

ACETONE



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FICHE SIGNALÉTIQUE MATERIAL SAFETY DATA SHEET

SECTION I: PREPARATION INFORMATION

SUPPLIER/MANUFACTURER:
ASHLAND CHEMICAL
2620 Royal Windsor Drive
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L5J-4E7

MATERIAL SAFETY DATA SHEET
DATE PREPARED: 11/21/96
PREPARED BY: Safety Department
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SECTION II: PRODUCT INFORMATION

Code: I0260

Rev: 00

Product Name: ACETONE

General/Generic Name: KETONE

Product Use: SOLVENT

WHMIS Classification: CLASS B DIV 2; CLASS D DIV 2 SUB. B

DSL Status: ON DSL

P 305

SECTION III: HAZARDOUS INGREDIENT(S)

INGREDIENT:	% W/W	TLV	CAS NO.
ACETONE	100	750 PPM	67-64-1

Note: * Recommended
N/E - Not Established N/A - Not Applicable

SECTION IV: PHYSICAL DATA

INITIAL BOIL-POINT:	COMPONENT (-) 56	DEG.C. 133	DEG.F. @ 760 MMHG
VAPOUR PRESSURE:	COMPONENT (-) 180	MMHG 20	DEG.C. 68 DEG.F.
VAPOUR DENSITY:	(X) HEAVIER THAN AIR		(-) LIGHTER THAN AIR
EVAPORATION RATE:	(X) SLOWER THAN ETHER		(-) FASTER THAN ETHER
PHYSICAL STATE:	LIQUID		
ODOUR THRESHOLD:	N/E	FREEZING POINT: N/E	DEG.C. PH: N/E
SPECIFIC GRAVITY:	0.79 @ 20	DEG.C./68	DEG.F.
% VOLATILE:	100 %		
APPEARANCE AND ODOUR:			
CLEAR LIQUID, KETONE ODOUR			



SECTION V: FIRE & EXPLOSION INFORMATION

FLASH POINT: (X)CLOSED CUP (-)N/A(-)OPEN CUP -17.8 DEG.C. 0.0 DEG.F.
FLAMMABLE LIMITS: LFL: 2.6 % UFL: 36 % (-)N/E COMPONENT(-)
AUTO IGNITION TEMPERATURE: N/A DEG.C
EXTINGUISHING MEDIA: (X)FOAM (X)WATER FOG (X)DRY CHEMICAL (X)CARBON DIOXIDE

HAZARDOUS COMBUSTION PRODUCTS:
CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES:
WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE
OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS:
VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE
MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES,
SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER
IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY)
BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS
AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS
TRANSFERRED.

SECTION VI: TOXICOLOGICAL PROPERTIES

THRESHOLD LIMIT VALUE:
SEE SECTION III

EFFECTS OF ACUTE OVEREXPOSURE:

EYES-
EYES - CAUSES MODERATE IRRITATION, REDNESS, TEARING.

SKIN/SKIN ABSORPTION-
SKIN - CAN CAUSE IRRITATION.

BREATHING-
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND
RESPIRATORY IRRITATION AND CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING
DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE AND POSSIBLE
UNCONSCIOUSNESS.

SWALLOWING-
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING,
AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE
CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

OTHER DATA-
ACETONELD:50 (ORL-RAT) 9750 MG/KG
LC:50 (INH-RAT) 16000 PPM/4H
LD:50 (SKN-RBT) 20000 MG/KG .

KEEP AWAY FROM HEAT AND FLAME.

SECTION VII: FIRST AID MEASURES

FIRST AID:
IF ON SKIN-
THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE
CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES-
FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS
OCCASIONALLY, GET MEDICAL ATTENTION.

IF SWALLOWED-
DO NOT INDUCE VOMITING, KEEP PERSON WARM AND QUIET, AND GET MEDICAL
ATTENTION.

IF BREATHED-
IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS
DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED, GIVE
ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET, AND GET MEDICAL
ATTENTION.

SECTION VIII: REACTIVITY DATA

HAZARDOUS POLYMERIZATION:
CANNOT OCCUR.

STABILITY:
STABLE.

INCOMPATIBILITY:
AVOID CONTACT WITH:
STRONG OXIDIZING AGENTS.
STRONG ALKALIES.
STRONG MINERAL ACIDS.

HAZARDOUS DECOMPOSITION PRODUCTS:
NOT APPLICABLE

SECTION IX: PREVENTIVE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL:
ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL:
ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL:
ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL:
DESTROY BY INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

RESPIRATORY PROTECTION:
IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION III), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION:
PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES:
POLYVINYL ALCOHOL
VITON

EYE PROTECTION:
CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT:
TO PREVENT SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SHIPPING INFORMATION

SHIPPING NAME: ACETONE

UN NUMBER : 1090
CLASS : 3
PACKING GROUP: II

11/17/97

code: i0260
PREVENTIVE MEASURES

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PRODUCT DISPOSAL INFORMATION
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This product may be classified as a liquid industrial waste or a registerable solid waste and may be subject to waste generator requirements.

