

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

	Chemical description Dibenzoyl peroxide with dicyclohexyl phthalate
	Chemical formula Mixture
CAS-number MIXTURE	Chemical family Organic Peroxides/Diacyl peroxides
Supplier Akzo Nobel Polymer Chemicals LLC 525 West Van Buren Street Chicago, IL 60607-3823 USA www.akzonobel-polymerchemicals.com	
Emergency telephone + 1-914-693-6946 Dobbs Ferry, NY USA	transportation Emergency CHEMTREC - USA: 1-800-424-9300 CANUTEC - CANADA: 1-613-896-6666
Product use Polymer initiator	
Date of first issue 2003-04-14	Date of last issue / Revision 2005-08-17 / 0.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage(s)	CAS number
Dibenzoyl peroxide	50.00	000094-36-0
Dicyclohexyl phthalate	50.00	000084-61-7

3. HAZARDS IDENTIFICATION

Emergency overview White granules with a slight odor. DANGER! ORGANIC PEROXIDE. HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION. MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. Toxic and flammable vapors may be produced under combustion. Isolate from sources of ignition.
Health effects Skin and eye contact are the primary routes of exposure to this product. No toxic effects are expected to be caused by inhalation of fumes or vapors. Inhalation of powder, dust or fumes may be irritating to the upper respiratory system. Skin contact may cause mild irritation and/or an allergic skin reaction in sensitive individuals. Eye contact may cause mild to moderate irritation. This product has a low order of toxicity. No significant toxic effects are expected.

4. FIRST AID MEASURES

Inhalation

Remove to fresh air. If breathing becomes difficult, oxygen may be given, preferably with a physician's advice. If not breathing, give artificial respiration. Get medical attention.

Skin

Remove contaminated clothing and equipment. Wash all affected areas with plenty of soap and water for at least 15 minutes. DO NOT attempt to neutralize with chemical agents. Wash any contaminated clothing before reuse. Obtain medical advice if irritation occurs.

Eye

Flush eyes with large quantities of running water for a minimum of 15 minutes. If the victim is wearing contact lenses, remove them. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. DO NOT let victim rub eye(s). Do not attempt to neutralize with chemical agents. Oils or ointments should not be used at this time. Get medical attention if eye irritation occurs.

Ingestion

Immediately give several glasses of water. DO NOT induce vomiting. If vomiting occurs, keep head below hips to reduce the risk of aspiration. Give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Never give anything by mouth to a person who is unconscious or convulsing.

If victim is unconscious, monitor pulse, breathing and airway. If breathing stops, begin artificial respiration immediately. If the heart has stopped, give cardiopulmonary resuscitation (CPR). Get medical attention immediately.

Note to physician

Persons with pre-existing skin disease may be at an increased risk if exposed dermally to this material. No specific antidote is known. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical conditions.

5. FIRE-FIGHTING MEASURES

Flash point not determined	Autoignition temperature not determined
	Explosion limits lower : N/D upper : N/D
Extinguishing media Use water fog, dry chemical, carbon dioxide, or foam extinguishing agents. Extinguish large fires with large amounts of water spray, fog or foam from a safe/protected position.	
Fire fighting procedures As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate non-essential personnel from the fire area. Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. If possible, move containers from the fire area. If not leaking, keep fire exposed containers cool with a water fog or spray to prevent rupture due to excessive heat. High pressure water may spread product from broken containers increasing contamination or fire hazard. Dike fire control water for later disposal. Do not allow contaminated water to enter waterways.	
Fire and explosion hazard Toxic and flammable vapors may be produced under combustion. Isolate from sources of ignition. This product can produce flammable vapors which may travel to a source of ignition and flash back.	
Hazardous products of combustion Oxides of carbon and biphenyl (OSHA PEL=1 mg/m ³ ; ACGIH TLV=1.3mg/m ³) are produced during the decomposition of this product. Flammable gases and vapors may also be produced during thermal decomposition.	

