Chemical Splash Proof Goggles and full face shield are advised for operations where eye or face contact can occur.

Gloves: Wear impervious gloves.
Other Protective Equipment: To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

IX. SPECIAL PRECAUTIONS
SIEBERT AUTOWASH #3

Special Handling/Storage:
To avoid skin contact and ingestion, wash hands and face well before eating or smoking. Do not permit food in work area. Avoid breathing mists if generated. Store at room temperature. Reseal container when not in use. Do not store near acids, bases or flammable liquids. Containers of this material should be rinsed when emptied, since emptied containers retain product residues (vapor, liquid, and/or solid). All hazard precautions given in this data sheet must be observed.

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given.

Date revised: 04/01/2001
jpm
Alternatives Tested at Nelson Nameplate
ACETONE

MSDS Number: A0446 — Effective Date: 04/10/01

1. Product Identification

Synonyms: Dimethyl ketone; 2-propanone; dimethyl ketone
CAS No.: 67-64-1
Molecular Weight: 58.08
Chemical Formula: (CH3)2CO
Product Codes:
J.T. Baker: 5356, 5180, 5835, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9015, 9036, 9125, 9254, 9271, 9134, V655
Malinckrodt: 0018, 2432, 2435, 2437, 2438, 2440, 2443, 2445, 2450, H451, H580, H981

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>99 - 100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA™ Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

http://www.jtbaker.com/msds/A0446.htm
ACETONE

Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.

Ingestion:
Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.

Skin Contact:
Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.

Eye Contact:
Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Chronic Exposure:
Prolonged or repeated skin contact may produce severe irritation or dermatitis.

Aggravation of Pre-existing Conditions:
Use of alcoholic beverages enhances toxic effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethane.

4. First Aid Measures

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

Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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

5. Fire Fighting Measures

Fire:
Flash point: -20°C (-4°F) CC
Autoignition temperature: 465°C (869°F)
Flammable limits in air % by volume:
Le: 2.1; Ul: 12.8
Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.

Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.
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! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. 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.

J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. 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:
Acetone:
OSHA Permissible Exposure Limit (PEL): 1000 ppm (TWA)
ACGIH Threshold Limit Value (TLV): 500 ppm (TWA), 750 ppm (STEL) A4 - not classifiable as a human carcinogen
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 Practice,* most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face organic vapor respirator 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 organic vapor respirator 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. 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.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin
9. Physical and Chemical Properties

Appearance:
Clear, colorless, volatile liquid.

Odor:
Fragrant, mint-like

Solubility:
Miscible in all proportions in water.

Specific Gravity:
0.79 @ 20°C/4°C

pH:
No information found.

% Volatiles by volume @ 21°C (70°F):
100

Boiling Point:
56.5°C (133°F) @ 760 mm Hg

Melting Point:
-45°C (-49°F)

Vapor Density (Air=1):
2.0

Vapor Pressure (mm Hg):
400 @ 39.5°C (103°F)

Evaporation Rate (BuAc=1):
ca. 77

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalies, chlorine compounds, acids, potassium t-butoxide.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 5800 mg/kg; Inhalation rat LC50: 50,100 mg/m³, Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

http://www.jjbaker.com/msds/A0446.htm
8/15/02
12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Environmental Toxicity:
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/L.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. 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: ACETONE
Hazard Class: 3
UN/NARA: UN1090
Packing Group: II
Information reported for product size: 350L

International (Water, I.M.O.)
--------------------------
Proper Shipping Name: ACETONE
Hazard Class: 3
UN/NARA: UN1090
Packing Group: II
Information reported for product size: 350L

15. Regulatory Information

- - - - - - - Chemical Inventory Status - Part 1 - - - - - - - - - - - - - -
Ingredient

http://www.jtbaker.com/msds/A0446.htm
8/15/02
16. Other Information

NTPA Ratings: Health: 1 Flammability: 3 Reactivity: 0

Label Hazard Warning:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE, HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Label Precautions:
Keep away from heat, sparks and flame. 
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapors.
Avoid contact with eyes, skin and clothing.

Label First Aid:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:
Laboratory Regent.

Revision Information:
No changes.

Disclaimer:

http://www.jtbaker.com/msds/A0446.htm 8/15/02
Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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Prepared by: Environmental Health & Safety
Phone Number (314) 654-1600 (U.S.A.)

http://www.itbaker.com/msds/A0446.htm 8/15/02
GLYCOL ETHER DPM

THIS MSDS COMPLIES WITH 29 CFR 1110.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: GLYCOL ETHER DPM
CAS NUMBER: 54390-94-8

Benco Sales Inc
P.O. Box 145
Crossville, TN 38557
ATTN: PLANT MGR./SAFETY DIR.

