

## Material Safety Data Sheet

Revision Date: 05/12  
Version 2.0

Print Date: 08/30/12  
MSDS Identification: 5000VS - Part B

Polymerization Initiator, Organic Peroxide

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name : 5000VS - Part B

Product Use Description : Polymerization Initiator, Organic Peroxide

Company : Protective Floorings and Linings  
A Division of Milamar Coatings, LLC  
311 N.W. 122nd St, Suite 100  
Oklahoma City, OK 73114

Telephone : 405-755-8448

Emergency Telephone Number: ChemTel 800-255-3924 or 813-248-0585 (International)

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (Weight)
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	58%
Methyl Ethyl Ketone Peroxide(s)	1338-23-4	32% - 34%
Hexylene Glycol	107-41-5	6%
Methyl Ethyl Ketone	78-93-3	1% - 2%
Hydrogen Peroxide	7722-84-1	0.70%
Water	7732-18-5	<0.7%

### 3. HAZARDS INFORMATION

#### Emergency Overview

DANGER!  
Organic Peroxide.  
Causes Eye Burns; may cause blindness.  
Causes Skin Irritation.  
May Cause Respiratory Tract Irritation.  
May Cause Allergic Skin Reaction.  
Clear Oily Liquid; Ketone Odor.

#### Potential Health Effects (See Section 11 for toxicological data.):

Skin contact and inhalation are expected to be the primary routes of exposure to this material. Based on its composition, it is anticipated to be moderately toxic if swallowed, slightly toxic if absorbed through skin, practically non-toxic if inhaled, severely irritating to skin and corrosive to eyes. Prolonged or repeated contact may cause an allergic skin reaction. Overexposure to vapor may lead to digestive disorders, narcosis and central nervous system (CNS) effects such as headache, dizziness, loss of coordination, loss of consciousness or convulsions. If swallowed, this material may cause CNS effects as noted above, irritation of the mouth, throat and stomach and, in severe cases, death.

# Material Safety Data Sheet

Revision Date: 05/12  
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## 4. FIRST AID MEASURES

Eye Contact	:	Immediately flush with plenty of water for 15 minutes. Get medical attention immediately.
Skin Contact	:	Immediately flush the area with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes.
Ingestion	:	DO NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
Inhalation	:	Move to fresh air. If breathing is difficult, get medical attention.

## 5. FIRE-FIGHTING MEASURES

Flammable Properties		
Flash Point	:	160 degrees F (71degrees C) CC
Method Used	:	Seta CC
Auto Ignition Temperature	:	NE
Flammability Limits		
LFL	:	NE
UFL	:	NE
Fire and Explosion Hazards	:	Contact with incompatible materials or exposure to temperatures exceeding the SADT may result in a self accelerating decomposition reaction with the release of flammable vapors which may autoignite.
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.

## 6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

In Case Of Spill Or Leak	:	Use inert, non-combustible absorbent material. Sweep or scoop up using non-sparking tools. Wet down and dispose of immediately. 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.
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## 7. HANDLING AND STORAGE

Material Safety Data Sheet

Revision Date:05/12  
Version 2.0

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- Handling :
- Storage :

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering Measures :
- Eye / Face Protection :
- Skin Protection :
- Respiratory Protection :
- Airborne Exposure Guidelines For Ingredients :
- Hexylene Glycol : ACGIH STEL - 25ppm 121mg/m3
- Hydrogen Peroxide : ACGIH TWA - 1 ppm 1.4 mg/m3
- OSHA TWA PEL - 1 ppm 1.4 mg/m3

# Material Safety Data Sheet

Revision Date: 05/12  
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Methyl Ethyl Ketone	:	ACHIG Ceiling	-	300ppm 885 mg/m3
		ACGIH TWA	-	200ppm 590mg/m3
		OSHA TWA PEL	-	200ppm 590 mg/m3
		200ppm 590 mg/m3		
Methyl Ethyl Ketone Peroxide	:	ACGIH STEL	-	0.2 ppm 1.5 mg/m3