NFPA ratings	
Hazard	Rating
Health	2
Flammability	2
Reactivity	2
Other	ND

6. ACCIDENTAL RELEASE MEASURES

Methods for cleaning up

Remove all sources of ignition from the spill area. Stop source of spill. If tools are needed, they should be non-sparking. Dike area to prevent spill from spreading.

Evacuate all non-essential personnel upwind. Any person entering an area of a significant spill or of an unknown concentration of a gas or a vapor should use a NIOSH-approved, positive-pressure/pressure-demand, self-contained breathing apparatus. Protective equipment to prevent skin and eye contact should be worn.

Soak up spilled material with a suitable absorbent such as clay, sand or earth. Sweep up absorbed material and place in a chemical waste container for disposal.

7. HANDLING AND STORAGE

Handling

Wear protective clothing when handling this product to avoid eye and skin contact. Wash thoroughly after handling.

Electrically grounded tanks and containers should always be used as should non-sparking, electrically grounded hand tools and appliances. Ground or bond to ground all vessels when transferring to prevent the accumulation of static electricity. See National Electric Code. Emptied container may retain product residues. Follow all warnings and precautions even after container is emptied.

Storage

To insure product quality, storage temperatures should not exceed 77 F (25 C). To insure against possible exothermic self-accelerating decomposition, storage temperatures must not exceed 131 F (55 C). This storage temperature is derived from the SADT (see Section 10). Keep containers tightly closed. Store away from reducing agents, strong oxidizers, acids, alkalis and accelerators.

Maximum storage temperature

77.00 °F 25.00 °C

General comments

Containers should not be opened until ready for use. Use clean non-sparking equipment and tools when handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection

Use a NIOSH-approved organic vapor respirator with dust, mist and fume filters to reduce potential for inhalation exposure if use conditions generate vapor, mist or aerosol and adequate ventilation (e.g., outdoor or well-ventilated area) is not available. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator.

When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the workshift) to assure breakthrough exposure does not occur.

Skin protection

Skin contact with liquid or its aerosol should be minimized through the use of suitable protective clothing, gloves and footwear selected with regard for use condition exposure potential.

Eye protection

Because eye contact with this product may cause irritation, chemical goggles and/or a face shield should be worn when handling this product.

ventilation protection

Local exhaust ventilation, enclosed system design, continuous monitoring devices, process isolation and remote control are traditional exposure control techniques which may be used to effectively minimize employee exposure.

Other information

Safety showers, with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freezeups in cold weather.

Applicable exposure limits

Available exposure limits applicable to this product are shown below.

Agency	Value/Unit of measurement
Dibenzoyl peroxide	
OSHA TLV/TWA	5.000 mg/m ³
ACGIH TLV/TWA	5.000 mg/m ³
NIOSH REL/TWA	5.000 mg/m ³
PEL = Permissible Exposure Limit TLV = Threshold Limit Value TWA = Time Weighted Average STEL = Short Term Exposure Limit CEIL = Ceiling Exposure Limit REL = Recommended Exposure Limit WEEL = Workplace Environmental Exposure Limit IDLH = Immediate Dangerous to Life and Health	

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odour White granules with a slight odor.	pH value not determined
Odor threshold (ppm) not determined	Relative vapour density (air=1) not determined
Volatile % not determined	Vapour pressure (mm Hg) not determined
Boiling point/range not determined	Evaporation rate not determined
Melting point/range not determined	
Cloud point not determined	Pour point not determined
Flash point not determined	Solubility in water Insoluble
	Solubility in other solvents not determined
Autoignition temperature not determined	
Density not determined	Partition coefficient n-octanol/water not determined

Bulk density not determined	
Other information SADT = 140 F (60 C) (See Sect. 10).	Explosion limits lower : N/D upper : N/D

10. STABILITY AND REACTIVITY

Stability

This product is stable at ambient temperatures but may decompose if exposed to temperatures above 131 F (55 C).

Incompatibilities

This product is incompatible with strong acids, strong oxidizers, strong bases, metal salts, reducing agents and accelerators.

Polymerization

Hazardous polymerization is not expected to occur under normal temperatures and pressures.