Data Sheet No.: 003006-003
Printed: 10/26/89
Copyright: 1989

SECTION 1 - PRODUCT IDENTIFICATION

General or Generic ID: GLYCOL ETHER
DOT Hazard Classification: COMBUSTIBLE (175.151)

SECTION 2 - COMPOSITION

If present, IARC, NTP and OSHA carcinogens and chemicals subject to the reporting requirements of D A R T I T I C E T C. See definition page for classification.

Ingredient

DIPROPYLLENE GLYCOL MONOMETHYL ETHER

CAS #: 54390-96-6

Percents

X (by wt) PEL TLV Note

>95  100 ppm - skin  100 ppm - skin

(1)

Notes:

(1) SKIN ABSORPTION MAY POTENTIALLY CONTRIBUTE TO THE OVERALL EXPOSURE TO THIS MATERIAL. APPROPRIATE MEASURES SHOULD BE TAKEN TO PREVENT ABSORPTION SO THAT THE TLV IS NOT INVALIDATED.

SECTION 3 - PHYSICAL DATA

Boiling Point

for PRODUCT: 156.00 - 178.00 Deg F
180.00 - 192.22 Deg C
760 mm Hg

Vapor Pressure

for PRODUCT: < 0.30 mm Hg
0.20 mm Hg

Specific Gravtiy

AIR = 1

.953

Specific Gravity

.954

Evaporation Rate

(20 deg C)

100.00% .00

SECTION 4 - FIRE AND EXPLOSION INFORMATION

FLASH POINT/TCC: 167.0 deg F 75.7 deg C
EXPLOSIVE LIMIT (PRODUCT): LOWER 1.12
EXTINGUISHING MEDIA: ALCOHOL FOAM OR CARBON DIOXIDE OR DRY CHEMICAL
HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS; CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

SECTION 5 - HANDLING AND STORAGE INFORMATION

FIREFIGHTING PROCEDURES: USE SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE BEHIND HOLE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: FUMES ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND ILLUMINATED BY HEAT, PILOT LIGHTS, OTHER FLAMES AND IGNITION SOURCES AT LOCATIONS DOWNSTREAM OF THE MATERIAL HANDLING POINT.

NEVER USE WATER OR CUTTING TORCH OR DRAIN OR DRAIN (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL HAZARDOUS MATERIALS CONTAINING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

SECTION 6 - HEALTH INFORMATION

NFPA CODES: HEALTH: 0 FLAMMABILITY: 2 REACTIVITY: 0

PERMISSIBLE EXPOSURE LEVEL: 100 ppm - skin

THRESHOLD LIMIT VALUE: 100 ppm - skin

CROSSVILL, TN 38557
**SECTION VII—HEALTH HAZARD DATA (Cont'd)**

**EFFECTS OF ACUTE OVEREXPOSURE, FOR PRODUCT**

EYES—CAN CAUSE IRRITATION.
SKIN—CAN CAUSE SLIGHT IRRITATION.
BREATHE—EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DIZZINESS, HEADACHE, FATIGUE, NAUSEA, HEADACHE AND POSSIBLY UNCONSCIOUSNESS.
SMELLING—DILUTED ODOR, MAY PRODUCE SYMPTOMS OF INTOXICATION CHARACTERIZED BY INCOORDINATION, DIZZINESS, HEADACHE, HEAVINESS IN HEAD, NAUSEA, MENTAL CONFUSION, POSSIBLY SLURRED SPEECH, AND STUPOR, DEPENDING ON THE QUANTITY OF MATERIAL INGESTED.

**FIRST AID:**

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHINGS. LAUNDRY CONTAMINATED CLOTHINGS BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY.

IF SWALLOWED: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING SPECIFIC SYRUP OR BY PLACING FINGERS AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. KEEP PERSON HARM, QUIET AND GET MEDICAL ATTENTION.

**PRIMARY ROUTE(S) OF ENTRY:**

INHALATION, SKIN ABSORPTION, SKIN CONTACT

**EFFECTS OF CHRONIC OVEREXPOSURE:** (FOR PRODUCT)

OVEREXPOSURE TO THIS MATERIAL OR ITS COMPONENTS HAS APPEARANTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: LIVER ABNORMALITIES, KIDNEY DAMAGE.

**SECTION VI—REACTIVITY DATA**

Hazardous Polymerization: CANNOT OCCUR

Stability: STABLE

Incompatibility: AVOID CONTACT WITH STRONG OXIDIZING AGENTS

**PRECAUTIONS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

SMALL SPILLS: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

VENTILATE AREA.