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Metal and plastic containers may be recycled. Please contact your Drum Reconditioner for further information.

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THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.
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LAST-PAGE

CADOX M-50a (Catalyst)

Akzo Nobel Chemicals Inc.
MATERIAL SAFETY DATA SHEET

DATE PRINTED: 6/10/1999

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MSDS NO. 11-076289

Cadox M-50a

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME Cadox M-50a	CHEMICAL NAME Methyl ethyl ketone peroxide in solution
SYNONYM MEKP	CHEMICAL FORMULA Mixture
CAS # MIXTURE	CHEMICAL FAMILY Organic peroxides/ketone peroxides
MANUFACTURERS NAME Akzo Nobel Chemicals Inc.	PRODUCT/TECHNICAL INFORMATION 1-800-828-7929
ADDRESS 300 South Riverside Plaza Chicago, IL 60606	MEDICAL/HANDLING EMERGENCY 1-914-693-6946
COUNTRY USA	TRANSPORTATION EMERGENCY CHEMTREC 1-800-424-9300
PRODUCT USE Polymerization initiator	REVISION DATE 4/01/1999
ISSUE DATE 2/12/1997	REVISION NO. 007

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE DESCRIPTION	PERCENT	CAS#
Methyl ethyl ketone peroxide (MEKP)	30.000- 35.000	1338-23-4
Hydrogen peroxide	0.001- 3.000	7722-84-1
2,2,4-Trimethylpentanediol-1,3-diisobutyrate	60.000- 70.000	6846-50-0
Water	0.001- 2.000	7732-18-5
Methyl ethyl ketone	** 0.001- 2.000	78-93-3

** SUBSTANCE IS A COMPOUND AND/OR MIXTURE

SECTION 3. HAZARDS IDENTIFICATION

Appearance & Odor

Clear, colorless liquid with a faint ketone odor.

STATEMENT OF HAZARDS

DANGER!
ORGANIC PEROXIDE.
HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION.
CAUSES SEVERE EYE AND SKIN BURNS.
CAUSES RESPIRATORY TRACT IRRITATION.
COMBUSTIBLE LIQUID AND VAPORS.

Fire & Explosion Hazards

This product is a combustible liquid. Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined.

Primary Route of Exposure

Skin and eye contact and inhalation of vapor are the principal routes of exposure to this product.

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Cadox M-50a

SECTION 3. HAZARDS IDENTIFICATION
(CONTINUED)

Inhalation Acute Exposure

Inhalation of vapor, mist or aerosol is expected to be severely irritating to the respiratory tract.

Skin Contact - ACUTE

Skin contact can cause chemical burns with severe blistering.

Eye contact - ACUTE

Direct eye contact with this chemical can cause an immediate severe reaction and may result in loss of functional vision in the involved eye. Use of fully protective goggles is essential when using this product.

Ingestion - ACUTE

If swallowed, this material can cause severe irritation or burns of the mouth, throat, esophagus and stomach.

CARCINOGENICITY

IARCNO	OSHANO
NTPNO	ACGIHNO

SECTION 4. FIRST AID MEASURES

Inhalation First Aid

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 Contact - First Aid

Immediately remove contaminated clothing and shoes. Wash skin with soap and plenty of water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Get medical attention. Wash contaminated clothing before reuse. Destroy contaminated shoes.

Eye Contact - First Aid

Immediately flush eyes with large quantities of running water for a minimum of 15 minutes. If the victim is wearing contact lenses, remove them. Take care not to contaminate the victim's healthy skin and eyes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids. DO NOT let victim rub eye(s). Do not attempt to neutralize with chemical agents. Get medical attention immediately. Oils or ointments should not be used at this time. Continue flushing for an additional 15 minutes if a physician is not immediately available.

Ingestion - First Aid

Do NOT induce vomiting. Call a physician or a poison control center immediately. Give victim plenty of water to drink. Never give anything by mouth to an unconscious or convulsing person. Get medical attention immediately.

Medical conditions aggravated

Persons with pre-existing skin and/or respiratory disease may be at increased risk if exposed to this material.

Note to Physician

Methyl ethyl ketone peroxide is severely corrosive to the eyes and may cause delayed keratitis. The normally prescribed 15 minute eye irrigation after exposure may be difficult because of the severe pain. The prior installation of a topical ocular anesthetic is essential to facilitate a comprehensive ocular lavage.

Swallowing of this corrosive material may result in severe

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SECTION 4. FIRST AID MEASURES
(CONTINUED)

ulceration, inflammation, and possible perforation of the upper alimentary tract, with hemorrhage and fluid loss. Aspiration of this product during induced emesis can result in severe lung injury. If evacuation of the stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Control Center for additional treatment information.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT

179.60 F 82.00 C

FLASH METHOD

Setaflash Closed Cup

AUTO IGNITION TEMPERATURE

N/D F N/D C

UPPER EXPLOSION LIMIT

N/D

LOWER EXPLOSION LIMIT

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.

Contaminated buildings, areas and equipment must not be used until they are properly decontaminated. Dike fire water for later disposal. Do not allow contaminated water to enter waterways.

