LUPEROX® P

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Functional Additives

Customer Service Telephone Number: (800) 331-7654
(Monday through Friday, 8:30 AM to 5:30 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: LUPEROX® P
Synonyms: Peroxyester, t-butyl perbenzoate, tert-butyl peroxybenzoate
Molecular formula: C11 H14 O3
Chemical family: Organic peroxide - peroxyesters
Product use: Initiator

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: Colourless to yellow.
Physical state: liquid
Odor: unpleasant

CAUTION!
ORGANIC PEROXIDE.
HAZARDOUS DECOMPOSITION MAY OCCUR.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY CAUSE SKIN IRRITATION.

Potential Health Effects

Primary routes of exposure:
Inhalation and skin contact.

Signs and symptoms of acute exposure:
May cause skin irritation. Prolonged or repeated exposure may cause: Allergic skin reaction: redness, rash.

Skin:
Slightly toxic. Moderately irritating. May cause allergic skin reaction. (based on animal studies)

Inhalation:
Practically nontoxic. (based on animal studies)

Eyes:
Slightly irritating. (based on animal studies)

Ingestion:
Slightly toxic. (based on animal studies)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	OSHA Hazardous
Benzenecarboperoxoic acid, 1,1-dimethylethyl ester	614-45-9	>= 98 - <= 100 %	Y

The substance(s) marked with a "Y" in the Hazard column above, are those identified as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This material is classified as hazardous under Federal OSHA regulation.

4. FIRST AID MEASURES

Inhalation:
If inhaled, remove victim to fresh air.

Skin:
In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:
Immediately flush eye(s) with plenty of water.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flash point The flashpoint of this product is greater than the Self Acceleration Decomposition Temperature (SADT).

Auto-ignition temperature: no data available

Lower flammable limit (LFL): no data available

Upper flammable limit (UFL): no data available

Extinguishing media (suitable):
Water spray, Foam, Dry chemical

Protective equipment:

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.

Further firefighting advice:
Fight fire with large amounts of water from a safe distance.
Keep containers cool by spraying with water if exposed to fire.
Do not allow run-off from fire fighting to enter drains or water courses.
Closed containers of this material may explode when subjected to heat from surrounding fire.
After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

Fire and explosion hazards:
Contact with materials to avoid or exposure to temperatures exceeding the SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may autoignite.
When burned, the following hazardous products of combustion can occur:
Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

In case of spill or leak:
Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. DO NOT USE peat moss. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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

General information on handling:
Contact with materials to avoid or exposure to temperatures exceeding the SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may autoignite.
Keep away from heat, sparks and flames.
Avoid contact with the skin, eyes and clothing.
Prevent product contamination.
Keep container tightly closed and away from combustible materials.
Wash thoroughly after handling.
Emptied container retains product residue.
Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.
Do not reuse container as it may retain hazardous product residue.

Storage

General information on storage conditions:
Outside or detached storage is preferred. Store out of direct sunlight in a cool well-ventilated place. Store away from combustibles and materials to avoid. Refer also to National Fire Protection Association (NFPA) Code 432, Code for the Storage of Organic Peroxide Formulations.

Storage stability – Remarks:
Follow the recommended storage temperatures provided in this Section in order to maintain stability and oxygen content.

Storage incompatibility – General:
Acids (concentrated solutions)

Strong oxidizing agents

Reducing agents

Amines

Accelerators

Strong bases

Friedel - Crafts reaction catalyst

transition metal salts

metal ions

Temperature tolerance – Do not store below:–
50 °F (10 °C)

Temperature tolerance – Do not store above:
100 °F (38 °C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

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

Respiratory protection:
Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components (full facepiece recommended). Consult respirator manufacturer to determine appropriate type equipment for a 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 or 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.

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 immediately if skin is contaminated. Wash contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

Eye protection:
Use good industrial practice to avoid eye contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Colourless to yellow.
Physical state:	liquid
Odor:	unpleasant
pH:	no data available
Density:	1.04 g/cm3 (68 °F (20 °C))
Specific Gravity (Relative density):	1.0428 (68 °F(20 °C))
Vapor pressure:	7.6 mmHg (86 °F (30 °C))
Vapor density:	no data available
Boiling point/boiling range:	Decomposes before boiling. Rate of decomposition increases with rising temperature.
Freezing point:	~ 47.3 °F (8.5 °C)Material supercools
Solubility in water:	insoluble
Refractive index:	1.5011 68 °F (20 °C)
Viscosity, dynamic:	7.81 mPa.s 68 °F (20 °C)
Self-Accelerating Decomposition Temperature (SADT):	140 °F (60 °C) (Method: Heat Accumulation Storage Test)
Active oxygen content:	8.2 %

10. STABILITY AND REACTIVITY

Stability:
This material is chemically unstable and should only be handled under specified conditions.

