



GARLAND MATERIAL SAFETY DATA SHEET

MSDS Status: Current
Product Name: PERMA-TOP PATCH KIT
Product Code: 1803-A
MSDS No.:

Product Status: Active
Revision Date: 05/03/2008
Supersedes Date: 06/06/2001

SECTION I - CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Chemical Name: MIXTURE
CAS No.: NOT APPLICABLE
Product Description: THREE COMPONENT 100% SOLIDS EPOXY MORTOR
Hazard Classification: HEALTH - 1* FLAMMABILITY - 1 REACTIVITY - 0
Manufacturer/Supplier: GARLAND CANADA
1296 Martin Grove Road
Toronto, Ontario M9W 4X3
PH: (614) 747-7995 FAX: (614) 747-1980
Internet Address: <http://www.garlandind.com>

24 HR EMERGENCY ASSISTANCE: 1-800-762-8225

SECTION II - HAZARDOUS INGREDIENTS/COMPOSITION

	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE		WEIGHT PERCENT
		OSHA PEL	ACGIH TLVR	OSHA STEL	MM Hg @ TEMP		
MODIFIED DIGLYCIDYL ETHER OF BISPHENOL A ALKYL GLYCIDAL ETHER	25068-38-6	NONE	NONE	NONE	1.0	356 ^o F	
FORMALDAHYDE POLYMER WITH TOLUENE	68609-97-2	NONE	NONE	NONE	N/A		
	25155-81-1	NONE	NONE	NONE	N/A		
*TOLUENE	108-88-3	100 ppm	100 PPM	NONE	1.0	-26 ^o F	<0.5%
BENZYL ALCOHOL	100-51-6	NONE	NONE	NONE	1.0	136 ^o F	
*GLYCOL ETHER 2-BUTOXYETHANOL	111-76-2	25 PPM	25 PPM	NONE	10.0	97 ^o F	<0.5%
STODDARD SOLVENT	8052-41-3	100 PPM	100 PPM	NONE	2.0	68 ^o F	
1,3,5-TRIMETHYLBENZENE	108-67-8	NONE	NONE	NONE	1.0	48 ^o F	
*CUMENE	98-82-8	50PPM	50PPM	100PPM	1.0	37 ^o F	<0.5%
*XYLENE	1330-20-7	100PPM	100PPM	150PPM	5.1	68 ^o F	<0.5%
*ISOBUTYL ALCOHOL	78-83-1	50PPM	50PPM	NONE	1.0	16 ^o F	<0.5%

*Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

N/A = Not Applicable

SECTION III - HAZARDS IDENTIFICATION

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: NO GUIDE CONTROL KNOWN, HOWEVER, EXPOSURE TO HEATED VAPORS CAN CAUSE IRRITATION TO NOSE, THROAT OR MUCOUS MEMBRANES.

SKIN CONTACT AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: SKIN: MAY CAUSE IRRITATION OR ALLERGIC SKIN RESPONSE. EYES: MAY CAUSE IRRITATION BUT NO CORNEAL INJURY IS LIKELY.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: NOT LIKELY TO BE ABSORBED IN TOXIC AMOUNTS.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: THIS MATERIAL HAS A PROBABLE LOW ACUTE ORAL TOXICITY.

HEALTH HAZARDS (ACUTE AND CHRONIC): EPOXY RESINS CAN CAUSE SENSITIZATION BY EXPOSURE THROUGH CONTACT OR HIGH CONCENTRATIONS OF VAPOR. EYES: INJURY IS UNLIKELY BUT STAIN FOR EVIDENCE OF CORNEAL INJURY.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO
NO CONSTITUENTS OF THIS PRODUCT ARE REGULATED AS CARCINOGENS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: RESPIRATORY CONDITIONS OR OTHER ALLERGIC RESPONSE.

SECTION IV - FIRST AID PROCEDURES

INHALATION OVEREXPOSURE: REMOVE TO FRESH AIR AREA AND ADMINISTER OXYGEN IS NECESSARY.

EYE CONTACT: IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.