\*Only those components with exposure limits are printed in this section.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear Oily Liquid; Ketone Odor.
pH	:	NA
Specific Gravity	:	1.004 @ 25 degrees C
Vapor Pressure	:	NE
Vapor Density	:	NE
Melting Point	:	< 0 degrees C
Freezing Point	:	NE
Boiling Point	:	NE
Solubility In Water	:	Slight
Evaporating Rate	:	NE
Percent Volatile	:	98% VOC
SADT	:	169 degrees F (75 degrees C) (45 lb carton)
Active Oxygen Content	:	8.7% - 9.0%

This material is chemically unstable and should only be handled under specified conditions. See HANDLING AND STORAGE section of this MSDS for specific 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 similar ratio to heat transfer area to volume of product.

## 10. STABILITY AND REACTIVITY

# Material Safety Data Sheet

Revision Date: 05/12  
Version 2.0

Print Date: 08/30/12  
MSDS Identification: 5000VS - Part B

Polymerization Initiator, Organic Peroxide

Stability : This material is chemically unstable and should only be handled under specific conditions. See HANDLING AND STORAGE section of this MSDS for specific 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 similar ratio to heat transfer area to volume of product.

Incompatibility With Other Materials : Contact with strong acids, alkalis, oxidizers, transition metal salts, promoters / accelerators and reducing agents may result in a violent decomposition reaction or product degradation. (see Section 16).

Hazardous Decomposition Products : Temperatures at or above the SADT can result in the release of hazardous decomposition products which are flammable and may autoignite.

Hazardous Polymerization : Does not occur.

## 11. TOXICOLOGICAL INFORMATION

Toxicological Information : Data on this material and / or its components are summarized below

Methyl Ethyl Ketone Peroxide : Single exposure (acute) studies indicate that this material (40%-60% in dimethyl phthalate) is moderately toxic to rats if swallowed (LD50 484mg/kg), slightly toxic to rabbits if absorbed through skin (LD50 4,000 mg/kg), practically non-toxic to rats if inhaled (4-hr LC50 17-50 mg/l), corrosive to rabbit eyes, and moderately irritating to rabbit skin (4-hr exposure, 4.5/8.0).

Following an allergic skin reaction in a paint sprayer, patch testing produced an allergic skin reaction with this material as well as other components of the paint. However, subsequent patch testing did not produce allergic skin reactions in 34 healthy subjects. Swallowing of this material was reported to cause liver injury in one case report.

Repeated oral administration of this material was reported to result in decreased body weight, mild liver and kidney injury and death in rats. Following repeated application of this material in dimethyl phthalate to the skin of rats and mice, severe skin damage and animal deaths (only at the highest dose levels) were the primary effects. Spleen and bone marrow changes considered secondary to the severe skin damage were noted in animals at the high doses. Higher doses applied to rat and mouse skin for a shorter time produced similar effects. Long-term repeated skin application of this material in dimethyl phthalate was reported to enhance skin tumor production in mice irradiated with UVB. This material has produced genetic changes in standard tests using bacterial or animal cells. However, no genetic changes occurred in a standard test using animals.

2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate:

Single exposure (acute) studies indicate that this material is no more than slightly toxic to rats if swallowed (LD50 >3,200 mg/kg), practically non-toxic to guinea pigs if absorbed through skin (LD50 >20 ml/kg) or rats if inhaled (6-hr LD50 >5.3 mg/l), and

# Material Safety Data Sheet

Revision Date: 05/12  
Version 2.0

Print Date: 08/30/12  
MSDS Identification: 5000VS - Part B

Polymerization Initiator, Organic Peroxide

slightly irritating to rabbit eyes and to guinea pig skin.

No skin allergy was observed in guinea pigs following repeated exposure. Increased liver weights, which were probably adaptive changes due to the induction of drug metabolizing enzymes in these tissues, were observed in rats or dogs fed up to 1% in their feed for up to 103 days. This material is eliminated in the excreta of rats following a single oral dose with little or no retention in the tissues or organs.

## Hexylene Glycol

: Single exposure (acute) studies indicate that this material is slightly toxic to rats, rabbits, mice and guinea pigs if swallowed (LD50 2,800-4,700 mg/kg), practically non-toxic to rabbits if absorbed through skin (LD50 12,300 mg/kg), severely irritating to rabbit eyes, and moderately irritating to rabbit skin. No deaths occurred in rats exposed to about 160 ppm for 8-hours.

