

Material Safety Data Sheet for Keligrout

1. Chemical Product and Company Information

Trade Name: **KELIGROUT**
Chemical Name: Filled Unsaturated Polyester Resin
Synonyms: Anchoring Product
Product Code:
Manufacturer: KELKEN CONSTRUCTION SYSTEMS
Emergency Telephone: (732) 416-6730

2. Composition / Information on Ingredients

Component	CAS#	Exposure Limits	% by weight
Polyester Resin	Proprietary	None assigned	28±2%
Styrene Monomer	100-42-5	50.0 ppm ACGIH TWA 100.0 ppm ACGIH STEL	18±2%
Pigments	Proprietary	None assigned	54±2%

3. Hazard Identification

Emergency Overview: WARNING! Adhesive containing a flammable liquid. Causes eye irritation. May cause skin and upper respiratory tract irritation. May cause central nervous system depression. Do not take internally.

Relevant Routes of Exposure: Inhalation, eye and skin.

Signs and Symptoms of Acute Overexposure:

Exposure to styrene vapors from this product, above 50ppm, may cause irritation of the eyes, nose, and throat, and headache, nausea or vomiting. Liquid resin is irritating to eyes and skin. Protective gloves and goggles are recommended when contact with liquid resin by splash is possible. Use with adequate exhaust ventilation.

Potential Health Effects / Health Hazard Identification Signs and Symptoms of Chronic Overexposure:

No known chronic health effects have been observed with normal use of this product.

Acute Exposure

Eye: Causes Irritation

Skin: Causes Irritation

Ingestion: May cause irritation to the gastrointestinal track

Inhalation: Mucous membrane irritant

Chronic Exposure: Long-term exposure to excess styrene vapor may cause nausea, loss of appetite, CNS depression and general weakness.

Other Hazards:

Known Synergist: None Known

Explosion Hazard: Empty containers are dangerous. They still may contain flammable vapors. Keep away from heat, sparks, or flames.

Fire Hazard: Classified as Flammable Liquid.

Corrosion Hazard: Not Corrosive

4. First Aid Measures

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact: Immediately flush with plenty of water for a least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse.

Ingestion: Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Additional Protective Measures

First Aid Facilities: Eye bath, safety shower, washing facilitation.

Advice to Physicians: None Known

5. Fire Fighting Measures

Flammable Liquid: FLammability Class: 1C

Extinguishing Media: Water spray, dry chemical, Carbon Dioxide, Foam

Protective Equipment: Wear self-contained breathing apparatus and protective clothing.

Special Exposure Hazard: Containers can build pressure if exposed to heat or fire. The heat from a fire may cause polymerization which could cause violent rupture of closed containers. Vapors from the product may form explosive mixtures with air.

Special Fire Fighting Procedures: Use water spray to keep fire-exposed containers cool.

6. Accidental Release Measurers

Leaks and Spills:

Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. For large spills; flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

Personal Protection: Wear protective clothing.

7. Handling and Storage

Handling: Material is a combustible liquid; keep away from heat, open flame, oxidizers, and other ignition sources. Avoid breathing vapors. Use protective equipment when handling.

Storage: Store indoors with adequate ventilation and out of direct sunlight. Store away from oxidizing agents. Always use oldest lots first. Material should last 6 months at not over 75°F.

8. Exposure Controls / Personal Protection

Engineering Control: Local exhaust ventilation should be used to control the emissions of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. Respirator type: Organic vapor. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Ventilation Required: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances such as poorly ventilated space, evaporation from large surfaces, spraying, heating, etc.

Skin Protection: Wear impervious gloves, boots, and protective clothing appropriate for the risk of exposure.

Eye Protection: Wear safety glasses with side shields (or goggles).

9. Physical and Chemical Properties

Appearance:	Viscous liquid
Odor:	Styrene odor
Physical State:	Liquid
pH:	Not determined
Boiling Point:	295°F
Freezing Point:	Not determined
Flash Point:	89°F TCC
Vapor Pressure:	4.50 mm Hg @ 68°F
Oxidizing Properties:	Reacts with strong oxidizing agents
Solubility in Water:	Negligible
Density:	15.4 lb./gal
Specific Gravity:	1.77 ± 0.02
Volatile by Weight:	18%
Viscosity:	15,000 cps @ 72°F
Explosion Limits:	LEL 1.1% by volume UEL 6.1% by volume
Partition Coefficient:	Not determined
Evaporation Rate:	(Butyl Acetate = 1) : Slower than Butyl Acetate

10. Stability and Reactivity

Chemical Stability:	Unstable in extreme heat such as in a fire.
Conditions To Avoid:	Heat and open flame.
Incompatibility with Other Materials:	Avoid oxidizing agents
Hazardous Decomposition Products:	Carbon Dioxide, Carbon Monoxide and Organic Acids
Hazardous Polymerization:	May occur.

