



1 PRODUCT AND COMPANY IDENTIFICATION

Functional Additives

2000 Market Street
21st 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	Phone Number	Available Hrs
Customer Service Number	(800) 331-7654	8:00 AM - 5:00 PM EST

Product Name LUPEROX **CU90**
Product Synonym(s)
Chemical Family Organic Peroxide - Hydroperoxide
Chemical Formula
Chemical Name CUMENE HYDROPEROXIDE
EPA Reg Num
Product Use

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical %	OSHA
Acetophenone	98-86-2	1.5	Y
Cumene	98-82-8	5	Y
.alpha.-Cumyl alcohol	617-94-7	6	Y
Impurities including:			N
Cumene hydroperoxide	80-15-9	88	Y

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

Clear, colorless to pale yellow liquid; sharp aromatic odor

DANGER!
ORGANIC PEROXIDE
CAUSES EYE BURNS. MAY CAUSE BLINDNESS.
CAUSES SKIN BURNS.
HARMFUL IF SWALLOWED.
HARMFUL IF ABSORBED THROUGH SKIN.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
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 its composition, it is anticipated to be moderately toxic if swallowed, moderately to highly toxic if absorbed through skin and corrosive to eyes and skin. Repeated contact may cause an allergic skin reaction. Prolonged or repeated contact removes 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. If swallowed, this material may cause severe irritation and injury to the mouth, throat and digestive tract, and CNS effects as noted above. 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 include increased breathing and heart rate, coughing, related signs of respiratory distress and respiratory failure.

4 FIRST AID MEASURES

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

IN CASE OF CONTACT, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Call a Poison Control Center. Wash clothing before reuse. Thoroughly clean shoes before reuse.

IF SWALLOWED, induce vomiting immediately as directed by medical personnel. Get medical attention. Call a Poison Control Center. 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

Auto-ignition Temperature	NE		
Flash Point	72 C / 162 F	Flash Point Method	Seta CC
Flammable Limits- Upper	NE		
Lower	NE		

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

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 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 explosion proof equipment. Do not reuse container as it may retain hazardous product residue. 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. Do not taste or swallow.

Storage

Store below 38 C/100 F to maintain stability and active oxygen content. 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.

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 a face shield, chemical goggles, and have eye flushing equipment immediately 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 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



8 EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Exposure Limit		Value
Cumene hydroperoxide		
WEEL-AIHA Skin Designator	-	Y
WEEL TWA	-	1 ppm 6 mg/m3
Cumene		
ACGIH TWA	-	50 ppm (246 mg/m3)
OSHA Skin designator	-	Y
OSHA TWA PEL	-	50 ppm (245 mg/m3)
Acetophenone		
ACGIH TWA	-	10 ppm 49 mg/m3
WEEL TWA	-	10 ppm 50 mg/m3

-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	Clear, colorless to pale yellow liquid; sharp aromatic odor
pH	NE
Specific Gravity	1.03
Vapor Pressure	1 mmg Hg @ 73 C
Vapor Density	4.1
Melting Point	NE
Freezing Point	NE
Boiling Point	NE
Solubility In Water	Slight
Evaporation Rate	NE
Percent Volatile	100
SADT	82 C/180 F (5 gal ctn.)

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 = 9.25% Min.

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 w/ copper, iron, rust, aluminum, zinc, vermiculite, strong acids & oxidizers, reducing agents, transition metal salt/ions, & reaction accelerators may result in a rapid and violent reaction.

Hazardous Decomposition Products

Phenol, acetone, and flammable vapors which may autoignite if a violent decomposition occurs.

11 TOXICOLOGICAL INFORMATION**Toxicological Information**

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

Cumene Hydroperoxide

Single exposure (acute) studies indicate that this material is moderately toxic if swallowed (rat LD50 400-2,000 mg/kg), highly to moderately toxic if absorbed through skin (rat LD50 130-1,500 mg/kg), slightly toxic if inhaled (rat 4-hr LC50 220 ppm), and corrosive to rabbit eyes and skin (4-hr exposure). Repeated oral dosing produced increased mortality in rats. Central nervous system (CNS) effects, difficulty breathing, weight loss, lung damage, severe eye, respiratory tract and stomach irritation, and increased mortality were observed in rats following repeated inhalation exposure. Repeated skin application caused hair loss and mild irritation, but did not cause tumors. No genetic changes were observed in tests using animals and yeast. Genetic changes were observed in tests using bacteria and fruit flies.

Cumene

Single exposure (acute) studies indicate that this material is slightly toxic if swallowed (rat LD50 2,700-2,910 mg/kg), slightly toxic to practically non-toxic if absorbed through skin (rabbit LD50 3,150-10,600 mg/kg), practically non-toxic if inhaled (rat 4-hr LC50 30 mg/l), practically non-irritating to rabbit eyes (0.9/110) and moderately irritating to rabbit skin (24-hr exposure, 3.7/8.0). Repeated oral exposure resulted in a kidney weight increase in rats. Following repeated inhalation exposure, increased blood supply and congestion in the lungs, liver, and kidney were observed in rats and rabbits, while liver effects were observed in mice. Neuropathological and functional observations showed no evidence for nervous system effects in rats. No adverse effects were observed in guinea pigs, monkeys and dogs following repeated exposure to vapor. No birth defects or toxic effects were observed in the offspring of rats or rabbits exposed by inhalation during pregnancy. No genetic changes were observed in tests using bacteria or animal cells.