LARGE SPILLS: ELIMINATE ALL IGNITION SOURCES (FLAMES, FLAMES INCLUDING Pilot LIGHTS, ELECTRICAL SPARKS), PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE KEPT OUT OF AREA OF SPILL, UNTIL CLEAN-UP HAS BEEN COMPLETED. SPILL AT SOURCE, VACUUM AREA OF SPILL TO PREVENT SPREADING. BURN LIQUID TO SAVAGE TANK, REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABOSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVED INTO CONTAINMENTS. PREVENT RUN-OFF TO SEwers, STREAMS OR OTHER BODIES OF WATER. IF RUN-OFF OCCURS, NOTIFY PROPER AUTHORITIES AS REQUIRED, THAT A SPILL HAS OCCURRED.

**WASTE DISPOSAL METHOD:**

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII—PROTECTIVE EQUIPMENT TO BE USED**

Respiratory Protection: IF WORKPLACE EXPOSURE LIMITS (OSHA) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION III), A NIOSH/OSHA APPROVED AIR SUPPLIES RESPIRATOR IS ADVISED IN ABSENCE OF OTHER ENVIROMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES (TANK YOUR SAFETY EQUIPMENT SUPPLIER)

Protective Glove: WEAR RESISTANT GLOVES SUCH AS: NITRILE RUBBER, NATURAL RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED. HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

**OTHER PROTECTIVE EQUIPMENT:**

TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

**SECTION IX—SPECIAL PRECAUTIONS OR OTHER CONCERNS**

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN TREATED. WORN CONTAINERS MAY BE HAZARDOUS WHEN DISPOSED OF.

THE INFORMATION ACCUMULATES HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE AUTHOR OR ITS AGENTS TO CONTAIN IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, ACCURATE, AND SUITABLE TO YOUR CIRCUMSTANCES.

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Last page--see attachment page enclosed--Last page
DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

SECTION I

PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

SECTION II

COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and identified in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnote in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear in the line with the component identification. Other recommendations appear as footnotes.

SECTION III

PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

PH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER unless otherwise listed.

SECTION IV

FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION V (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

SECTION VI

HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

SECTION VII

REACTION DATA

HAZARDOUS POLYMORPHIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

SECTION VIII

SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up, and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

SECTION IX

PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

SECTION X

SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with all state and local regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTY" containers, drums, pails, etc. Refer to Sections IV, V and IX.
Alternatives Tested at Stith and Quickdraw
# Material Safety Data Sheet

**Pressroom Cleaner**

**Formulation No. 2501**

## Section I - General

**Manufacturer Name:** The Mirachem Corporation  
**Address:** P.O. Box 27608  
**City, State, Zip:** Tempe, Arizona  85285-7608

**Emergency Phone:** 1-(800) 847-3527

**Date Prepared:** 7/3/96  
**Revision Date:**

## Section II - Hazardous ingredients/identity information

<table>
<thead>
<tr>
<th>Hazardous Component (CAS #)</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
<th>% (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N.E. = None Established

## Section III - Physical/Chemical Characteristics

- **Boiling Point:** >210°F
- **Vapor Pressure (mm Hg):** Composite 0.006 @ 20°C
- **Vapor Density (AIR =1):** > 1
- **Solubility in Water:** Complete
- **Appearance and Odor:** Clear liquid with a mild citrus odor

N/A = Not Applicable  
N.E. = Not Established

## Section IV - Fire and Explosion Hazard

- **Flash Point (Method Used):** >212°F  
- **Explosive Limits:** N/A

- **Extinguishing Media:** N/A
- **Special Fire Fighting Procedures:** N/A

- **Unusual Fire Fighting and Explosion Hazards:** N/A

## Section V - Reactivity

- **Stability:** Stable  
- **Unstable:** X

- **Incompatibility (Materials to Avoid):** Strong Acids and Alkalis.  
- **demulsify product.**

- **Hazardous Decomposition or By-products:**  
  - Thermal decomposition may produce CO2

- **Hazardous Polymerization:** May Occur  
  - Will Not Occur X

---

*PRMSDS 894*
Section VII - Health Hazard Data

Eye Contact: May cause mild temporary irritation.
Skin Contact: Prolonged or repeated exposure may cause mild irritation.
Inhalation: No adverse effects expected.
Ingestion: No adverse health effects are anticipated to occur as a result of acute ingestion. Chronic effects are not known.
Carcinogenicity: None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
Signs/Symptoms of Overexposure: Prolonged contact may cause mild irritation or dryness to sensitive skin.
Medical Conditions Generally Aggravated by Exposure: None known.