Skin application of 50% of this material in water showed only minimal irritation in human volunteers, while repeated application of consumer products containing up to 1% showed no irritant or sensitizing effects in humans. Patch tests have shown sensitization responses in individuals working with cutting oils containing this material. Rats and rabbits exposed to 0.7 ml for 9 days showed no adverse effects. This material in the diet at up to 150 mg daily for 4 months produced no adverse effects on growth, behavior or fertility in rats. Changes in the kidney were noted at 200 mg/day. No genetic changes were observed in tests using bacteria or animal cells.

## Methyl Ethyl Ketone

: Single exposure (acute) studies indicate that this material is no more than slightly toxic to rats if swallowed (LD50 2,700-5,600 mg/kg), practically non-toxic to rabbits if absorbed through skin (LD50 5,000-13,000mg/kg) or rats if inhaled (4-hr LC50 11,000 ppm), and moderately irritating to rabbit eyes and skin.

Repeated exposure of humans to controlled skin contact studies with this material produced no skin irritation or skin allergy. Central nervous system (CNS) effects and peripheral neuropathy have been reported in the industrial setting following exposure to mixtures containing this material; however, these mixtures contained other solvents known to cause nervous system injury.

Following repeated inhalation exposure, slight changes in organ weights and blood chemistry were reported in rats. No evidence of nervous system injury following long term inhalation exposure to this material has been observed in rats, chickens, mice or cats. Animal studies have shown this material to increase the severity of, or shorten the onset of, irreversible nervous system effects due to n-hexane and methyl butyl ketone, as well as effects of chloroform and carbon tetrachloride. This material did not increase the incidence of tumors in long-term skin application studies in mice. A small number of major birth defects were reported in rats exposed to this material by inhalation during pregnancy at a level (3,000 ppm) which produced toxic effects in the offspring, but not in the mothers. However, no birth defects were found in a second repeat study with rats using very similar exposure conditions, while adverse effects were noted in the mothers and their offspring. In mice exposed to 3000 ppm of this material by inhalation during pregnancy, toxic effects were observed in the mothers (mild effects only) and their offspring. This material has generally produced no genetic changes in standard tests using animals and animal or bacterial cells. A positive response was reported in one assay using yeast cells.

# Material Safety Data Sheet

Revision Date: 05/12  
Version 2.0

Print Date: 08/30/12  
MSDS Identification: 5000VS - Part B

Polymerization Initiator, Organic Peroxide

## 12. ECOLOGICAL INFORMATION (for detailed Ecological data, write or call the address or non-emergency number shown on Section 1).

Ecotoxicological Information	:	Data on this material and / or its components are summarized below.
Methyl Ethyl Ketone Peroxide	:	This material is toxic to guppies (96-hr LC 50 44.2 mg/l).
2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate:		This material is no more than moderately toxic to fathead minnow, ramshorn snails, aquatic earthworms, sideswimmers, pill bugs and flatworms (96-hr LC50s >1.55 mg/l), and daphnids (96-hr EC 50 >1.46 mg/l)
Hexylene Glycol	:	This material has been reported to be practically non-toxic to a variety of aquatic organisms by acute toxicity testing. Freshwater fish including rainbow trout, bluegill sunfish, fathead minnow, mosquito fish, goldfish and channel catfish had LC 50 values in excess of 1,000 mg/l and generally were in the range of 8,000 to 10, 000 mg/l Aquatic invertebrates such as Daphnia and crayfish had EC 50 values greater than 2,800 mg/l.
Methyl Ethyl Ketone	:	This material inhibits fungal growth and is reported to be bacteriostatic to several microorganisms (Escherichia coli, Salmonella typhimurium, Staphylococcus aureus, Leuconostoc citrovorum and Streptococcus thermophilus) at levels of 10-100 mg/l. Growth inhibition has also been reported for freshwater algae at levels ranging from 120 mg/l (blue-green algae) to 4,300 mg/l (green algae)
Chemical Fate Information	:	Data on this material and / or its components are summarized below.
Methyl Ethyl Ketone Peroxide	:	This material was reported to be readily biodegradable in a closed bottle system. An EC50 of 16 mg/l was reported in an activated sludge respiration inhibition test.
2,2,4-Trimethyl-1,3-Pentanediol Diisobutyrate:		In a 28 day modified Sturm Test, this material was found to undergo 32%-59% degradation to CO2. The bioconcentration factor without metabolism was estimated to be 670 with metabolism 1-40. The log Pow is estimated to be 4.1.
Hexylene Glycol	:	Chemical oxygen demand (COD) and biological oxygen demand (BOD) indicate that this material is readily biodegraded.
Methyl Ethyl Ketone	:	Extensive data suggests that this material is readily biodegradable. It is non-toxic to sludge microorganisms at concentrations up to 800 ug/l.