Fire & Explosion Hazards

This product is a combustible liquid. Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined.

Other Fire + Explosion Hazards

This product can produce flammable vapors which may travel to a source of ignition and flash back.

Hazardous Products/Combustion

Thermal decomposition products may include carbon dioxide, water, acetic acid, formic acid, propionic acid, methyl ethyl ketone and flammable gases and vapors.

NFPA HEALTH RATING

3

NFPA FLAMMABILITY RATING

2

NFPA REACTIVITY RATING

2

NFPA OTHER

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Cleanup

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.

SECTION 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 MAXIMUM STORAGE TEMPERATURE shown below.

To prevent possible self-accelerating decomposition, temperatures in the storage facility must not exceed 131 F (55 C).

Keep containers tightly closed. Store away from amines, acids alkalis and heavy metal compounds (e.g. driers, metal soaps and accelerators).

MAXIMUM STORAGE TEMPERATURE

86.00 F 30.00 C
(to maintain product quality)

General Comments

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

SECTION 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.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
(CONTINUED)

Skin Protection

Skin contact with liquid or its aerosol must be prevented through the use of permeation resistant clothing, gloves and footwear. Unprotected skin exposed to vapor, aerosol or mist must be thoroughly washed before eating, drinking, smoking and at the end of the workshift.

Eye Protection

Because eye contact with this product may cause burns and possibly permanent damage, chemical goggles and/or a full face shield must be worn whenever 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 Protection

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 freeze-ups in cold weather.

APPLICABLE EXPOSURE LIMITS

Available exposure limits applicable to this product are shown below.

EXPOSURE LIMITS/REGULATORY INFORMATION
 (IN MG/M3)

SUBSTANCE DESCRIPTION	REG. AGENCY	PEL	TLV	TWA	STEL	CEIL
Methyl ethyl ketone peroxide (MEKP)	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	1,500
	NIOSH	N/D	N/D	N/D	N/D	1,500
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Hydrogen peroxide	OSHA	1,400	N/D	N/D	N/D	N/D
	ACGIH	N/D	1,400	N/D	N/D	N/D
	NIOSH	N/D	N/D	1,400	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
2,2,4-Trimethylpentanediol-1,3-diisobutyrate	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	N/D
	NIOSH	N/D	N/D	N/D	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Water	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	N/D
	NIOSH	N/D	N/D	N/D	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
(CONTINUED)

Methyl ethyl ketone						
	OSHA	590.0000	N/D	N/D	885.0000	N/D
	ACGIH	N/D	590.0000	N/D	885.0000	N/D
	NIOSH	N/D	N/D	590.0000	885.0000	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D

LEGEND:

EXPOSURE LIMIT DESCRIPTIONS

CEIL Ceiling Exposure Limit
 PEL Permissible Exposure Limit
 STEL Short Term Exposure Limit
 TLV Threshold Limit Value
 TWA Time Weighted Average
 N/D = Not Determined

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE (mm Hg) N/D	VAPOR DENSITY (Air = 1.0) N/D
EVAPORATION RATE N/D	VOLATILE % N/D
BOILING POINT N/D F N/D C	ODOR THRESHOLD (ppm) N/D
SPECIFIC GRAVITY 1.0 @ 20 deg C (68 deg F)	BULK DENSITY N/D
SOLUBILITY IN WATER N/D	SOLUBILITY IN OTHER SOLVENTS
COEFFICIENT OF OIL/WATER N/D	POUR POINT N/D F N/D C
MELTING POINT N/D F N/D C	pH FACTOR N/D
CLOUD POINT N/D F N/D C	FLASH POINT 179.60 F 82.00 C
FLASH METHOD Setaflash Closed Cup	UPPER EXPLOSION LIMIT N/D
LOWER EXPLOSION LIMIT N/D	AUTO IGNITION TEMPERATURE N/D F N/D C

Other
 SADT = 140 F (60 C) (See Sect. 10).

SECTION 10. STABILITY AND REACTIVITY

Stability

This product is stable at temperatures up to 131 F (55 C).

Incompatibilities

Avoid contact with strong acids, strong alkalis, strong oxidizers, accelerators and reducing agents.

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SECTION 16. OTHER INFORMATION
(CONTINUED)

KEY TO ABBREVIATIONS:

EQ=Equal

LT=Less Than

GT=Greater Than

AP=Approximately

TR=Trace

ND=No Data available

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. Akzo Nobel Chemicals Inc.; however makes no warranty as to the accuracy of and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein 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. The information contained herein supersedes all previously issued bulletins on the subject matter covered.

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SECTION 10. STABILITY AND REACTIVITY
(CONTINUED)

Polymerization

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

Decomposition

Decomposition products include carbon dioxide, carbon monoxide, ethane and methane.

Conditions to Avoid

Hazardous and uncontrollable decomposition may occur if this product is exposed to temperatures above 131 F (55 C). This temperature is based on the Self-Accelerating Decomposition Temperature (SADT). The SADT is an experimentally derived temperature at which a typical package of the product will undergo self-accelerating decomposition.

For this product, the SADT is 140 F (60 C).