Section VII - Emergency and First Aid Procedures

Eyes: Immediately flush with clean water. Consult physician if necessary.
Skin: Rinse with water.
Ingestion: If swallowed, treat symptomatically and supportively. Do not induce vomiting. If victim conscious and alert, give two glasses of water or milk to drink. If vomiting occurs, keep head below hips to prevent aspiration. Contact physician.
Inhalation: No adverse effects anticipated.

Section VIII - Precautions for Safe Handling and Use

In Case of Spill: Flush with water into containing area.
Waste Disposal: Flush to sewer where applicable within Federal, State or Local disposal requirements.
Handling & Storage Precautions: Wear protective goggles or face shield if splashing or spraying liquid. Protect from freezing.
Other Precautions: Keep container tightly closed. Keep out of reach of children.

Section IX - Control Measures

Respiratory Protection: No respiratory protection is necessary.
Ventilation: Good general ventilation is sufficient.
Protective Clothing: When prolonged skin contact is expected, wear protective gloves.
Eye Protection: Wear safety glasses.
Work/Hygienic Practices: Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities.
SOYGOLD
2000
SOLVENT

MATERIAL SAFETY DATA SHEET
EMERGENCY PHONE: 913-599-6911
CHEMTREC: 800-424-9300

SECTION I-IDENTIFICATION

PRODUCT: SOYGOLD® 2000
CAS No.: 67784-80-9
CHEMICAL: Fatty acid methyl esters
SYNONYMS: Methyl esters of soybean oil

SECTION II-INGREDIENTS AND HAZARD CLASSIFICATION

TYPICAL COMPOSITION

<table>
<thead>
<tr>
<th>CAS</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>67784-80-9</td>
<td>97.99</td>
</tr>
<tr>
<td>9016-45-9</td>
<td>1.3</td>
</tr>
</tbody>
</table>

SARA HAZARD: TITLE III SECTION 313: Not listed
FIRE-(Section 311/312) None noted

SECTION III-HEALTH INFORMATION

EFFECTS OF OVEREXPOSURE:

INHALATION: No known problems
INGESTION: LD50: >56ml/kg (albino rats)(similar products)
EYE CONTACT: Not classified as eye irritants
SKIN CONTACT: Not classified as a skin irritant or corrosive material

SECTION IV-OCCUPATIONAL EXPOSURE LIMITS

PEL: NO OSHA PEL
TLV: NO ACGIH TLV

SECTION V-EMERGENCY FIRST AID PROCEDURE

FOLLOW STANDARD FIRST AID PROCEDURES:

SWALLOWING: Call physician or poison control center.
SKIN CONTACT: Wash affected area.
EYE CONTACT: Flush eyes with cool water for at least 15 minutes. Do not let victim rub eyes.
INHALATION: Immediately remove victim to fresh air. Get medical attention immediately.
SECTION VI-PHYSICAL DATA

BOILING POINT: Over 600° F (315° C) at 760 mm Hg pressure
MELTING POINT: -1° C
VAPOR PRESSURE: Less than 5 mm Hg at 72° F
SPECIFIC GRAVITY: 0.87 at 25° C
SOLUBILITY IN WATER: Negligible at room temperature
APPEARANCE AND COLOR: Light yellow and liquid at room temperature
ODOR: Light vegetable oil odor

SECTION VII-FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: 425° F (223° C) (PMCC)
FLAMMABLE LIMITS: Not applicable
NFPA RATING: No NFPA rating
HMIS RATING: HEALTH: 0  FIRE: 1  REACTIVITY: 0

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS: Treat as oil fire.
Use water spray, dry chemical, foam or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS:
Rags soaked with any solvent present a fire hazard and should always be stored in
UL listed or Factory Mutual approved, covered containers. Improperly stored rags can
create conditions that lead to oxidation. Oxidation, under certain conditions can lead to
spontaneous combustion. This product contains antioxidants to retard oxidation.

SECTION VIII-REACTIVITY

STABILITY: Stable
HAZARDOUS POLYMERIZATION: None likely
MATERIALS TO AVOID: Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS: CO₂, CO
CONDITIONS TO AVOID: None known

SECTION IX-EMPLOYEE PROTECTION

CONTROL MEASURES: Adequate ventilation
RESPIRATORY PROTECTION: None required
PROTECTIVE CLOTHING: No need anticipated
EYE PROTECTION: None required
SECTION X - ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS: Avoid uncontrolled releases of this material to environment.