## 13. DISPOSAL CONSIDERATIONS

Waste Disposal	:	Dispose in accordance with federal, state and local regulations. Dilution followed by incineration is the preferred method. Dilution ratio of 10:1 in a clean, compatible solvent (i.e., Fuel Oil #2, mineral oil will reduce reactivity hazard during incineration and transportation).
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## 14. TRANSPORT INFORMATION

CFR (D.O.T.)

# Material Safety Data Sheet

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Print Date: 08/30/12  
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Proper Shipping Name : Organic Peroxide Type D, Liquid

D.O.T. Technical Name : [Methyl Ethyl Ketone Peroxide(s), = 45%]

D.O.T. Hazard Class : 5.2

UN / ID Number : UN3105

Packing Group : III

RQ : Methyl Ethyl Ketone Peroxide(s) = 10 pounds.

## 15. REGULATORY INFORMATION (not meant to be all-inclusive -- selected regulations represented)

Notice: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections or health and safety information.

The components of this product are either on the TSCA inventory list or exempt as impurities.

### Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health Y

Delayed (Chronic) Health N

Fire Y

Reactive Y

Sudden Release of Pressure N

### Ingredient Related Regulatory Information :

<u>SARA Reportable Quantities</u>	<u>CERCLA RQ</u>	<u>SARA TPQ</u>
Hexylene Glycol	NE	
Hydrogen Peroxide	NE	1000 pounds
Water	NE	
Methyl Ethyl Ketone	5000 pounds	
Methyl Ethyl Ketone Peroxide(s)	10 pounds	
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	NE	

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 40CFR Part 372. See Section 2.

SARA Title III, Section 302 :

This product does contain chemical(s), as indicated below, currently on the Extremely Hazardous Substance List, Section 302, SARA Title III. See Section 2 for further details regarding concentrations and registry numbers: Hydrogen Peroxide

Massachusetts Right To Know :

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

Hexylene Glycol

Hydrogen Peroxide

Methyl Ethyl Ketone

Methyl Ethyl Ketone Peroxide(s)

New Jersey Right To Know :

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right To Know



# Material Safety Data Sheet

Revision Date: 05/12  
Version 2.0

Print Date: 08/30/12  
MSDS Identification: 5000VS - Part B

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Substance List:

Hexylene Glycol  
Hydrogen Peroxide  
Methyl Ethyl Ketone  
Methyl Ethyl Ketone Peroxide(s)

Pennsylvania Right To Know :

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Right To Know Substance List:

Hexylene Glycol  
Hydrogen Peroxide  
Methyl Ethyl Ketone  
Methyl Ethyl Ketone Peroxide(s)

Pennsylvania Environmental Hazard :

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

Hexylene Glycol  
Hydrogen Peroxide  
Methyl Ethyl Ketone  
Methyl Ethyl Ketone Peroxide(s)

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## 16. OTHER INFORMATION

Miscellaneous

Additional Incompatibility Data : Rust, copper and brass are not compatible with MEK peroxide. 316 stainless steel, glass, polyethylene, polytetrafluoroethylene and polypropylene are preferred materials for contact with MEK peroxide. Acetone may react with residual hydrogen peroxide to form insoluble shock-sensitive acetone peroxide crystals.

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Prepared By : Protective Floorings and Linings. EH&S Product Safety Department