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological - Inhalation

Inhalation toxicity data is not available for this product. However, the acute LC50 for a similar product is 17.0 mg/L in rats (4 hr exposure). Exposure to methyl ethyl ketone at high concentrations has resulted in central nervous system depression.

Inhalation Chronic Exposure

Prolonged and/or repeated inhalation is expected to be severely irritating to the respiratory system.

Toxicological - Dermal

Dermal toxicity data is not available for this product. However, the dermal LD50 for a similar product is 4000 mg/kg in rabbits. A similar product was corrosive to albino rabbits after a 4 hour occlusive contact.

Skin Contact - CHRONIC

Chronic dermal exposure effects for this product are not known.

In a 13-week study conducted by the NTP, a similar product was administered topically for 5 days per week to rats at doses of 1.07 to 107 mg/rat and to mice at doses of 0.357 to 35.7 mg/mouse. Necrosis, inflammation, and epidermal hyperplasia were observed in both species. Since toxicity was seen at all dose levels, a no-observed adverse-effect level could not be determined in this study. The results of this study suggest that a similar product does not become systemically available and the primary toxicity associated with contact to this chemical is limited to the application site.

Toxicological - Eye

This product can be expected to be corrosive to eyes based upon tests with a similar product.

Toxicological - Ingestion

Ingestion toxicity data is not available for this product. However, the acute oral LD50 for a similar product is 1017 mg/kg in rats (moderately toxic). The acute oral LD50 for a component of this product is greater than 3200 mg/kg in rats (slightly to practically non-toxic).

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SECTION 11. TOXICOLOGICAL INFORMATION
(CONTINUED)

Ingestion - CHRONIC

Chronic ingestion effects of this product are not known. A component of this product was administered in the diet of rats (103 days) and dogs (90 days). The NOAEL for both species was a 1% concentration (highest dose tested).

CARCINOGENICITY/MUTAGENICITY

This product is not classified as a carcinogen by IARC, NTP, OSHA or ACGIH. There is no mutagenicity data for this product, however, information is available for a similar product. Four in vitro mutagenicity assays were conducted by the NTP in the presence and absence of metabolic activation. The similar product was not mutagenic in the Ames test. It was mutagenic in mouse lymphoma cells without metabolic activation and induced sister chromatid exchanges and chromosomal aberrations in Chinese hamster ovary cells in the presence and absence of metabolic activation. In the 13-week dermal study in mice, no increase in micronucleated erythrocytes was seen in peripheral blood samples obtained at the end of the study.

REPRODUCTIVE EFFECTS

Development inhalation toxicity studies with methy ethyl ketone in rats and mice resulted in fetal toxicity at maternally toxic doses.

NEUROTOXICITY

The neurotoxic effects of this product are not known.

Other Toxicological Effects

No other toxic effects for this product are known.

Target Organs

Exposure to this product may affect the skin, eyes and respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

The ecological toxicity of this product is not known.

DISTRIBUTION

Other ecological information on this product is not known.

CHEMICAL FATE

This product is expected to be readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal

This unused product is listed by the EPA hazardous waste number U160 (MEKP) and meets the EPA hazardous waste definitions for the characteristics of reactivity (D003) and corrosivity (D002). It is the responsibility of the waste generator to evaluate whether the waste meets EPA's definition of hazardous waste by characteristic or listing. Dispose of in accordance with all local, state and federal regulations.

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SECTION 13. DISPOSAL CONSIDERATIONS
(CONTINUED)

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.

SECTION 14. TRANSPORT INFORMATION

SHIPPING DESCRIPTION

ORGANIC PEROXIDE TYPE E, LIQUID
(METHYL ETHYL KETONE PEROXIDE, <=40%)
5.2, UN3107, PG II
NORTH AMERICAN EMERGENCY RESPONSE GUIDE NO.: 145

REQUIRED LABELS

ORGANIC PEROXIDE.

ENVIRON. HAZARDOUS SUBSTANCE

This product contains methyl ethyl ketone peroxide (RQ=10 lbs.)
which is an environmentally hazardous substance per 49 CFR 172.101,
Appendix A.

SECTION 15. REGULATORY INFORMATION

Component Methyl ethyl ketone peroxide (MEKP) is subject to the following

Environmental List

CERCLA	CERCLA Hazardous Substances
DSL	Domestic Substance List-Canada
MA. LIST	Massachusetts Substance List
NJ R-T-K	New Jersey R-T-K Hazard. Sub.
PA. LIST	Penn. Hazardous Substance List
TSCA	Toxic Subst. Cont. Act -listed

Component Hydrogen peroxide is subject to the following

Environmental List

DSL	Domestic Substance List-Canada
MA. LIST	Massachusetts Substance List
NJ R-T-K	New Jersey R-T-K Hazard. Sub.
PA. LIST	Penn. Hazardous Substance List
SARA 302	SARA Title III, Section 302
TSCA	Toxic Subst. Cont. Act -listed

Akzo Nobel Chemicals Inc.
MATERIAL SAFETY DATA SHEET

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SECTION 15. REGULATORY INFORMATION
(CONTINUED)

