1 PRODUCT AND COMPANY IDENTIFICATION

Organic Peroxides
2000 Market Street
Philadelphia, Pa 19103

EMERGENCY PHONE NUMBERS:
Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(303) 623-5716 (24Hrs)

Information Telephone Numbers
Customer Service 1-800-558-5575

Product Name LUPEROX 665M50
Product Synonym(s)
Chemical Family Organic Peroxide - Peroxyester
Chemical Formula
Chemical Name 1,1-Dimethyl-3-Hydroxy-Butyl Peroxy-2-Ethylhexanoate in OMS
EPA Reg Num
Product Use Polymerization Initiator

2 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS RegistryNumber</th>
<th>Typical Wt. %</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Hydroxy-1,1-dimethylbutyl peroxy (2-ethylhexanoate)</td>
<td>95732-35-7</td>
<td>50%</td>
<td>Y</td>
</tr>
<tr>
<td>Petroleum distillate</td>
<td>64742-48-9</td>
<td>&lt; 25%</td>
<td>Y</td>
</tr>
<tr>
<td>Odorless mineral spirits</td>
<td>64741-65-7</td>
<td>&lt; 25%</td>
<td>Y</td>
</tr>
<tr>
<td>Impurities including:</td>
<td></td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Di (3-hydroxy-1,1-dimethylbutyl) peroxy</td>
<td>93002-36-9</td>
<td>&lt; 2%</td>
<td>Y</td>
</tr>
</tbody>
</table>

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

The components of this product are either on the TSCA Inventory list or exempt as impurities.

3 HAZARDS IDENTIFICATION

Emergency Overview
Pale yellow liquid

DANGER!
ORGANIC PEROXIDE
THERMALLY UNSTABLE - REFRIGERATION REQUIRED
MAY CAUSE RESPIRATORY TRACT IRRITATION.
PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.

Potential Health Effects

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, it is considered to be practically non-toxic if swallowed, no more than slightly toxic if
absorbed through skin and slightly irritating to skin. Prolonged or repeated contact may remove oils from the skin and may dry skin and cause irritation, redness and rash. High vapor concentrations may be irritating to the eyes and respiratory tract, and may result in central nervous system (CNS) effects such as headache, dizziness, nausea, drowsiness and, in severe exposures, loss of consciousness and death. Mild to severe lung injury may occur if this material is drawn into the lungs (aspirated) during swallowing, or during vomiting after swallowing. Symptoms of injury may include increased breathing and heart rate, coughing and related signs of respiratory distress.

### 4 FIRST AID MEASURES

IN CASE OF CONTACT, flush the area with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops and persists. Thoroughly clean shoes before reuse.

IF SWALLOWED, do NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

IF INHALED, remove to fresh air. If breathing is difficult, get medical attention.

### 5 FIRE FIGHTING MEASURES

**Fire and Explosive Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-Ignition Temperature</td>
<td>NE</td>
</tr>
<tr>
<td>Flash Point</td>
<td>48 °C</td>
</tr>
<tr>
<td>Flammable Limits - Upper</td>
<td>NE</td>
</tr>
<tr>
<td>Flammable Limits - Lower</td>
<td>NE</td>
</tr>
</tbody>
</table>

**Extinguishing Media**

Use water spray, foam or dry chemical.

**Fire Fighting Instructions**

Fight fire with large amounts of water from a safe distance. Use water spray to cool containers exposed to fire. Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use. After a fire, wait until the material has cooled to room temperature before initiating clean up activities.

**Fire and Explosion Hazards**

Contact with incompatible materials or exposure to temperatures exceeding the SADT may result in a self accelerating decomposition reaction with release of flammable vapors which may autoignite.
6 ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Use inert, non-combustible absorbant material. Sweep or scoop up using non-sparking tools. Wet down and dispose of immediately. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7 HANDLING AND STORAGE

Handling

Contact with incompatible materials or exposure to temperatures exceeding SADT (See Section (9) may result in a self accelerating decomposition reaction with release of flammable vapors which may autoignite. Keep away from heat sparks and flame. Avoid contamination. Use only with adequate ventilation. Use explosion proof equipment. Keep container closed. Do not reuse container as it may retain hazardous product residue. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Minimize exposure to ambient temperatures.

Storage


8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposures. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Eye / Face Protection

Use good industrial practice to avoid eye contact.

Skin Protection

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash skin thoroughly after handling.

Respiratory Protection

Avoid breathing vapor or mist. Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and
8 EXPOSURE CONTROLS / PERSONAL PROTECTION

other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Airborne Exposure Guidelines for Ingredients

The components of this product have no established Airborne Exposure Guidelines

-Only those components with exposure limits are printed in this section.
-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.
-ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Odor</td>
<td>Pale yellow liquid</td>
</tr>
<tr>
<td>pH</td>
<td>NE</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.8583 @ 15°C</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>NE</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>NE</td>
</tr>
<tr>
<td>Melting Point</td>
<td>&lt; - 50°C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>NE</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility In Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NE</td>
</tr>
<tr>
<td>SADT</td>
<td>55°C/131°F (7 lb ctn.)</td>
</tr>
</tbody>
</table>

This material is chemically unstable and should only be handled under specified conditions. See HANDLING AND STORAGE section of this MSDS for specified conditions.

