MATERIAL SAFETY DATA SHEET

EP4920

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND THE COMPANY

PRODUCT NAME: EP4920 Polyester Catalyst
FROM: Eager Polymers
ADDRESS: 3350 W. 48th Place, Chicago, IL 60632
CHEMICAL NAME: Methyl Ethyl Ketone Peroxide (MEKP)
CHEMICAL FAMILY: Organic Peroxide

Print Date: 01/09/08

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CAS NO.</th>
<th>%</th>
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<tbody>
<tr>
<td>Methyl Ethyl Ketone Peroxide</td>
<td>1338-23-4</td>
<td>34</td>
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<tr>
<td>Dimethyl Phthalate</td>
<td>131-11-3</td>
<td>43</td>
</tr>
<tr>
<td>2,2,4-Trimethyl-1,3-pentanediol diisobutyrate</td>
<td>6846-50-0</td>
<td>20</td>
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<tr>
<td>Hydrogen Peroxide</td>
<td>7722-84-1</td>
<td>01</td>
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<tr>
<td>Methyl Ethyl Ketone</td>
<td>78-93-3</td>
<td>02</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>01</td>
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</table>

SECTION 3 - HAZARD IDENTIFICATION OF THE PREPARATION

PHYSICAL HAZARDS: Organic Peroxide. Decomposition
HEALTH HAZARDS: Severe Irritant
EXPOSURE LIMITS: The ACGIH Ceiling STEL is 1.5 mg/m³ (0.2 ppm) for Methyl Ethyl Ketone Peroxide.
ROUTES OF EXPOSURE:
- Skin Absorption: Severe skin irritant, causes redness, blistering, and edema.
- Eye Contact: Eye contact causes severe corrosion and may cause blindness.
- Ingestion: Human systemic effects by ingestion: changes in structure or function of esophagus, nausea, or vomiting, and other gastrointestinal effects.
- Inhalation: Moderately toxic by inhalation.
EFFECTS OF OVER-EXPOSURE: Prolonged inhalation of vapors may cause mucous membrane irritation and vertigo.
There are no known medical conditions, which are recognized as being aggravated by exposure.

SECTION 4 - FIRST-AID MEASURES

Skin: Immediately remove any contaminated clothing. Wash contaminated area thoroughly with soap and copious amounts of water for at least 15 minutes. If irritation or adverse symptoms develop seek medical attention.
Eyes: Remove any contact lenses at once. Flush eyes with water for at least 15 minutes. Ensure adequate flushing by separating the eyelids with fingers. If irritation or adverse symptoms develop seek medical attention.
Ingestion: Contact a physician, hospital or Poison Control Center at once. DO NOT INDUCE VOMITING.
Inhalation: Remove to fresh air, if coughing, breathing becomes labored, irritation develops or other symptoms develop, seek medical attention at once, even if symptoms develop several hours after the exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT: (C.O.C) >200°F
FLAMMABLE LIMITS: Unknown
FIRE EXTINGUISHER MEDIA: Water from a safe distance – preferably with a fog nozzle. In case of very small fires, other means such as carbon dioxide, foam or dry chemical extinguishers may be effective. Dry chemical combined with MEKP formulations may re-ignite. Light water additives may be particularly effective at extinguishing MEKP fires.
SPECIAL FIRE FIGHTING PROCEDURES: Firemen should be equipped with protective clothing and SCBA’s. In case of fire near storage area, cool the containers with water spray. If dry chemical is used to extinguish an MEKP fire, the extinguished area must be thoroughly wetted down with water to prevent re-ignition.
UNUSUAL FIRE AND EXPLOSION: The heat of decomposition of the peroxides adds to the heat of the fire. Dry chemical fire
HAZARDS

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN EVENT OF SPILL OR RELEASE

Dike to prevent runoff from entering drains, sewers, streams, etc. and transfer into containers. Spilled material should be swept up with an inert, moist diluent such as perlite, vermiculite, or sand, and placed in a clean polyethylene drum or a polyethylene pail. Wet drum or pail with water prior to sealing containers.