Component 2,2,4-Trimethylpentanediol-1,3-diisobutyrate is subject to the follow

Environmental List

DSL Domestic Substance List-Canada
TSCA Toxic Subst. Cont. Act -listed

Component Water is subject to the following

Environmental List

DSL Domestic Substance List-Canada
TSCA Toxic Subst. Cont. Act -listed

Component Methyl ethyl ketone is subject to the following

Environmental List

CAA 112 Clean Air Act Sect. 112
CERCLA CERCLA Hazardous Substances
DSL Domestic Substance List-Canada
MA. LIST Massachusetts Substance List
NJ R-T-K New Jersey R-T-K Hazard. Sub.
PA. LIST Penn. Hazardous Substance List
SARA 302 SARA Title III, Section 302
SARA 313 SARA Title III, Section 313
TSCA Toxic Subst. Cont. Act -listed

OTHER REGULATORY INFORMATION

No other regulatory information is available on this product.

WHMIS HAZARD CLASS
B-3,C,E,F

HAZARD RATING SOURCE
HMIS

HEALTH
3

REACTIVITY
2

FLAMMABILITY
2

OTHER

SECTION 16. OTHER INFORMATION

OTHER INFORMATION

CADOX is a registered trademark of Akzo Nobel Chemicals Inc.

CREATED BY

Product Safety 914 674-5000

FIBERGLASS MATT

JUN-12-97 16:26 FROM OWENS CORNING

ID: 1800 727 1217

PAGE



O/C 357D-AA-207 PPG HIBON 6100

MATERIAL SAFETY DATA SHEET

Section 1: Product and Company Information

Product Name(s): Cargable Fiber, Chopped Strand, Complex Reinforcements (Agimat, Aginap, BI-Ply Mat), Cordage, Flakeglas Milled Fiber, Landglas Roving, Lot Glass, Mat or Veil Products, Milled Fiber, Roadglas Woven Roving, Roving, S2 Glass Fibers, Type-30 Roving, Waste Glass, Wax Bonded Strand, Wet Chop, Woven Roving, Yarn.

Manufacturer: Owens Corning, One Owens Corning Parkway, World Headquarters, Attn. Product Stewardship, Toledo, OH, 43659, Telephone: 1-419-248-8234 (8am-5pm ET weekdays).

Emergency Contacts:

Emergencies ONLY (after 5pm ET and weekends): 1-419-248-5330,
CHEMTREC (24 hours everyday): 1-800-424-9300,
CANUTEC (Canada- 24 hours everyday): 1-613-996-6666.

Health and Technical Contacts:

Health Issues Information (8am-5pm ET): 1-419-248-8234,
Technical Product Information (8am-5pm ET): 1-419-248-8335.

Section 2: Composition and Ingredient Information

<u>Common Name</u>	<u>Chemical Name</u>	<u>CAS No.</u>	<u>Wt. %</u>
Non-Hazardous Ingredients			
Fiber Glass Continuous Filament (non respirable)	Fibrous Glass	65997-17-3	98-100
Size	Size	mixture	0-2

Note: See Section 8 of MSDS for exposure limit data for these ingredients.



MATERIAL SAFETY DATA SHEET

Section 3: Hazards Identification

Appearance and Odor: White/off-white colored solid with no odor.

Emergency Overview

No unusual conditions are expected from this product.

Primary Route(s) of Exposure: inhalation, skin, eye

Potential Health Effects:

ACUTE (short term): Fiber glass continuous filament is a mechanical irritant. Breathing dusts and fibers may cause short term irritation of the mouth, nose and throat. Skin contact with dust and fibers may cause itching and short term irritation. Eye contact with dust and fibers may cause short term mechanical irritation. Ingestion may cause short term mechanical irritation of the stomach and intestines. See Section 8 for exposure controls.

CHRONIC (long term): There is no known health effects connected with long term use or contact with this product. See Section 11 of MSDS for more toxicological data.

Medical Conditions Aggravated by Exposure: Long term breathing or skin conditions that are aggravated by mechanical irritants may be at a higher risk for worsening from use or contact with this product.



MATERIAL SAFETY DATA SHEET

Section 4: First Aid Measures

Inhalation: Move person to fresh air. Seek medical attention if irritation persists.

Eye Contact: Flush eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid more irritation, do not rub or scratch affected areas. Rubbing or scratching may force fibers into skin. Seek medical attention if irritation persists.

Ingestion: Ingestion of this material is unlikely. If it does occur, watch the person for several days to make sure that intestinal blockage does not occur.

Section 5: Fire Fighting Measures

Flash Point and Method: None

Flammability Limits (%): None.

Auto Ignition Temperature: Not Applicable.

Extinguishing Media: Water, foam, CO₂ or dry chemical.

Unusual Fire and Explosion Hazards: None known.

Fire Fighting Instructions: Use self contained breathing apparatus (SCBA) in a sustained fire.

Hazardous Combustion Products: Primary combustion products are carbon monoxide, carbon dioxide and water. Other undetermined compounds could be released in small quantities.



MATERIAL SAFETY DATA SHEET

Section 6: Accidental Release Measures

Releases of this product to the land, water and air may require reporting to federal, state or local authorities.