SPILL OR LEAK PRECAUTIONS: Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media.

WASTE DISPOSAL: Dispose of according to federal, state and/or local requirements.

SECTION XI - REGULATORY CONTROLS

DOT CLASSIFICATION: Class 55
DOT PROPER SHIPPING NAME: Cleaning Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS: Listed in TSCA inventory

SECTION XII - PRECAUTIONS: HANDLING, STORAGE AND USAGE

No special precautions necessary.

SECTION XIII - DATE AND SIGNATURE

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.L.C.
9804 PFLUMM
LENEXA, KS 66215

SIGNATURE: [Signature]

PREPARED BY: WILLIAM A. AYRES  REVISION DATE: 7-1-98
Alternative Tested at Huhtamaki
Material Safety Data Sheet

**MIRACHEM.** Pressroom Cleaner (Formulation No. 2501)

**Section I - General**

Manufacturer Name: The Mirachem Corporation  
P.O. Box 27808  
Tempe, Arizona 85285-7608  
Date Prepared: 7/3/96

Emergency Phone: 1-(800) 847-3527

**Revision Date:**

**Section II - Hazardous Ingredients/Identity Information**

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<th>ACGIH TLV</th>
<th>Other Limits</th>
<th>% (Optional)</th>
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<tbody>
<tr>
<td>None</td>
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</tbody>
</table>

N.E. = None Established

**Section III - Physical/Chemical Characteristics**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point:</td>
<td>&gt;210°F</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg): @20°C</td>
<td>Composite</td>
</tr>
<tr>
<td></td>
<td>0.006</td>
</tr>
<tr>
<td>Vapor Density (AIR =1):</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>Complete</td>
</tr>
<tr>
<td>Appearance and Odor:</td>
<td>Clear liquid with a mild citrus odor</td>
</tr>
</tbody>
</table>

**Section IV - Fire and Explosion Hazard**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point (Method Used):</td>
<td>&gt;212°F, PMCC ASTM D93</td>
</tr>
<tr>
<td>Explosive Limits:</td>
<td>N/A</td>
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<tr>
<td>Extinguishing Media:</td>
<td>N/A</td>
</tr>
<tr>
<td>Special Fire Fighting Procedures:</td>
<td>N/A</td>
</tr>
<tr>
<td>Unusual Fire Fighting and Explosion Hazards:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Section V - Reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Stability:</td>
<td>Stable X</td>
</tr>
<tr>
<td>Incompatibility (Materials to Avoid):</td>
<td>Strong Acids and Alkalis: demulsify product.</td>
</tr>
<tr>
<td>Hazardous Decomposition or By-products:</td>
<td>Thermal decomposition may produce CO2</td>
</tr>
<tr>
<td>Hazardous Polymerization:</td>
<td>May Occur</td>
</tr>
<tr>
<td>Will Not Occur</td>
<td>X</td>
</tr>
</tbody>
</table>
Section VI - Health Hazard Data

Eye Contact: May cause mild temporary irritation.
Skin Contact: Prolonged or repeated exposure may cause mild irritation.
Inhalation: No adverse effects expected.
Ingestion: No adverse health effects are anticipated to occur as a result of acute ingestion. Chronic effects are not known.
Carcinogenicity: None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
Signs/Symptoms of Overexposure: Prolonged contact may cause mild irritation or dryness to sensitive skin.
Medical Conditions Generally Aggravated by Exposure: None known.

Section VII - Emergency and First Aid Procedures

Eyes: Immediately flush with clean water. Consult physician if necessary.
Skin: Rinse with water.
Ingestion: If swallowed, treat symptomatically and supportively. Do not induce vomiting. If victim conscious and alert, give two glasses of water or milk to drink. If vomiting occurs, keep head below hips to prevent aspiration. Contact Physician.
Inhalation: No adverse effects anticipated.

Section VIII - Precautions for Safe Handling and Use

In Case of Spill: Flush with water into containing area.
Waste Disposal: Flush to sewer where applicable within Federal, State or Local disposal requirements.
Handling & Storage Precautions: Wear protective goggles or face shield if splashing or spraying liquid. Protect from freezing.
Other Precautions: Keep container tightly closed. Keep out of reach of children.

Section IX - Control Measures

Respiratory Protection: No respiratory protection is necessary.
Ventilation: Good general ventilation is sufficient.
Protective Clothing: When prolonged skin contact is expected, wear protective gloves.
Eye Protection: Wear safety glasses.
Work/Hygienic Practices: Use good personal hygiene practices, wash hands before eating, drinking, smoking, or using toilet facilities.