1 PRODUCT AND COMPANY IDENTIFICATION

Functional Additives
2000 Market Street
28th Floor
Philadelphia, PA 19103-3222

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

Information Telephone Numbers
Customer Service Number
Phone Number (800) 331-7654
Available Hrs 8:00 AM - 5:00 PM EST

Product Name LUPEROX DCP
Product Synonym(s)

Chemical Family Organic Peroxide - Dialkyl Peroxide
Chemical Formula
Chemical Name Dicumyl Peroxide
EPA Reg Num
Product Use Polymerization initiator

2 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS Registry Number</th>
<th>Typical %</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dicumyl peroxide</td>
<td>80-43-3</td>
<td>98 min.</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 either on the TSCA Inventory list or exempt as impurities.

3 HAZARDS IDENTIFICATION

Emergency Overview
White crystals

WARNING!
ORGANIC PEROXIDE
MAY CAUSE RESPIRATORY TRACT 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 slightly toxic if swallowed, no more than slightly toxic if absorbed through skin or inhaled and slightly irritating to the eyes and skin. Excessive inhalation of airborne dust or vapor may cause upper respiratory tract irritation with the appearance of visible blood vessels in the nose and nosebleeds.

4 FIRST AID MEASURES
4 FIRST AID MEASURES

IN CASE OF CONTACT, flush the area with plenty of water. Remove material from clothing. Wash clothing 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>&gt;200 F</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 such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay directly on the spilled peroxide, then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into a polyethylene bag for disposal. The sweepings should be wetted down further with water. Dispose of immediately. After all of the material has been collected, wash down the area with detergent and water. 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
# 7 HANDLING AND STORAGE

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 dust. Avoid creating dust in handling, transfer or clean-up.

**Storage**

Detached storage is preferred. Store out of direct sunlight in a cool well-ventilated place. Store away from combustibles and incompatible materials. Refer also to National Fire Protection Agency (NFPA) Code 432, Code for the Storage of Organic Peroxide Formulations. To maintain stability and active oxygen content, store below 86 F (30 C).

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# 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**

Minimize skin contamination by following good industrial hygiene practice. Wearing rubber gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

**Respiratory Protection**

Avoid breathing dust. Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. 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 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.
- 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/Odor</td>
<td>White crystals</td>
</tr>
<tr>
<td>pH</td>
<td>NE</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.04 @ 25/25°C</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>15 mmHg @ 38°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>9.3</td>
</tr>
<tr>
<td>Melting Point</td>
<td>39°C (&lt; 102°F)</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>NE</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>NE</td>
</tr>
<tr>
<td>Solubility In Water</td>
<td>Negligible</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NE</td>
</tr>
<tr>
<td>Percent Volatile</td>
<td>NE</td>
</tr>
<tr>
<td>SADT</td>
<td>91°C/196°F (40 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.

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
An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers or inadequately vented containers.

Incompatibility
Contact with foreign materials, such as, strong acids and oxidizers, may result in a violent decomposition 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
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Toxicological Information

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

Single exposure (acute) studies indicate:
Oral - Slightly Toxic to Rats (LD50 4,000 mg/kg)
Dermal - No More than Slightly Toxic to Rats (LD0 2,000 mg/kg)
Inhalation - No More Than Slightly Toxic to Rats (6-hr LC50 >224 mg/cu m; exposure was to dust from 40% material on a filler)
Eye Irritation - Slightly Irritating to Rabbits
Skin Irritation - Slightly Irritating to Rabbits

No skin allergy was observed in guinea pigs following repeated exposure. Following repeated placement into the nose of rabbits, nose irritation and an increase in the number of nasal blood vessels were reported. Rats exposed for a longer period exhibited signs of respiratory tract and eye irritation. Repeated oral exposure produced liver effects in rats. No genetic changes were observed in tests using bacteria or animal cells.

12 ECOLOGICAL INFORMATION

Ecotoxicological Information

This material is practically non-toxic to guppies (96-hr LC50 108 mg/l). The EC50 for Daphnia magna and algae are greater than its solubility in water.

Chemical Fate Information

This material is not readily biodegradable (0% after 28-days; OECD 301 C); but is inherently biodegradable (60% after 57-days; OECD 301 D). It has the potential to bioaccumulate (8-week BCF 137-1,470 in carp; log Pow 3.78) and will adsorb in soil and sediment (log Koc 3.56). It is degraded by OH radicals in air (half-life 23-hours) and did not inhibit activated sludge in an activated sludge respiration inhibition test.

13 DISPOSAL CONSIDERATIONS

Waste Disposal

Incineration is the recommended method for disposal observing all local, state and federal regulations.

14 TRANSPORT INFORMATION

DOT Name   Organic Peroxide Type F, Solid
DOT Technical Name   [ Dicumyl peroxide, > 52-100 % ]
DOT Hazard Class   5.2
UN Number   UN 3110
DOT Packing Group   PG II
RQ

15 REGULATORY INFORMATION
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

<table>
<thead>
<tr>
<th>Category</th>
<th>Immediate (Acute) Health</th>
<th>Delayed (Chronic) Health</th>
<th>Sudden Release of Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactive</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Ingredient Related Regulatory Information:

SARA Reportable Quantities

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CERCLA RQ</th>
<th>SARA TPQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dicumyl peroxide</td>
<td>NE</td>
<td></td>
</tr>
</tbody>
</table>

New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right-to-Know Substances List.

Dicumyl peroxide

16 OTHER INFORMATION

Revision Information

Revision Date: 02 JAN 2007
Supercedes Revision Dated: 19-OCT-2004
Revision Number: 8

Revision Summary

This material has been transferred to the Functional Additives group.

Key

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

Miscellaneous

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