SKIN CONTACT: SKIN CONTACT WILL NORMALLY CAUSE NO MORE THAN IRRITATION BUT WASH WITH SOAP AND WATER AND REMOVE CONTAMINATED CLOTHING PROMPTLY.

INGESTION: LOW TOXICITY, INDUCE VOMITING ONLY IF LARGE AMOUNTS OF MATERIAL ARE INGESTED, OTHERWISE DO NOT INDUCE VOMITING. IN EITHER CASE IMMEDIATELY CONSULT A PHYSICIAN.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 200+°F METHOD USED: SETA FLASH
FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO₂, DRY CHEMICAL, WATER FOG

SPECIAL FIREFIGHTING PROCEDURES: DO NOT ENTER CONFINED FIRE AREA WITHOUT FULL BUNKER GEAR INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NO UNUSUAL FIRE HAZARDS KNOWN.

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: WEAR APPROPRIATE RESPIRATOR AND PROTECTIVE CLOTHING. SHUT OFF THE SOURCE AT THE LEAK. REMOVE EXCESS WITH VACUUM TRUCK AND TAKE UP THE REMAINDER WITH CLAY OR OTHER ABSORBENT AND PLACE IN DISPOSAL CONTAINERS. FLUSH AREA WITH WATER TO REMOVE RESIDUE.

SECTION VII - SAFE HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: STORE IN A COOL PLACE. SEAL ALL PARTIALLY USED CONTAINERS. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES. MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS, THEREFORE, READ THE MSDS'S OF ALL COMPONENTS PRIOR TO USING MATERIAL. PROPERLY LABEL ALL CONTAINERS.

OTHER PRECAUTIONS: AVOID ALL SKIN CONTACT. AVOID BREATHING VAPORS GENERATED FROM THE MATERIAL. OBSERVE CONDITIONS OF GOOD GENERAL HYGIENE AND SAFE WORKING

PRACTICES. CONTAMINATED LEATHER ARTICLES CANNOT BE CLEANED AND MUST BE DISCARDED IF CONTAMINATED WITH THIS PRODUCT. WASH ALL CONTAMINATED CLOTHING PRIOR TO THE REUSE THEREOF.

SECTION VIII - EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION: USE A NIOSH APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO VAPOR IN ACCORDANCE WITH 29 CFR 1910.134. GENERAL EXHAUST IS USUALLY SUFFICIENT IN LIEU OF NIOSH RESPIRATOR.

VENTILATION: GENERAL EXHAUST IS USUALLY SUFFICIENT TO CONTROL VAPORS AND EXPOSURE HAZARDS.

PROTECTIVE GLOVES: IMPERVIOUS GLOVES, NEOPRENE OR RUBBER.

EYE PROTECTION: SPLASH GOGGLES OR GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE EQUIPMENT: WEAR BODY COVERING CLOTHING AND OTHER COVERING AS NECESSARY SUCH AS AN APRON AND APPROPRIATE FOOTWEAR AND AVOID CONTACT WITH THE MATERIAL.

WORK/HYGIENIC PRACTICES: OBSERVE GENERAL GOOD HYGIENIC PRACTICES.

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 200^oF - 401^oF

SPECIFIC GRAVITY (H₂O=1): 1.1

VAPOR DENSITY: N/A

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: NEGLIGIBLE

APPEARANCE AND ODOR: LOW VISCOSITY LIQUID IN BOTH CLEAR AND PIGMENTED

SECTION X - STABILITY AND REACTIVITY DATA

STABILITY: STABLE.

CONDITIONS TO AVOID: AVOID EXCESSIVE HEAT OR OPEN FLAMES.

INCOMPATIBILITY (MATERIALS TO AVOID): CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS AND STRONG LEWIS ACIDS OR MINERAL ACIDS.

HAZARDOUS DECOMPOSITION PRODUCTS: CO₂, ALDEHYDES, ACIDS. REACTION WITH SOME CURING AGENTS CAN GENERATE LARGE AMOUNTS OF HEAT.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION XI - TOXICOLOGICAL INFORMATION

No information available.

SECTION XII - ECOLOGICAL INFORMATION

No data available.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of according to applicable Federal, State, County, and Local requirements.

