

Perkadox BTW-50

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name Perkadox BTW-50	Chemical description Dibenzoyl peroxide
Synonym(s) Benzoyl peroxide	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	
Medical/Handling Emergency + 1-914-693-6946 Dobbs Ferry, NY USA	Transportation Emergency CHEMTREC - USA: 1-800-424-9300 CANUTEC - CANADA: 1-613-996-6666
Product use Polymerization initiator	Product/technical information 1-800-828-7929
Date of first issue 1994/10/04	Date of last issue / Revision # 2003/01/21 / 10.00

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage(s)	CAS number
Dibenzoyl peroxide	49.00 - 51.00	94-36-0
Water	15.00 - 20.00	7732-18-5
Nonionic surfactant	4.00 - 8.00	Proprietary
Zinc stearate	0.01 - 2.00	557-05-1
Dipropylene glycol dibenzoate	20.00 - 30.00	27138-31-4

3. HAZARDS IDENTIFICATION

Emergency overview White smooth paste with a slight sweet 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. Inhalation of fumes or vapors may be irritating to the upper respiratory system. Skin contact may cause slight irritation and possible sensitization. Eye contact may cause moderate irritation and may cause tearing. This product has a low order of toxicity. No significant toxic effects are expected.

Carcinogenicity	
Description	Applicable
IARC	no
NTP	no
OSHA	no
ACGIH	no

4. FIRST AID MEASURES

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<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>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.</p>

5. FIRE-FIGHTING MEASURES

<p>Flash point 199.40 °F 93.00 °C Greater than</p>	<p>Autoignition temperature not determined</p>
<p>Flash Method Setaflash Closed Cup</p>	<p>Explosion limits lower: N/D upper: N/D</p>
<p>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.</p>	
<p>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.</p>	
<p>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.</p>	
<p>Hazardous products of combustion Oxides of carbon and biphenyl (OSHA PEL=1 mg/m³; ACGIH TLV=1.3mg/m³) are produced during the decomposition of this product. Flammable gases and vapors may also be produced during thermal decomposition.</p>	

NFPA ratings	
Hazard	Rating

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Health	1
Flammability	2
Reactivity	2
Other	

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 temperature should not exceed 100 F (38 C). To insure against possible exothermic self-accelerating decomposition, storage temperatures should not exceed 130 F (54 C). This storage temperature is derived from the SADT (see Sect. 10). Keep containers tightly closed. Store away from reducing agents and accelerators.

Maximum storage temperature

100.40 °F 38.00 °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, 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 freeze-ups in cold weather.

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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
Zinc stearate	
OSHA TLV/TWA	15.000 mg/m ³
ACGIH TLV/TWA	10.000 mg/m ³
NIOSH REL/TWA	10.000 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 Odor White smooth paste with a slight sweet odor.	pH value not determined
Odor threshold (ppm) not determined	Relative vapor density (air=1) approx. 10.8 based on solvent
Volatile % < 20 % by weight	Vapor pressure (mm Hg) not determined
Boiling point/range not determined	Evaporation rate negligible
Melting point/range not determined	
Cloud point not determined	Pour point not determined
Flash point 199.40 °F 93.00 °C Greater than	Solubility in water < 1 % by weight @ 20 deg C
Flash method Setaflash Closed Cup	Solubility in other solvents not determined
Autoignition temperature not determined	
Specific Gravity/Density approx. 1.2 @ 25 deg	Partition coefficient n-octanol/water not determined
Bulk density not determined	
Other information SADT = 138 F (59 C) (See Section 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 130 F (54 C).

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<p>Incompatibilities This product is incompatible with strong acids, strong oxidizers, strong bases, metal salts, reducing agents and accelerators.</p>
<p>Polymerization Hazardous polymerization is not expected to occur under normal temperatures and pressures.</p>
<p>Decomposition Decomposition products are carbon dioxide, carbon monoxide and biphenyl.</p>
<p>Conditions to avoid The SADT for this product is 138 F (59 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 130 F (54 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.</p>

11. TOXICOLOGICAL INFORMATION

<p>Oral LD50</p>	<p>Ingestion toxicity data is not available for this product. The LD50 for a 78% dibenzoyl peroxide product is greater 5000 mg/kg (practically nontoxic). The LD50 (rat) for dipropylene glycol dibenzoate is 4673 mg/kg (slightly toxic).</p>
<p>Dermal LD50</p>	<p>Dermal toxicity data is not available for this product. The dermal LD50 in rabbits for dipropylene glycol dibenzoate is greater than 2000 mg/kg. A 78% dibenzoyl peroxide product was not irritating to rabbits. Other reports indicate dibenzoyl peroxide may be irritating to humans.</p>
<p>Inhalation LC50</p>	<p>Inhalation toxicity data is not available for this product. The LC50 in rats for a 78% dibenzoyl peroxide product is greater than 24.3 mg/L (4 hour exposure). The LC50 in rats for dipropylene glycol dibenzoate is greater than 200 mg/L (4 hour exposure). The product is expected to cause respiratory tract irritation.</p>
<p>Skin</p>	<p>A 10% dibenzoyl peroxide product was sensitizing to humans but not guinea pigs. Repeated exposure to this product may cause mild skin irritation.</p>
<p>Eye</p>	<p>Toxicity data is not available for this product. This product is expected to be moderately irritating to the eyes based on studies in rabbits with 78% dibenzoyl peroxide.</p>
<p>Chronic toxicity/carcinogenicity</p>	<p>Chronic ingestion effects of this product are not known.</p> <p>Chronic inhalation exposure of this product may cause respiratory tract irritation.</p> <p>The carcinogenic properties of this product are not known. A 78% dibenzoyl peroxide product was not mutagenic in the Ames test or Dominant lethal test in mice. Dipropylene glycol dibenzoate was not mutagenic in the Ames test.</p> <p>The reproductive toxicity of this product is not known.</p> <p>The neurotoxic effects of this product are not known.</p> <p>Overexposure to this product may affect the skin, eyes and respiratory tract.</p>

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Other toxicological information	No other toxic effects for this product are known.
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12. ECOLOGICAL INFORMATION

Ecotoxicological information	The ecological toxicity of this product is not known.
Bioaccumulation	This product is expected to be readily biodegradable.
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 E, SOLID (DIBENZOYL PEROXIDE, 50%) 5.2, UN3108, PG II NORTH AMERICAN ERG 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
Water	
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes
Nonionic surfactant	
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes
Zinc stearate	
Massachusetts Substance List	yes
Penn. Hazardous Substance list	yes
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes
Dipropylene glycol dibenzoate	
Toxic Subst. Cont. Act -listed	yes

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Domestic Substance List-Canada	yes
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Hazard classes	
Description	Applicable
HMIS Hazard Rating Source	HMIS
HMIS Health	1
HMIS Flammability	2
HMIS Reactivity	1
WHMIS Hazard Class	C, D-2B, F

Other regulatory information No other regulatory information is available on this product.
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16. OTHER INFORMATION

Other information PERKADOX is a registered trademark of Akzo Nobel Chemicals Inc.
Created by PRODUCT SAFETY (914)674-5000