Land Spill: Scoop up material and put into suitable container for disposal as a non-hazardous waste.

Water Spill: This material will sink and disperse along the bottom of waterways and ponds. It can not easily be removed after it is waterborne; however, the material is non-hazardous in water.

Air Release: This material will settle out of the air. If concentrated on land it can then be scooped up for disposal as a non-hazardous waste.

Section 7: Handling and Storage

Storage Temperature: Not applicable.

Storage Pressure: Not applicable.

General: No special storage or handling procedures are required for this material.

Section 8: Exposure Controls and Personal Protection

<u>Ingredient</u>	<u>OSHA PEL</u> 8-hr TWA	<u>ACGIH TLV</u> 8-hr TWA
Fiber Glass	5 mg/m ³	5 mg/m ³
Continuous	(respirable dust)	1 fiber/cc
Filament	15 mg/m ³	
	(total dust)	
	1 fiber/cc	
	(proposed)	
Size	None Established	None Established



MATERIAL SAFETY DATA SHEET

Ventilation: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits.

Personal Protection:

Respiratory Protection: A properly fitted NIOSH/MSHA approved disposable dust respirator such as the 3M model 8210 (formerly 8710) or model 9900 (in high humidity environments) or equivalent should be used when: high dust levels are encountered; the level of glass fibers in the air exceeds the

OSHA permissible limits; or if irritation occurs. Use respiratory protection in accordance with your company's respiratory protection program, local regulations and OSHA regulations under 29 CFR 1910.134.

Skin Protection: Loose fitting long sleeved shirt that covers to the base of the neck, long pants and gloves. Skin irritation is known to occur chiefly at pressure points such as around neck, wrist, waist and between fingers.

Eye Protection: Safety glasses, goggles or face shield.

Work and Hygienic Practices: Handle using good industrial hygiene and safety practices. Avoid unnecessary contact with dusts and fibers by using good local exhaust ventilation. Remove material from the skin and eyes after contact. Remove material from clothing using vacuum equipment (never use compressed air and always wash work clothes separately from other clothing. Wipe out the washer or sink to prevent loose glass fibers from getting on other clothing). Keep the work area clean of dusts and fibers made during fabrication by using vacuum equipment to clean up dusts and fibers (avoid dry sweeping or using compressed air as these techniques re-suspend dusts and fibers into the air.) Have access to safety showers and eye wash stations.



MATERIAL SAFETY DATA SHEET

Section 9: Physical and Chemical Properties

Vapor Pressure (mm Hg @ 20°C): Not Applicable

Vapor Density (Air=1): Not Applicable

Specific Gravity (Water=1): 2.60

Boiling Point: Not Applicable

Solubility in Water: Insoluble

Viscosity: Not Applicable

pH: Not Applicable

Physical State: Solid

Appearance: Solid

Freezing Point: Not Applicable

Odor Type: None

Evaporation Rate (n-Butyl Acetate=1): Not Applicable

Section 10: Stability and Reactivity

General: Stable

Incompatible Materials and Conditions to Avoid: None

Hazardous Decomposition Products: Sizings or binders may decompose in a fire.
See Section 5 of MSDS for combustion products statement.

Hazardous Polymerization: Will not occur.



MATERIAL SAFETY DATA SHEET

Section 11: Toxicological Information

CARCINOGENICITY: The table below indicates whether or not each agency has listed each ingredients as a carcinogen:

<u>Ingredient</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
Fiber Glass Continuous Filament	No	No	No	No
Size	No	No	No	No
	<u>LD₅₀ Oral</u> (g/kg)	<u>LD₅₀ Dermal</u> (g/kg)	<u>LC₅₀ Inhalation</u> (ppm, 8 hrs.)	
Fiber Glass Continuous Filament	Not Available	Not Available	Not Available	Not Available
Size	Not Available	Not Available	Not Available	Not Available

Fiber Glass Continuous Filament: The International Agency for Research on Cancer (IARC) in June, 1987, categorized fiber glass continuous filament as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify fiber glass continuous filament as a possible, probable, or confirmed cancer causing material.

Section 12: Ecological Information

This material is not expected to cause harm to animals, plants or fish.



MATERIAL SAFETY DATA SHEET

Section 13: Disposal Considerations

RCRA Hazard Class: Non-hazardous.

Section 14: Transport Information

DOT Shipping Names: Not regulated

Hazard Class or Division: None

Secondary: None

Identification No.: None

Packing Group: None

Label(s) required (if not excepted): None

Special Provisions: None

Packaging Exceptions: None

Non-bulk Packaging: None

Bulk packaging: None

EPA Hazardous Substances: None

RQ: None

Quantity Limitations: Passenger Aircraft: None
Cargo Aircraft: None

Marine Pollutants: None

Freight Description: None

Hazardous Material Shipping Description: None



MATERIAL SAFETY DATA SHEET

Transportation of Dangerous Goods - Canada

Proper Shipping Name: Not Regulated

TDG Hazard Classification: (Primary): None (Secondary): None

IMO Classification: None

ICAO/IATA Classification: None

Product Identification Number: None

Packing Group: None

Control Temperature: None

Emergency Temperature: None

Schedule XII Quantity Restriction: None

Reportable Quantity for US Shipments: None

IATA Packing Instructions:
Passenger/Cargo: None
Cargo Only: None
Limited Quantity: None

Maximum Net Quantity per Package:
Passenger/Cargo: None
Cargo Only: None
Limited Quantity: None

Special Provisions: None



MATERIAL SAFETY DATA SHEET

Section 15: Regulatory Information

TSCA Status: Each ingredient is on the inventory.