.alpha.-Cumyl alcohol

Single exposure (acute) studies indicate that this material is slightly toxic if swallowed (rat LD50 1,300-3,000

11 TOXICOLOGICAL INFORMATION

mg/kg) or absorbed through the skin (rabbit LD50 4,300 mg/kg) and moderately to severely irritating to rabbits (24-hour exposure). Skin allergy was observed in humans following repeated exposure. Repeated application to the eyes of rabbits and guinea pigs produced irritation. No adverse effects were reported in rats following repeated oral administration.

Acetophenone

Single exposure (acute) studies indicate that this material is slightly toxic if swallowed (rat LD50 815-3,200 mg/kg) or inhaled (mouse 4-hr LC50 1.2 mg/l), practically non-toxic if absorbed through skin (rabbit LD50 15,900 mg/kg), severely irritating to rabbit eyes and slightly irritating to rabbit skin. No skin allergy was observed in humans following exposure to 2% material in petrolatum. Acute intoxication and narcosis can be rapidly induced in experimental animals by inhalation exposure with death occurring after several hours of exposure to concentrations above 20,000 mg/cu m. Repeated inhalation exposure in rats resulted in muscle changes, congestion of heart vessels and liver effects. Longer-term inhalation studies in rats resulted in degeneration of olfactory bulb cells. No treatment-related effects occurred in rats following repeated dietary administration. No birth defects or any effects on the offspring were noted in rats following skin application during pregnancy. No genetic changes were observed in tests using bacteria or animal cells.

12 ECOLOGICAL INFORMATION**Ecotoxicological Information**

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

Cumene Hydroperoxide

This material is moderately toxic to golden orfe (LC50 8 mg/l) and algae (72-hr EC50 1.6 mg/l; biomass & 3.1 mg/l; growth rate). It is slightly toxic to *Daphnia magna* (48-hr EC50 18 mg/l).

Cumene

This material is slightly to moderately toxic to fathead minnow (LC50 6.3-30 mg/l), rainbow trout (LC50 4.8 mg/l) and golden orfe (LC50 43-207 mg/l). It is moderately to highly toxic to *Daphnia magna* (LC50 0.6-4.0 mg/l) and protozoa (LC50 0.012-3.02 mg/l), and practically non-toxic to brine shrimp (LC50 110 mg/l).

.alpha.-Cumyl alcohol

No toxic effects were observed in sea lamprey larvae, rainbow trout or bluegill sunfish exposed to 5.0, 1.0, and 0.1 ppm, respectively, for 24-hours.

Acetophenone

This material is practically non-toxic to fathead minnow (96-hr LC50 155-162 mg/l).

Chemical Fate Information

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

Cumene

This material in natural water exposed to light oxidized from 1.2 to 9.2% depending on the water source and initial concentration. It is anticipated to be readily biodegraded (20-day BOD 70% in sewage seeded freshwater). This material has a moderate potential to bioconcentrate depending on its rate of metabolism and duration of exposure.

Acetophenone

This material is reported to be readily biodegradable in fresh and sea water. It is more biodegradable in water enriched with both nutrients and microbes. The BOD constant in ground water is 0.022 with a half-life of 32 days and in river water 0.083 with a half-life of 8 days. Using a sewage seed, the 10-day BODT is 56%; with the use of activated sludge, the 10-day BODT is approximately 90%. Bioconcentration in aquatic organisms is not



12 ECOLOGICAL INFORMATION

expected to be significant. The log of Kow is 1.58. Microbial degradation suggests that significant biodegradation is likely to occur in soil. This material is expected to be mobile in soil and susceptible to significant leaching. It is expected to evaporate from dry soil surfaces. If it is released to an ambient atmosphere, the reaction with photochemically-produced hydroxyl radicals will be the dominant removal mechanism. The half-life is estimated at approximately 2 days and exists almost entirely in the vapor phase.

13 DISPOSAL CONSIDERATIONS

Waste Disposal

Dispose of in accordance with federal, state and local regulations. Dilution followed by incineration is the preferred method. Dilution ration 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 F, Liquid
DOT Technical Name	[Cumyl hydroperoxide, <= 90%]
DOT Hazard Class	5.2, 8
UN Number	UN 3109
DOT Packing Group	PG II
RQ	Hydroperoxide, 1-methyl-1-phenylethyl- = 10 lbs.
DOT Special Information	SUBSIDIARY CORROSIVE

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	Y	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:

SARA Reportable Quantities	CERCLA RQ	SARA TPQ
.alpha.-Cumyl alcohol	NE	
Cumene hydroperoxide	10 LBS	
Cumene	5000 LBS	
Acetophenone	5000 LBS	

SARA Title III, Section 313

This product does contain chemical(s) which are defined as toxic chemicals under and 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. See Section 2

- Acetophenone
- Cumene
- Cumene hydroperoxide



Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

- Acetophenone
- Cumene
- Cumene hydroperoxide

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.

- Acetophenone
- Cumene
- Cumene hydroperoxide

Pennsylvania Environmental Hazard

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Environmental Hazard List.

- Acetophenone
- Cumene
- Cumene hydroperoxide

Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List.

- Acetophenone
- Cumene
- Cumene hydroperoxide

16 OTHER INFORMATION

Revision Information

Revision Date 15 JAN 2008 Revision Number 7
Supersedes Revision Dated 13-NOV-2007

Revision Summary

Update Flashpoint data

Key

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

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