SECTION 7 - HANDLING AND STORAGE

HANDLE AND STORING

Keep containers closed to prevent contamination. Rotate stock using the oldest material first. The activity and stability of MEKP is directly related to the shipping and storage temperature history. Cool storage at 80°F or below is recommended for longer shelf life and stability. Prolonged storage at elevated temperatures of 100°F and higher will cause product degradation, gassing and potential container rupture which can result in a fire and/or explosion.

OTHER PRECAUTIONS

MEKP should never be added to hot solvents or monomers as a violent decomposition and/or reaction may result. When using spray equipment, never spray raw MEKP onto curing or into raw resin or flues. Keep MEKP in its original container. DO NOT STORE WITH FOOD OR DRINK. DO NOT USE NEAR FOOD OR DRINK.

Unmixed, uncontaminated material, remaining at the end of the day, shall be returned to a proper organic peroxide storage area. Under no circumstances should material be returned to the original container.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION

If airborne concentrations are expected to exceed acceptable levels wear a NIOSH/MSHA approved air-purifying respirator with an organic vapor cartridge or canister. When using respirators refer to OSHA’s 29CFR 1910.134.

VENTILATION

Mechanical, general.

EYE PROTECTION

Safety goggles recommended. Permanent eyewash is highly recommended.

HAND PROTECTION

Protective gloves recommended, solvent resistant, such as butyl rubber, nitrile or neoprene.

OTHER

A safety shower and eyewash is recommended when the risk of a significant exposure exits.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT °F

Unknown

SPECIFIC GRAVITY (Water=1)

1.1

VAPOR PRESSURE mm Hg.

Unknown

% VOLATILE BY VOLUME

Unknown

VAPOR DENSITY (Air=1)

> 1

SOLUBILITY IN WATER

Slight

EVAPORATION RATE

Unknown

APPEARANCE AND ODOR

Water white liquid with a slight odor.

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBILITY (Materials to avoid)

Dimethylaniline, cobalt napthenate and other promoters, promoted resins, accelerators, reducing agents, strong acids, bases, metals, metal alloys and salts, sulfur compounds, amines or any hot material.

STABILITY

Stable when kept in original, closed container, out of direct sunlight at temperatures below 80°F.

HAZARDOUS DECOMPOSITION PRODUCTS

Decomposition products are flammable. Acrid smoke and irritating fumes.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Methyl Ethyl Ketone Peroxide

Hazard Data:

Inhalation: Rat--LC50: 200 ppm/4 hr, lung, thorax, respiration, or dyspnea; Mouse--LC50: 170 ppm/4 hr, lung, thorax, respiration, or dyspnea.

Intraperitoneal: Rat--LD50: 65 mg/kg, behavioral, muscle weakness behavioral, ataxia.

Oral: Rat--LD50: 484 mg/kg; Mouse--LD50: 470 mg/kg; Human--TDLo: 480 mg/kg, changes in structure or function of esophagus gastrointestinal, nausea or vomiting gastrointestinal.

Skin: Rabbit--LD50: 500 mg.
Dimethyl Phthalate

Hazard Data:
- **Inhalation:** Cat--LC₉₀: 9300 mg/m³/6.5 hr.
- **Intraperitoneal:** Mouse--LD₅₀: 1380 mg/kg.
- **Oral:** Rat & Mouse--LD₅₀: 6800 mg/kg, somnolence behavioral, withdrawal nutritional and gross metabolic, weight loss or decreased weight gain; Dog--LD₅₀: >1400 mg/kg; Rabbit--LD₅₀: 4400 uL/kg.
- **Subcutaneous:** Mouse--LD₁₀₀: 6500 mg/kg, dyspnea lung, thorax, respiration, or cyanosis.