NSR Status (Canada): Each ingredient is on the DSL.

SARA Title III: Hazard Categories:

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactivity Hazard:	No

Reportable Ingredients:

Sec. 302/304:	None
Sec. 313:	None

California Proposition 65: No ingredient is listed.

Clean Air Act: No ingredient is listed.

WHMIS (Canada): Status: Not Controlled
WHMIS Classification(s): None

Section 16: Other Information

<u>HMIS and NFPA Hazard Rating:</u>	<u>Category</u>	<u>HMIS</u>	<u>NFPA</u>
	Acute Health	1	1
	Flammability	0	0
	Reactivity	0	0

NFPA Unusual Hazards: None.

HMIS Personal Protection: To be supplied by user depending upon use.

Revision Summary: This MSDS replaces the June 7, 1994 MSDS. Product names have been revised in section 1, and exposure limits in section 8. Read this information carefully.

POLYESTER RESIN SOLUTION IN STYRENE

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AOC

Material Safety Data Sheet

MSDS No. 0359V2

WHMIS (Pictograms) 	NFPA (USA) 	HMIS (USA) 	Protective Clothing 
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Section I: Chemical Product and Company Identification			
Product Name/Trade Name	Polyester Resin Solution in Styrene (MSDS Code: Type E)	CI#	Not applicable.
Customer Product Name	C440-CAA-12	CAS#	Mixture
Supplier	AOC Canada Inc. 38 Royal Road Guelph, Ontario Canada N1H 1G3 Phone Number: (519) 821-5180	DSL	On the DSL list.
Synonym	Not available.	TSCA	On the TSCA list.
Chemical Name	Not applicable.	In case of Emergency CANUTEC (Canada 24 hours Everyday) (613) 996-8666 CHEMTREC (US 24 hours Everyday) (800) 424-9300 Manufacturer (8am to 5pm weekdays) (901) 854-2800	
Chemical Family	(Aromatic.)		
Chemical Formula	Not applicable.		
Manufacturer	AOC Canada Inc. 38 Royal Road Guelph, Ontario Canada N1H 1G3 Phone Number: (519) 821-5180	Material Uses	Industrial applications: Used in the manufacture of fiber reinforced plastic parts.

Section II: Composition and Information on Ingredients		
Name	CAS #	% by Weight
Styrene	100-42-5	40-60

Section III: Hazards Identification	
Potential Acute Health Effects	Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. May cause skin sensitization. May cause eye irritation.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC [Styrene]. An increased incidence of lung tumors was observed in mice from a recent inhalation study. The relevance of this finding is uncertain since data from other long-term animal studies and from epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic. Lung effects have been observed in the mouse following repeated exposure. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

Continued on Next Page

Polyester Resin Solution in Styrene (MSDS Code: Type E)		MSDS No. 0359V2 Page: 2
Section IV: First Aid Measures		
Eye Contact	MAY CAUSE EYE IRRITATION. Check for and remove any contact lenses. DO NOT use an eye ointment. Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.	
Skin Contact	Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.	
Hazardous Skin Contact	No additional information.	
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.	
Hazardous Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.	
Ingestion	DO NOT induce vomiting. If ingested, seek medical advice immediately and show the container or the label. Prevent aspiration.	
Hazardous Ingestion	No additional information.	

Section V: Fire and Explosion Data	
The Product is:	Flammable.
Auto-Ignition Temperature	490°C (914°F) (Styrene).
Flash Points	CLOSED CUP: 31°C (87.8°F)
Flammable Limits	LOWER: 1.1% UPPER: 6.1% (Styrene)
Products of Combustion	Not available
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemicals, CO ₂ , alcohol foam or water spray. LARGE FIRE: Use water spray or fog. Never direct a water jet in the container in order to prevent any splashing of the product which could cause spreading of the fire. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Section VI: Accidental Release Measures	
Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill	Flammable liquid, insoluble or very slightly soluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal.

Continued on Next Page

Polyester Resin Solution in Styrene (MSDS Code: Type E)

MSDS No. 0359V2 Page: 3

Section VII. Handling and Storage

Precautions	Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.
Storage	Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material.

Section VIII. Exposure Controls/Personal Protection

Exposure Limits	Styrene	TLV: 20 (ppm) from ACGIH TWA: 50 (ppm) / 8 hours from OSHA TLV: 85 (mg/m ³) from ACGIH.
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.	
Personal Protection	Splash goggles. Lab coat. Organic vapor respirator. Gloves. Wear appropriate respirator when ventilation is inadequate. Be sure to use a MSHA/NIOSH approved respirator or equivalent.	
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product.	