11. Toxicological Information

<u>Material</u> Styrene	<u>LD50.RAT.Oral</u> > 5g/kg
Eye Effects:	Mildly irritating
Skin Effects:	Mildly irritating
Inhalation Effects:	Prolonged breathing of vapors can cause headache.
Ingestion Effects:	May cause nausea

12. Ecological Information

Ecotoxicity:	The styrene in this product is expected to be toxic to aquatic organisms
Persistence:	The organic portion of this product is expected to biodegrade.

13. Disposal Considerations

United Nations Number: UN1993

Packing Group: PG III

14. Transport Information

U.S. Federal Regulations: Toxic substances control act (TSCA) Inventory - Yes

15. Regulatory Information

Hazard Class: Adhesive containing a flammable liquid.

ID Number: UN1133

Packing Group: III Flammable Liquid

NFPA Codes:

Health: 2

16. Other Information

Reactivity: 2

Flammability: 3

HMIS Codes:

Health: 2

Reactivity: 2

Flammability: 3

Workers using Keligrout should read and understand this MSDS and be trained in the proper use of this material.

MSDS Prepared By: Robert F. Korb
Technical Director

Revision Date: March 9, 2000

Reviewed Date: March 8, 2007

This MSDS has been prepared with data from laboratories, raw material supplier data and government publications.

This MSDS contains all the information items specified in Schedule 1, Column 3 of the Controlled Products Regulations in a 16 heading format.

Information herein is accurate to the best of our knowledge. Suggestions are made without warranty or guarantee of results. Before using, the user should determine the suitability of the products for his intended use, and the user assumes the risk and liability in connection therewith. We do not suggest violation of any existing patents or give permission to practice any patented invention without license.



SAFETY DATA SHEET

PERKADOX CH-50

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product label name Dibenzoyl peroxide, powder, 50% with dicyclohexyl phthalate	
Supplier Akzo Nobel Polymer Chemicals LLC 525 West Van Buren Street Chicago, IL 60607-3823 www.akzonobel-polymerchemicals.com	
Emergency telephone + 1-914-693-6946 Dobbs Ferry, NY USA	transportation emergency CHEMTREC - USA: 1-800-424-9300 CANUTEC - CANADA: 1-613-996-6666
Intended use Curing agent	
Date of last issue / Revision # 2005/12/08 / 0.04	
Chemical family peroxides	

2. COMPOSITION/INFORMATION ON INGREDIENTS

Information on hazardous ingredients			
Chemical description Dibenzoyl peroxide, powder, 50% with dicyclohexyl phthalate			
Composition / information on ingredients			
Number	% w/w	CAS-number	Chemical name
1	49 - 51	000094-36-0	Dibenzoyl peroxide
2	40 - 55	000084-61-7	Dicyclohexyl phthalate

3. HAZARDS IDENTIFICATION

Emergency overview DANGER! ORGANIC PEROXIDE. HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION. CAUSES EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. May cause fire.	
Appearance white powder with faint odor.	
Health effects Skin and eye contact are the primary routes of exposure to this product. Dust may be irritating to the respiratory tract and cause symptoms of bronchitis. May cause sensitization by skin contact. Irritating to eyes. This product has a low order of toxicity. No significant toxic effects are expected.	
Carcinogenicity	
Description	Applicable
IARC	no



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NTP	no
OSHA	no
ACGIH	no

4. FIRST AID MEASURES

Symptoms and effects Irritating to eyes. May cause sensitization by skin contact. Dust may be irritating to the respiratory tract and cause symptoms of bronchitis.	
First aid	
General	In all cases of doubt, or when symptoms persist, seek medical attention.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Oxygen may additionally be given, by trained personnel, if it is available. Get medical attention if symptoms occur.
Skin	Immediately wash skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.
Eye	Immediately flush eyes with plenty of water. If easy to do, contact lenses should be removed during the flushing, by trained personnel. Hold the eyelids apart during the flushing to ensure rinsing the entire surface of the eye and lids with water. Get medical attention if irritation persists.
Ingestion	Call a physician or a poison control center immediately. Induce vomiting only if directed by medical personnel. The patient should lie on their left side while vomiting to reduce the risk of aspiration. Never give anything by mouth to an unconscious or convulsing person.
Advice to physician Persons with pre-existing skin, eye, or respiratory disease may be at increased risk from the irritant or allergic properties of this material. Attending physician should treat exposed patients symptomatically.	