2,2,4-Trimethyl-1,3-pentanediol diisobutyrate

Hazard Data:
- **Oral:** Rat--LD₅₀: >3200 mg/kg

Hydrogen Peroxide

Hazard Data:
- **Inhalation:** Mouse--LC₉₀: 227 ppm; Rat--TC₉₀: 67 ppm/6hr/6W-1, dermatitis, irritative of the skin.
- **Intraperitoneal:** Mouse--LD₅₀: 880 mg/kg.
- **Intravenous:** Rabbit--LD₅₀: 15 gm/kg, behavioral, convulsions or effect on seizure threshold.
- **Oral:** Rat--LD₅₀: 376 mg/kg, gastrointestinal, peritonitis blood, pigmented or nucleated red blood cells; Mouse--LD₅₀: 2 mg/kg.
- **Subcutaneous:** Rat--LD₅₀: 620 mg/kg; Mouse--LD₅₀: 1072 mg/kg.
- **Skin:** Rat--LD₅₀: 4060 mg/kg, lung, thorax, respiration, or pulmonary emboli; Rabbit--LD₁₀₀: 500 mg/kg, behavioral, convulsions or effect on seizure threshold.

Methyl Ethyl Ketone

Hazard Data:
- **Eye:** Human: 350 ppm.
- **Inhalation:** Rat--LC₉₀: 23500 mg/m³/8hr.
- **Intraperitoneal:** Rat--LD₅₀: 607 mg/kg; Mouse--LD₅₀: 616 mg/kg.
- **Oral:** Rat--LD₅₀: 2737 mg/kg; Mouse--LD₅₀: 4050 mg/kg.
- **Skin:** Rabbit--LD₅₀: 6480 mg/kg.

Severely irritating to the skin, may cause redness, blistering, and edema. May be harmful if absorbed through the skin. Irritating to the eyes may cause severe corrosion and blindness. Harmful if swallowed. May be harmful if inhaled. Prolonged inhalation of vapors may cause mucous membrane irritation and vertigo.

### SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: Methyl ethyl ketone peroxide: EC₅₀ (Guppy), 44.2 mg/L/96 hr; EC₅₀ (algae), 42,700 ug/L/96 hr.

Environmental Fate: Methyl ethyl ketone peroxide (MEKP) was evaluated for biodegradability in a closed bottle system and was reported to be readily biodegradable. An EC₅₀ of 16mg MEKP/L activated sludge was reported in an activated sludge respiration inhibition test.

### SECTION 13 - DISPOSAL CONSIDERATIONS

Prevent material from entering drains, sewers, streams, etc.

Immediately dispose of waste material at a RCRA approved hazardous waste management facility in accordance with federal, state and local regulations.

### SECTION 14 - TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT Shipping Name:</th>
<th>ORGANIC PEROXIDE TYPE D, LIQUID</th>
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<tbody>
<tr>
<td></td>
<td>(METHYL ETHYL KETONE PEROXIDE, ≤45%)</td>
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<td>DOT Hazard Class:</td>
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<td>2000 ERG GUIDE NO.:</td>
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### SECTION 15 - REGULATORY INFORMATION

The following chemicals are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Percent</th>
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</table>
Dimethyl Phthalate  131-11-3  43
Methyl Ethyl Ketone  78-93-3  02

Reportable Quantity
2-Butanone Peroxide (MEKP): 10 lbs (4.54 kg)

TSCA Status
The ingredients in this product are listed in the US Toxic Substances Control Act (TSCA) Inventory.

Canadian Domestic Substances List (DSL)
The ingredients in this product are listed in the Canadian DSL Inventory.

European Inventory of Existing Commercial Chemical Substances (EINECS)
The ingredients in this product are listed in the European EINECS Inventory.

Australian Inventory of Chemical Substances (AICS)
The ingredients in this product are listed in the Australian AICS Inventory.

Status of Carcinogenicity
Not recognized as a carcinogen by the IARC, NTP or OSHA.

SECTION 16 - OTHER INFORMATION

VOC Information
Using ASTM Test Method D-2369-87, but at 40°C (since MEKP decomposes rapidly above 100°C and is not a VOC), MEKP-9 contains 2.4% VOC, by weight, or 27 grams per liter. For more information call Norac.

NFPA 432 Organic Peroxide Classification
Class III

<table>
<thead>
<tr>
<th>NFPA 704 Rating</th>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
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<tr>
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HMIS Rating

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<th>Health</th>
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[1] See CCR Title 8 Section 5461, NFPA 432, and UFC (91) Sec. 80.307.