Decomposition

Decomposition products are carbon dioxide, carbon monoxide and biphenyl.

Conditions to avoid

The SADT for this product is 140 F (60 C). The SADT (self accelerating decomposition temperature) is an experimentally derived temperature at which a typical package of the product will undergo self accelerating decomposition. Decomposition can be expected to be hazardous and uncontrollable. Under no circumstances should this product be exposed to temperatures near or above the emergency temperature of 131 F (55 C). Such an exposure could initiate hazardous decomposition. Contact with incompatible materials such as acids, alkalis, heavy metals and reducing agents will also result in hazardous decomposition.

11. TOXICOLOGICAL INFORMATION

Oral LD50	Ingestion toxicity data is not available for this product. However, the oral LD50 for a 78% granular dibenzoyl peroxide product is >5000 mg/kg in rats.
Dermal LD50	Dermal toxicity data is not available for this product. However, it is not considered a primary skin irritant or corrosive to skin based upon tests in rabbits with a 78% granular dibenzoyl peroxide product. 10% Dibenzoyl peroxide in polyethylene glycol was positive in a human skin sensitization study.
Inhalation LC50	Inhalation toxicity data is not available for this product. However, a 78% wet dibenzoyl peroxide product when tested in rats had an LC50 > 24.3 mg/L after a 4 hour exposure.
Skin	Chronic dermal exposure effects for this product are not known. However, prolonged and/or repeated contact is expected to cause mild irritation, defatting, dermatitis and may cause sensitization.
Eye	The acute eye effects of this product have not been determined. However, a 78% granular dibenzoyl peroxide product was a slight irritant to rabbit eyes (5 minutes) and moderate irritant to rabbit eyes (24 hours).
Chronic toxicity / carcinogenicity	Chronic ingestion effects of this product are not known. Prolonged and/or repeated inhalation may cause respiratory tract irritation. While this product has not been evaluated for genetic activity, a 78% granular dibenzoyl peroxide product gave negative results in the Ames Test, Chromosome Aberration Assay, and the Mouse Dominant Lethal Test. The reproductive toxicity

	of this product is not known. The neurotoxic effects of this product are not known. Overexposure to this product may affect the skin, eyes and respiratory system.
Other toxicological information	No other toxic effects for this product are known.

12. ECOLOGICAL INFORMATION

Ecotoxicological information	The ecological toxicity of this product is not known.
Bioaccumulation	Chemical fate information on this product is not known.
Other information	Other ecological information on this product is not known.

13. DISPOSAL CONSIDERATIONS

Waste disposal in accordance with regulations	The characteristic of reactivity per RCRA would be exhibited by the unused product if it becomes a waste material. The EPA Hazardous Waste Number of D003 would be applicable.
Container disposal	Containers should be drained of residual product before disposal. Empty containers should be disposed of in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

Shipping description	ORGANIC PEROXIDE TYPE D, SOLID (DIBENZOYL PEROXIDE, 50%) 5.2, UN3106, PG II North American Emergency Response Guide No. : 145
Required labels	ORGANIC PEROXIDE.
Environmentally hazardous substance	This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.

15. REGULATORY INFORMATION

Products and/or components listed below are subject to the following:	
Dibenzoyl peroxide	
Massachusetts Substance List	yes
New Jersey R-T-K Hazard. Sub.	yes
Penn. Hazardous Substance list	yes
SARA Title III, Section 313	yes
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes
Dicyclohexyl phthalate	
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes

Hazard classes	
Description	Applicable
HMIS Hazard Rating Source	HMIS
HMIS Health	2

HMIS Flammability	2
HMIS Reactivity	2
WHMIS Hazard classes	C; D-2B; F

Other regulatory information

No other regulatory information is available on this product.

16. OTHER INFORMATION**Created by**

PRODUCT SAFETY 914-674-5000

The information in this material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions as to the merchantability or fitness of the product for any particular purpose, or that any suggested use will not infringe any patent. Nothing in here shall be construed as granting or extending any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current.