SECTION XIV - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:	DOT-U.S./MOT-CANADA NON REGULATED MATERIAL (PAINT AND RELATED MATERIAL)
HAZARD CLASS:	NOT APPLICABLE
IDENTIFICATION NO:	NOT APPLICABLE
PACKAGING GROUP:	NOT APPLICABLE

SECTION XV - REGULATORY INFORMATION

WHMIS: This material contains the following ingredient(s) at, or above the minimum concentration specified on the WHMIS Ingredient Disclosure List under the Hazardous Products Act of Canada:

BENZYL ALCOHOL	CAS No.	100-51-6
TOLUENE	CAS No.	108-88-3
1,3,5-TRIMETHYLBENZENE	CAS No.	108-67-8
STODDARD SOLVENT	CAS No.	8052-41-3
GLYCOL ETHER 2-BUTOXYETHANOL	CAS No.	111-76-2

SARA 313: This product contains the following material(s) subject to the reporting requirements under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372:

TOLUENE	CAS No.	108-88-3
XYLENE	CAS No.	1330-20-7
GLYCOL ETHER 2-BUTOXYETHANOL	CAS No.	111-76-2
CUMENE	CAS No.	98-82-8
ISOBUTYL ALCOHOL	CAS No.	78-83-1

CA PROP 65: This product contains the following chemical(s), known to the State of California to cause cancer or reproductive toxicity:

TOLUENE	CAS No.	108-88-3, <0.5%
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VOC STATUS: ZERO POUNDS PER GALLON

SECTION XVI - ADDITIONAL INFORMATION

New MSDS Format

Disclaimer

The information contained in this Material Safety Data Sheet has been prepared in accordance with the OSHA Hazard communication Standard CFR 1910.1200. This information relates specifically to the product designated and may not be valid for the product when used in combination with any other materials or products or in a particular process. The information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness, whether originating within the company or not. The user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with applicable federal, state or local hazard communications requirements. We do not accept responsibility for any loss or damage which may occur from the use of this information.

Prepared By: Tom Bauer
Modified By:

Date: 05/03/2008

End of MSDS Document



GARLAND MATERIAL SAFETY DATA SHEET

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Product Code: 1803-B
MSDS No.:

Product Status: Active
Revision Date: 05/03/2008
Supersedes Date: 06/06/2001

SECTION I - CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Chemical Name: MIXTURE
CAS No.: NOT APPLICABLE
Product Description: THREE COMPONENT 100% SOLIDS EPOXY MORTAR
Hazard Classification: HEALTH - 2* FLAMMABILITY - 1 REACTIVITY - 0
Manufacturer/Supplier: GARLAND CANADA
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Toronto, Ontario M9W 4X3
PH: (614) 747-7995 FAX: (614) 747-1980
Internet Address: <http://www.garlandind.com>

24 HR EMERGENCY ASSISTANCE: 1-800-762-8225

SECTION II - HAZARDOUS INGREDIENTS/COMPOSITION

	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE MM Hg @ TEMP	WEIGHT PERCENT
		OSHA PEL	ACGIH TLVR	OSHA STEL		
*PHENOL	108-95-2	5 PPM	5 PPM	10 PPM	1.0 104 ^o F	15
M-XYLENE DIAMINE	1477-55-0	NONE	.1mg/m3	NONE	N/A	
BENZENE-1,3-DIMETHANE- AMINE/PHENOL/ FORMALDAHYDE	57214-10-5	NONE	NONE	NONE	N/A	

*Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

N/A = Not Applicable

SECTION III - HAZARDS IDENTIFICATION

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: HIGH CONCENTRATIONS OF VAPOR CAN CAUSE IRRITATION TO THE RESPIRATORY TRACT, NAUSEA AND DIZZINESS.

SKIN CONTACT AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: WILL CAUSE BURNS TO THE SKIN AND EYES. HIGH VAPOR CONCENTRATIONS CAN CAUSE SEVERE IRRITATION TO THE EYES.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: NONE KNOWN.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: LIQUID CAN CAUSE SEVERE DAMAGE TO MUCOUS MEMBRANES IF SWALLOWED.