Section IX. Physical and Chemical Properties

Physical State and Appearance	Liquid. (Viscous liquid.)	Odor	Aromatic.
Molecular Weight (g/mol)	1000 - 12000	Taste	Not available.
pH (1% soln/water)	~ 7.0	Color	Clear to Amber.
Boiling Point	>35°C (96.8°F)		
Melting Point	Not applicable.		
Critical Temperature	Not available.		
Specific Gravity	1.1 (Water = 1)		
Vapor Pressure	4.6 mm of Hg (@ 20°C) (Styrene)		
Vapor Density	3.59 (Air=1) (Styrene)		
Volatility	Not available.		
Odor Threshold	0.14 ppm (Styrene)		
Evaporation rate	Not available.		
Viscosity	Varies		
Water/Oil Dist. Coeff.	Not available.		
Dispersion Properties	Is not dispersed in cold water, hot water.		
Solubility	Slightly soluble in cold water, hot water (0.1 to 1.0 %)		

Continued on Next Page

Polyester Resin Solution in Styrene (MSDS Code: Type E)	MSDS No. 0359V2 Page: 4
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Section X: Stability and Reactivity Data	
Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	>77 °C
Incompatibility with various substances	Polymerizes in the presence of organic peroxides.
Corrosivity	No specific information is available in our database regarding the corrosivity of this product in presence of various materials.
Special Remarks on Reactivity	Polymerizes in the presence of organic peroxides.
Special Remarks on Corrosivity	No additional remark.

Section XI: Toxicological Information	
Routes of Entry	Ingestion.
Toxicity to Animals	Styrene ORAL (LD50): Acute: 2650 mg/kg [Rat]
Special Remarks on Toxicity to Animals	Lung effects have been observed in the mouse following repeated exposure.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on Other Toxic Effects on Humans	Styrene: Styrene may produce both acute and chronic effects. Inhalation may cause upper respiratory tract irritation and central nervous system effects including headache, nausea, vomiting and loss of coordination. Direct contact may produce irritation to eyes and skin. Styrene is a possible human carcinogen (IARC Group 2B). Prolonged eye exposure may cause irritation to the lining of the eyes. Prolonged exposure may result in nausea, loss of appetite, general weakness, changes in blood chemistry, and peripheral and central nervous system effects. Prolonged skin exposure may result in dermatitis.

Section XII: Ecological Information	
Ecotoxicity	Not available.
BOD5 and COD	Not available.

Section XIII: Disposal Considerations	
Waste Disposal	Recycle, if possible. Consult your local or regional authorities.

Continued on Next Page

Polyester Resin Solution in Styrene (MSDS Code: Type E)		MSDS No. 0359V2 Page: 5
Section XIV. Transport Information		
Proper Shipping Name (TDG)	Resin Solution	
TDG Classification	TDG CLASS 3: Flammable liquid.	
PIN	UN1866	
Packing Group	III	
Special Provisions for Transport	109 The consignor must determine legal limit. (Styrene)	
TDG (Pictograms)		
Proper Shipping Name (DOT)	Resin Solution	
DOT Classification	DOT CLASS 3: Flammable liquid.	
DOT Identification Number	UN1866	
DOT Packing Group	III	
Hazardous Substances Reportable Quantity (kg)	Styrene 454.5	
Special Provisions for transport	No additional remark.	
DOT (Pictograms)		
Other Regulations	IMDG Classification: Resin solution (styrene), 3.3, UN1866, PG III, Marine Pollutant, Flash point 31 °C, EMS No. 3-05, MFAG Table 310 IATA Classification: Resin solution, 3, UN1866, PG III, Pkg Inst passenger 309; cargo 310	

Section XV. Other Regulatory Information and Pictograms

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
On the DSL list.
On the TSCA list.

Florida Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

Styrene.

Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

Styrene.

Continued on Next Page

Polyester Resin Solution in Styrene (MSDS Code: Type E)

MSDS No. 0359V2 Page: 6

Minnesota Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

Styrene.

New Jersey Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

Styrene.

Pennsylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products.
Components present in this product at a level which could require reporting under the statute are:

Styrene.

This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute:

NONE

Other Classifications	WHMIS (Canada)	WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).
	HCS (U.S.A.)	HCS CLASS: Flammable liquid having a flash point lower than 37.8°C (100°F). HCS CLASS: Toxic.
	DSCL (EEC)	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture.

Section XVI. Other Information:

References Transportation of Dangerous Goods Act - "Regulations respecting the handling, offering for transport and transporting of dangerous goods." Extract from the Canada Gazette Part II
- Canada Gazette Part II, Hazardous Products Act "Ingredient Disclosure List".
- Manufacturer's Material Safety Data Sheet.
29 CFR 1910.10000, Z - Tables
ACGIH 1995-1996 TLVs for Chemical Substances and Physical Agents
Registry of Toxic Effects of Chemical Substances (RTECS)
California Code of Regulation Proposition 65

Other Special Considerations No additional remark

Validated by Lynn Campbell on 7/1/97.

Verified by Mark Roehier.

Printed 10/29/98.

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