SADT - Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction. This reaction will generate flammable vapors which may autoignite. The length of time to generated a decomposition reaction, after the SADT has been reached or exceeded, is dependent upon how much the SADT has been exceeded and the length of time needed for the reaction exotherm (heat spike from increasing decomposition rate) to initiate a rapid decomposition reaction. Typically, SADT is inversely proportional to package size. Larger packages will have a lower SADT due to smaller ratio to heat transfer area to volume of product.

Other Physical Data

Active Oxygen Content = 3.07 %
10 STABILITY AND REACTIVITY

Stability
This material is chemically unstable and should only be handled under specified conditions. See HANDLING AND STORAGE section of this MSDS for specified conditions.

SADT - Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction. This reaction will generate flammable vapors which may autoignite. The length of time to generated a decomposition reaction, after the SADT has been reached or exceeded, is dependent upon how much the SADT has been exceeded and the length of time needed for the reaction exotherm (heat spike from increasing decomposition rate) to initiate a rapid decomposition reaction. Typically, SADT is inversely proportional to package size. Larger packages will have a lower SADT due to smaller ratio to heat transfer area to volume of product.

Hazardous Polymerization
Does not occur.

Incompatibility
Contact with foreign materials, such as, strong acids, bases, and oxidizers, reducing agents, amines and accelerators may result in a violent decomposition reaction or in product degradation.

Hazardous Decomposition Products
Temperatures at or above the SADT can result in the release of hazardous decomposition products which are flammable and may autoignite.

11 TOXICOLOGICAL INFORMATION

Toxicological Information
Data on this material and/or its components are summarized below.

Odorless Mineral Spirits
No skin allergy was observed in humans following repeated exposure, although skin irritation was noted. No symptoms associated with solvent exposure were noted by human volunteers exposed to 100 ppm odorless mineral spirit for 6 hours. Repeated inhalation studies in rats produced kidney tubule damage in male rats only indicative of hydrocarbon nephropathy, but extensive studies have demonstrated that these effects occur only in male rats and are not relevant to humans. Repeated skin application of one type of odorless mineral spirits has produced skin tumors in mice. These solvents have not been shown to be developmental toxicants, and generally produced no genetic changes in standard tests using bacteria and animals.

12 ECOLOGICAL INFORMATION

Ecotoxicological Information
No data are available.

Chemical Fate Information
No data are available.
13 DISPOSAL CONSIDERATIONS

Waste Disposal
Dispose of in accordance with federal, state and local regulations. Dilution followed by incineration is the preferred method. Dilution ratio of 10:1 in a clean, compatible, combustible solvent (i.e., Fuel Oil #2, mineral oil) will reduce reactivity hazard during incineration and transportation.

14 TRANSPORT INFORMATION

DOT Name: Organic Peroxide Type C, Liquid, Temperature Controlled
DOT Technical Name: [1,1-Dimethyl-3-hydroxybutylperoxy-2-ethylhexanoate, <= 52 %]
DOT Hazard Class: 5.2
UN Number: 3113
DOT Packing Group: PG II
RQ
DOT Special Information: Emergency Temperature: 40 C
Control Temperature: 30 C
SAMPLE
49 CFR 173.225(c)(2) Sample Provision; Packing Method OP2

15 REGULATORY INFORMATION

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)
Immediate (Acute) Health Y Fire Y
Delayed (Chronic) Health N Reactive Y
Sudden Release of Pressure N

The components of this product are either on the TSCA Inventory list or exempt as impurities.

Ingredient Related Regulatory Information:

<table>
<thead>
<tr>
<th>SARA Reportable Quantities</th>
<th>CERCLA RQ</th>
<th>SARA TPQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillate</td>
<td>NE</td>
<td></td>
</tr>
<tr>
<td>Odorless mineral spirits</td>
<td>NE</td>
<td></td>
</tr>
<tr>
<td>Di (3-hydroxy-1,1-dimethylbutyl) peroxide</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>3-Hydroxy-1,1-dimethylbutyl peroxo (2-ethylhexanoate)</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

16 OTHER INFORMATION
Revision Information

Revision Date 01 AUG 2000  Revision Number 1
Supercedes Revision Dated

Revision Summary
R&D Product

Key
NE = Not Established  NA = Not Applicable  (R) = Registered Trademark

Miscellaneous
Luperox is a registered trade mark of ATOFINA Chemicals, Inc.

Back-up emergency refrigeration should be available in case primary refrigeration is lost. Emergency dry ice source(s) should be known in case of refrigeration failure. Temperature in storage areas should be monitored. Refrigeration systems should have high temperature alarms to warn of loss of refrigeration.

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