HEALTH HAZARDS (ACUTE AND CHRONIC): PROLONGED OR REPEATED EXPOSURE OF THIS PRODUCT MAY CAUSE ASTHMA AND SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO
NO CONSTITUENTS OF THIS PRODUCT ARE REGULATED AS CARCINOGENS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: RESPIRATORY CONDITIONS OR
OTHER ALLERGIC AILMENTS.

SECTION IV - FIRST AID PROCEDURES

INHALATION OVEREXPOSURE: REMOVE TO FRESH AIR IF EFFECTS PERSIST AND ADMINISTER
OXYGEN IS NECESSARY.

EYE CONTACT: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15
MINUTES WHILE LIFTING UPPER AND LOWER LIDS. GET MEDICAL
ASSISTANCE.

SKIN CONTACT: FLUSH SKIN WITH WATER FOR AT LEAST 15 AND REMOVE ALL CONTAMINATED
CLOTHING IMMEDIATELY. GET MEDICAL ATTENTION IF REDDENING OR
SWELLING OCCURS.

INGESTION: DO NOT INDUCE VOMITING. DILUTE BY GIVING WATER OR MILK TO DRINK IF
VICTIM IS CONSCIOUS. GET MEDICAL ATTENTION IMMEDIATELY.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 200+°F METHOD USED: SETA FLASH
FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO₂, WATER FOG

SPECIAL FIREFIGHTING PROCEDURES: TOXIC FUMES WILL BE EVOLVED WHEN THIS MATERIAL
IS INVOLVED IN A FIRE. A SELF CONTAINED BREATHING APPARATUS SHOULD BE AVAILABLE
FOR FIRE FIGHTERS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: AVOID CONTACT WITH
MATERIAL. WEAR THE APPROPRIATE SAFETY EQUIPMENT. STOP SPILL AT SOURCE, DYKE
AREA TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK, TAKE UP REMAINDER WITH
CLAY OR OTHER ABSORBENT AND PLACE IN DISPOSAL CONTAINERS.

SECTION VII - SAFE HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: AVOID ALL SKIN CONTACT. AVOID
BREATHING VAPORS. RESEAL PARTIALLY USED CONTAINERS. PROPERLY LABEL ALL
CONTAINERS. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING
TOILET FACILITIES. OBSERVE CONDITIONS OF GOOD INDUSTRIAL HYGIENE AND SAFE
WORKING PRACTICES.

OTHER PRECAUTIONS: MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS,
THEREFORE, READ THE MSDS OF ALL COMPONENTS TO BECOME FAMILIAR WITH ALL HAZARDS
PRIOR TO USING THIS PRODUCT.

SECTION VIII - EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION: NIOSH APPROVED RESPIRATOR PROTECTION REQUIRED IN THE
ABSENCE OF PROPER ENVIRONMENTAL CONTROLS. FOR EMERGENCIES A SELF-CONTAINED
BREATHING APPARATUS OR FULL FACE SHIELD RESPIRATOR IS RECOMMENDED.

VENTILATION: AVOID BREATHING VAPORS. VENTILATION MUST BE SUFFICIENT TO CONTROL
VAPORS.

PROTECTIVE GLOVES: IMPERVIOUS GLOVES, NEOPRENE OR RUBBER.

EYE PROTECTION: SPLASH PROOF GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE EQUIPMENT: CLEAN BODY COVERING CLOTHING AS WELL AS APRON
FOOTWEAR OR OTHER EQUIPMENT SHOULD BE USED AS DEEMED NECESSARY TO AVOID CONTACT
WITH THE MATERIAL.

WORK/HYGIENIC PRACTICES: OBSERVE GENERAL GOOD HYGIENIC PRACTICES.

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: N/A
VAPOR DENSITY: N/A
SOLUBILITY IN WATER: NEGLIGIBLE
APPEARANCE AND ODOR: AMBER CLEAR LIQUID WITH AMINE ODOR

SPECIFIC GRAVITY (H₂O=1): 1.1
EVAPORATION RATE: N/A

SECTION X - STABILITY AND REACTIVITY DATA

STABILITY: STABLE.

