1 PRODUCT AND COMPANY IDENTIFICATION

Thio and Fine Chemicals
Arkema Inc.
2000 Market Street
Philadelphia, PA 19103

EMERGENCY PHONE NUMBERS:
Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 767-5089 (24Hrs)

Customer Service Information Telephone Numbers
Phone Number 1-800-628-4453
Available Hrs 8:30 to 5:30 EST

Product Name MESITYL OXIDE
Product Synonym(s) 
Chemical Family Mesityl Oxide
Chemical Formula 4-METHYLPENT-3-EN-2-ONE
EPA Reg Num Synthesis intermediate

2 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS Registry Number</th>
<th>Typical Wt. %</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesityl oxide</td>
<td>141-79-7</td>
<td>100%</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 Hazard Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

The components of this product are all on the TSCA Inventory list.

3 HAZARDS IDENTIFICATION

Emergency Overview
Colorless liquid with a mint-like odor
WARNING!
FLAMMABLE LIQUID AND VAPOR.
CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS

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 slightly toxic if swallowed or inhaled, practically non-toxic if absorbed through skin, severely irritating to corrosive to eyes 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 are 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. If swallowed, this material may cause mouth and throat irritation and CNS effects as noted above.
4 FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.

IF ON SKIN, immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes.

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 not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

5 FIRE FIGHTING MEASURES

Fire and Explosive Properties
- Auto-Ignition Temperature: 344 C
- Flash Point: 28 C
- Flammable Limits- Upper: 10.1% in volume
- Flammable Limits- Lower: 1.3% in volume

Extinguishing Media
- Use water spray, carbon dioxide, foam or dry chemical.

Fire Fighting Instructions
- 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.

Fire and Explosion Hazards
- When burned, the following hazardous products of combustion can occur: Irritating or toxic vapors

6 ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak
- Extinguish or turn off all ignition sources. Ventilate the space involved. Wear appropriate personal protection equipment as indicated in Section 8 of this MSDS. Contain spill with inert materials. Construct a dike to prevent spreading. Collect with non-sparking tools to a suitable container. Prevent waterway contamination. Absorb liquid onto inert absorbent and place in DOT approved drums for disposal. 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
- Do not get in eyes, on skin or clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat, sparks and flames. Use grounding and bonding connection when transferring material to prevent static discharges, fire or explosion.

Storage
- Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly rated, grounded and installed to satisfy
7 HANDLING AND STORAGE

electrical classification requirements. Static electricity may accumulate and create a fire hazard. All storage containers, including containers such as drums, cylinders and IBC’s, must be bonded and grounded during filling and emptying operations. Store away from oxidizers and reactive materials. Keep container tightly closed. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497. Store out of direct sunlight in a cool, well-ventilated place. Store at temperatures below 20 °C.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls
Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Eye / Face Protection
Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

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 face shield and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

Respiratory Protection
Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved respirator with a P 95 particulate filter. Consult respirator manufacturer if exposure levels are greater than ten times the recommended exposure limits. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, 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

<table>
<thead>
<tr>
<th>Exposure Limit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesityl oxide</td>
<td></td>
</tr>
<tr>
<td>ACGIH STEL</td>
<td>25 ppm</td>
</tr>
<tr>
<td>ACGIH TWA</td>
<td>15 ppm</td>
</tr>
<tr>
<td>OSHA TWA PEL</td>
<td>25 ppm (100 mg/m3)</td>
</tr>
</tbody>
</table>

-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.
-WEEL-AIHA Sensitizer designator with a value of “Y” above means that exposure to this material may cause allergic skin reactions.
9 PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance/Odor**: Colorless liquid with a mint-like odor
- **pH**: NE
- **Specific Gravity**: 0.855 (@20 C)
- **Vapor Pressure**: 1094 Pa (20 C)
- **Vapor Density**: (20 C) : 4.07 kg/m3
- **Melting Point**: -53 C
- **Freezing Point**: -53 C
- **Boiling Point**: 125 C
- **Solubility In Water**

10 STABILITY AND REACTIVITY

**Stability**
This material is chemically stable under normal and anticipated storage and handling conditions.

**Incompatibility**
Avoid strong oxidizing agents, sodium hydroxide, amines. Under certain conditions may form: peroxides and acids.

**Hazardous Decomposition Products**
Thermal decomposition giving flammable and toxic products: Peroxides

11 TOXICOLOGICAL INFORMATION

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

**Mesityl oxide**
Acute inhalation by laboratory animals was reported to produce eye and nasal irritation, labored breathing and narcosis. No skin allergy was observed in guinea pigs following repeated exposure. An increase in white blood cells, liver, kidney, and spleen size were noted in rats following repeated inhalation exposure, while a decrease in white blood cells and anemia were noted in rabbits. Repeated inhalation exposure produced decreased growth and congestion of the liver, kidney and lung in guinea pigs and rats. A decreased pregnancy rate was reported in rats exposed by inhalation throughout premating and mating. No developmental or adverse effects on pregnancy were noted in rats or their offspring exposed following inhalation exposure during pregnancy. No genetic changes were observed in tests using bacteria or animals. Mesityl oxide

Single exposure (acute) studies indicate that this material is slightly toxic if swallowed (rat LD50 655-1,120 mg/kg) or inhaled (4-hr LC50 4.5 mg/l; vapor), practically non-toxic if absorbed through skin (rabbit LD50 5,150 mg/kg), severely irritating to corrosive to rabbit eyes and slightly irritating to rabbit skin (24-hr exposure).

12 ECOLOGICAL INFORMATION

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

**Mesityl oxide**
This material is slightly toxic to fathead minnow (96-hr LC50 86 mg/l) and rainbow trout (96-hr LC50 71 mg/l). It is practically non-toxic to goldfish (24-hr LC50 540 mg/l), Daphnia magna (48-hr EC50 110-970 mg/l) and algae
12 ECOLOGICAL INFORMATION

(96-hr EC50 120 mg/l).

Chemical Fate Information

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

Mesityl oxide
This material is readily biodegradable (72% after 28-days). This material has an evaporation half-life of 1.1- days (river) to 12.2-days (pond). It has a half-life in air of 4.8-hours. It has slight adsorption in soils and sediments (log Koc 1.18) and is practically non-bioaccumulable (log Pow 0.97).

13 DISPOSAL CONSIDERATIONS

Waste Disposal
Recover, reclaim or recycle when practical.

Disposal via incineration is recommended. Appropriate pretreatment and disposal in an authorized landfill is acceptable. In all cases, dispose of material in accordance with all applicable federal, state, and local laws and regulations. Consult appropriate regulatory officials or your attorney for information on such disposal.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14 TRANSPORT INFORMATION

DOT Name: Mesityl Oxide
DOT Technical Name: Mesityl Oxide
DOT Hazard Class: 3
UN Number: UN 1229
DOT Packing Group: PG  III
RQ

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 N
Sudden Release of Pressure N

The components of this product are all on the TSCA Inventory list.

Ingredient Related Regulatory Information:
SARA Reportable Quantities
Mesityl oxide

Massachusetts Right to Know
This product does contain the following chemicals(s), as indicated below, currently on the Massachusetts Right to Know Substance
Arkema Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use are beyond the control of Arkema Inc., Arkema Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.