5. FIRE-FIGHTING MEASURES

Extinguishing media waterspray, foam, sand, dry chemical powder, CO2.
Unsuitable extinguishing media halones.
Hazardous decomposition/ combustion products CO2, Carbon monoxide. Benzoic acid, Benzene.
Protective equipment Firefighters must wear fire resistant protective equipment. Wear approved respirator and protective gloves.
Other information Evacuate all non-essential personnel. Extinguish a small fire with powder or carbon dioxide then apply water to prevent re-ignition. Cool closed containers with water. Water used to extinguish a fire should not be allowed to enter the drainage system or water courses. After a fire, ventilate thoroughly the area and soak with water, clean the walls and metallic surfaces.
Fire and explosion hazard CAUTION: reignition may occur. Decomposition under effect of heating (See also Section Hazardous decomposition products). If involved in a fire, it will support combustion. dust explosion hazard. Vapours may form explosive mixtures with air. In case of fire and/or explosion do not breathe fumes.

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NFPA ratings	
Hazard classes	Rating
Health	2
Flammability	3
Reactivity	3
Other information	-OX

6. ACCIDENTAL RELEASE MEASURES

<p>Personal precautions Do not breathe dust. Avoid contact with skin and eyes. For personal protection see Section 8.</p>
<p>Environmental precautions Do not allow to enter drains or water courses.</p>
<p>Methods for cleaning up Stop leakage if possible. Eliminate all sources of ignition, and do not generate flames or sparks. Sweep up and put it into a container for disposal. Avoid dust generation. Keep contents moist. The waste should NOT be confined. Flush surroundings with large amounts of water and soap.</p>
<p>Other information CAUTION: reignition may occur. Evacuate personnel to safe area.</p>

7. HANDLING AND STORAGE

<p>Handling Never weigh out in the storage room. When using do not eat, drink or smoke. Do not breathe dust. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Keep product and emptied container away from heat and sources of ignition. Confinement must be avoided. Do not allow to dry out. Avoid shock and friction. Avoid contact with skin and eyes. Avoid Incompatible materials (See Section 10).</p>
<p>Fire and explosion prevention Use explosion protected equipment. Keep away from sources of ignition - No smoking. Avoid dust generation. Dust explosion possible in the presence of air. Use non-sparking tools in area's where explosive dust air mixtures may occur. Do not cut or weld on or near this container even when empty. Blanketing the product with nitrogen reduces the flammability, but is not fully effective above 55°C (131°F).</p>
<p>Storage requirements Store in accordance with local/national regulations. Keep away from food, drink and animal feedingstuffs. Store in a dry well ventilated place away from sources of heat and direct sunlight. Store separate from other chemicals. Keep only in the original container.</p>
<p>Storage For maximum quality store below: 25 °C.</p>
<p>Other information It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded. Wash hands thoroughly after handling or contact. Keep working clothing separately and do not take them home.</p>

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<p>Engineering controls Ensure good ventilation and local exhaustion of the working area. Explosion proof ventilation recommended.</p>
<p>Personal protection</p>
<p>Respiratory Provide adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter P1).</p>

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Hand Wear suitable protective gloves of neoprene or synthetic rubber.
Eye Wear eye/face protection.
Skin and body Wear suitable protective clothing.
Other information Emergency-shower and facilities for rinsing eyes must be accessible. Launder clothes before reuse.

Dibenzoyl peroxide		
OSHA TLV/TWA		5 mg/m ³
ACGIH TLV/TWA		5 mg/m ³
NIOSH REL/TWA		5 mg/m ³
NIOSH IDLH		1500 mg/m ³

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance powder
Color white
Odor faint
Boiling point/range not applicable (Decomposes)
Melting point/range Decomposes prior to melting.
Flash point not applicable
Flammability Decomposition products may be flammable.
Explosive properties no
Oxidizing properties not applicable
Vapour pressure not applicable
Density 1230 kg/m ³ (20°C / 68°F) Specific gravity = 1.23 (20 °C / 68°F)
Bulk density 640 kg/m ³ (20°C / 68°F) Specific gravity = 0.64 (20° C / 68°F)
Solubility in water Insoluble at 20°C / 68°F
Solubility in other solvents not determined
pH value not determined
Partition coefficient n-octanol/water not determined