Hazardous reactions:
Hazardous polymerization does not occur.

Materials to avoid:
Acids
Amines
Oxidizing agents
Reducing agents
Accelerators
Strong bases
Friedel - Crafts reaction catalyst
metal ions
transition metal salts

Conditions / hazards to avoid:
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 generate 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 decomposition products:
Temperatures at or above the SADT can result in the release of hazardous decomposition products which are flammable and may autoignite.
Thermal decomposition giving flammable and toxic products
Carbon oxides

11. TOXICOLOGICAL INFORMATION

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

Data for Benzenecarboperoxoic acid, 1,1-dimethylethyl ester (614-45-9)

Acute toxicity

Oral:
Slightly toxic. (rat) LD50 = 3,639 - 4,838 mg/kg.

Dermal:
Slightly toxic. (rabbit) LD50 = 3,817 mg/kg.

Inhalation:
Practically nontoxic. (rat) 4 h LC50 > 200 mg/l.

Skin Irritation:
Moderately irritating. (rabbit) Irritation Index: 3.7/8.0.

Eye Irritation:
Slightly irritating. (rabbit) Irritation Index: 7.0/110.

Skin Sensitization:
LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Repeated dose toxicity
Repeated oral administration to rat and mouse / No adverse systemic effects reported.

Genotoxicity

Assessment in Vitro:
Genetic changes were observed in laboratory tests using: bacteria, animal cells

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in a laboratory test using: animals

12. ECOLOGICAL INFORMATION

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

Data for Benzenecarboperoxoic acid, 1,1-dimethylethyl ester (614-45-9)

Biodegradation:
Readily biodegradable (28 d) biodegradation 72 %

Behavior in Water Treatment Plant:
Respiration inhibition of activated sludge EC50 = 43 mg/l

Octanol Water Partition Coefficient:
log Pow = 3.0 (OECD Guideline 117) (Some potential to bioaccumulate.)

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

Data for Benzenecarboperoxoic acid, 1,1-dimethylethyl ester (614-45-9)

Aquatic toxicity data:
Moderately toxic. Poecilia reticulata (guppy) 96 h LC50 = 8.6 mg/l (semi-static test)

Algae:
Moderately toxic. Algae 72 h EC50 = 1.3 mg/l

13. DISPOSAL CONSIDERATIONS

Waste disposal:
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. Dispose of in accordance with federal, state and local regulations. 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. 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

US Department of Transportation (DOT)

UN Number	:	3103
Proper shipping name	:	Organic peroxide type C, liquid
Technical name	:	(Tert-Butyl peroxybenzoate, > 77-100%)
Class	:	5.2
Packaging group	:	II
Marine pollutant	:	no

International Maritime Dangerous Goods Code (IMDG)

UN Number	:	3103
Proper shipping name	:	ORGANIC PEROXIDE TYPE C, LIQUID
Technical name	:	(Tert-BUTYL PEROXYBENZOATE, > 77-100%)
Class	:	5.2
Marine pollutant	:	yes

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	Conforms to
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 144)	DSL	All components of this product are on the Canadian DSL list.
Japan. Kashin-Hou Law List	ENCS (JP)	Conforms to
Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Conforms to
China. Inventory of Existing Chemical Substances	IECSC (CN)	Conforms to
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	NZIOC	Does not conform

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
Acute Health Hazard

Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

OSHA Regulated Carcinogens (NTP, IARC, OSHA Listed):

NTP:
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC:
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA:
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

United States – State Regulations

New Jersey Right to Know

Chemical Name	CAS-No.
Hydroperoxide, 1,1-dimethylethyl	75-91-2
Benzenecarboperoxoic acid, 1,1-dimethylethyl ester	614-45-9

New Jersey Right to Know – Special Health Hazard Substance(s)

Chemical Name	CAS-No.
Hydroperoxide, 1,1-dimethylethyl	75-91-2

New Jersey Right to Know – Special Health Hazard Substance(s)

Chemical Name	CAS-No.
Benzenecarboperoxoic acid, 1,1-dimethylethyl ester	614-45-9

Pennsylvania Right to Know

Chemical Name	CAS-No.
Benzenecarboperoxoic acid, 1,1-dimethylethyl ester	614-45-9

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

HMIS ratings:

Health:	2 (MODERATE HAZARD)
Fire:	1 (SLIGHT HAZARD)
Physical Hazard:	3 (SERIOUS HAZARD)

Latest Revision(s):

Revised Section(s):	Updated Corporate Address Change and Rocky Mountain Poison Center Phone Number
Reference number:	000000034023
Date of Revision:	07/11/2011
Date Printed:	07/11/2011

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