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Relative vapour density (air=1) not applicable
Viscosity not applicable
Active oxygen content 3.3 %
Peroxide content 49-51 %
Autoignition temperature Test method not applicable (See Section 7)
SADT 55 °C. See also Section 10.
Explosion limits not determined
Volatile % not determined

10. STABILITY AND REACTIVITY

Stability
SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the following temperature: 55 °C. Contact with incompatible substances can cause decomposition at or below the SADT 55 °C.
Conditions to avoid
To maintain quality store in original closed container below: 25 °C.
Avoid shock and friction. Confinement must be avoided.
Incompatibles
Avoid contact with rust, iron and Copper. Contact with incompatible materials such as acids, alkalies, heavy metals and reducing agents will result in hazardous decomposition. Do not mix with peroxide accelerators. Use only Stainless steel 316, PVC, polyethylene or glass-lined equipment.
Polymerization
Polymerization does not occur.
Decomposition
Hazardous decomposition products; Benzoic acid, Benzene.
Other information
Emergency procedures will vary depending on conditions. The customer must have an emergency response plan in place. Contact Akzo Nobel for assistance with developing an emergency response plan.

11. TOXICOLOGICAL INFORMATION

No experimental toxicological data on the preparation as such available. The following data are applicable to the ingredient(s) listed below.
Dibenzoyl peroxide, 78 %
Acute toxicity
Oral LD50 rat:> 5000 mg/kg
Inhalation LC50 rat:> 24.3 mg/l ; 4 hours exposure time max. attainable concentration

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Irritation
Skin Non-irritating (4 hours exposure time)
Eye Moderately irritating
Sensitization Sensitization possible by skin contact
Genotoxicity Ames test: Not mutagenic

12. ECOLOGICAL INFORMATION

No experimental ecological data are available on the preparation as such. The following data are applicable to the ingredient(s) listed below.	
Dibenzoyl peroxide, 78 %	
Ecotoxicity	
fish	Acute toxicity, 96h-LC50 = 2.0 mg/l. (Poecilia reticulata.)
daphnia	48 h-EC50 : 2.91 mg/l
bacteria	Activated sludge respiration inhibition test EC50 = 35 mg/l.
Fate	
Degradation Biotic	Readily biodegradable (Closed bottle test).

13. DISPOSAL CONSIDERATIONS

Product	Due to the high risk of contamination recycling/recovery is not recommended. Waste disposal in accordance with regulations (most probably controlled incineration).
Contaminated packaging	According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied.
Other information	For further advice contact manufacturer.

14. TRANSPORT INFORMATION

<i>Land transport</i>	
Class	5.2
Packing group	II
TREM-Card or ERG number	145
UN number	3106
Proper Shipping Name	Organic peroxide type D, solid (Dibenzoyl peroxide, 50%)



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Other information This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.
Required labels ORGANIC PEROXIDE.

<i>Sea transport (IMDG-code/ IMO)</i>
Class 5.2
UN number 3106
EMS F-J, S-R
Marine pollutant no
Proper Shipping Name Organic peroxide type D, solid (Dibenzoyl peroxide)
Other information Label(s): 5.2

<i>Air transport (ICAO-TI/ IATA-DGR)</i>
UN number 3106
Class 5.2
Proper Shipping Name Organic peroxide type D, solid (Dibenzoyl peroxide)
Other information Label(s); 5.2

15. REGULATORY INFORMATION

Product and or components listed below are subject of 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

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Hazard classes				
Description	Applicable			
EPA Immediate health	yes			
EPA Delayed health	no			
EPA Fire	yes			
EPA Pressure	no			
EPA Reactive	yes			
EHS Material	no			
Hazard Rating Source	HMIS			
HMIS Health	2			
HMIS Flammability	3			
HMIS Reactivity	3			
WHMIS Hazard classes	B-4,C,D-2B,F			
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Other regulatory information
 This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

History
Other information PERKADOX: This is a registered trademark of Akzo Nobel Chemicals BV or any of its affiliated companies in one or more territories in the world.
Date of printing/ pdf file generated 2007/03/21
Revision 0.04
Composed by N. Shoshenskiy, Regulatory Affairs - North America.J.W. Wessels - Regulatory Affairs - Europe.
Changes were made in section globalized
<small>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.</small>