CONDITIONS TO AVOID: AVOID CONTACT WITH OPEN FLAMES AND ALL SOURCES OF IGNITION
AND SPARKS.

INCOMPATIBILITY (MATERIALS TO AVOID): AVOID CONTACT WITH STRONG OXIDIZING
AGENTS, MINERAL ACIDS AND EPOXY RESINS IN UNCONTROLLED AMOUNTS.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, NOX

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION XI - TOXICOLOGICAL INFORMATION

No information available.

SECTION XII - ECOLOGICAL INFORMATION

No data available.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of according to applicable Federal, State, County, and Local requirements.

SECTION XIV - TRANSPORTATION INFORMATION

DOT-U.S./MOT-CANADA
PROPER SHIPPING NAME: CORROSIVE LIQUID N.O.S. (CONTAINS PHENOL SOLUTIONS,
M-XYLENE DIAMINE)
HAZARD CLASS: 8
IDENTIFICATION NO: UN1760
PACKAGING GROUP: III

SECTION XV - REGULATORY INFORMATION

WHMIS: This material contains the following ingredient(s) at, or above the
minimum concentration specified on the WHMIS Ingredient Disclosure List under
the Hazardous Products Act of Canada:

PHENOL CAS No. 108-95-2
M-XYLENE DIAMINE CAS No. 1477-55-0

SARA 313: This product contains the following material(s) subject to the
reporting requirements under Section 313 of Title III of the Superfund
Amendments and Reauthorization Act of 1986 and 40 CFR 372:

PHENOL CAS No. 108-95-2

VOC STATUS: ZERO POUNDS PER GALLON

SECTION XVI - ADDITIONAL INFORMATION

None

Disclaimer

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Prepared By: Tom Bauer
Modified By:

Date: 05/03/2008

End of MSDS Document



GARLAND MATERIAL SAFETY DATA SHEET

MSDS Status: Current
Product Name: PERMA-TOP PATCH KIT
Product Code: 1803-C
MSDS No.:

Product Status: Active
Revision Date: 05/03/2008
Supersedes Date: 06/06/2001

SECTION I - CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Chemical Name: MIXTURE
CAS No.: NOT APPLICABLE
Product Description: THREE COMPONENT 100% SOLIDS EPOXY MORTAR
Hazard Classification: HEALTH - 2* FLAMMABILITY - 0 REACTIVITY - 0
Manufacturer/Supplier: GARLAND CANADA
1296 Martin Grove Road
Toronto, Ontario M9W 4X3
PH: (614) 6747-7995 FAX: (614) 747-1980
Internet Address: <http://www.garlandind.com>

24 HR EMERGENCY ASSISTANCE: 1-800-762-8225

SECTION II - HAZARDOUS INGREDIENTS/COMPOSITION

	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE MM Hg @ TEMP	WEIGHT PERCENT
		OSHA PEL	ACGIH TLVR	OSHA STEL		
SILICON DIOXIDE	14808-60-7	.1mg/m3	.1mg/m3	.1mg/m3	N/A	100

No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present

FOLLOW OSHA HAZARD COMMUNICATION RULE 29CFR SECTIONS 1910.1200, 1915.99, 1917.28, 1926.59, AND STATE AND LOCAL COMMUNITY RIGHT TO KNOW LAWS. WE RECOMMEND THAT SMOKING BE PROHIBITED IN AREAS WHERE RESPIRATORS MUST BE USED.

N/A = Not Applicable

SECTION III - HAZARDS IDENTIFICATION

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: PROLONGED EXPOSURE TO RESPIRABLE CRYSTALLINE QUARTZ MAY CAUSE DELAYED LUNG INJURY (SILICOSIS). ACUTE OR RAPIDLY DEVELOPING SILICOSIS MAY OCCUR IN A SHORT PERIOD OF TIME IN HEAVY EXPOSURE IN SOME APPLICATIONS SUCH AS SAND BLASTING.

SKIN CONTACT AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: MAY CAUSE REDDENING OF THE EYES OR EYE IRRITATION FROM AIRBORNE PARTICLES.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: NONE KNOWN.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: NONE KNOWN.

HEALTH HAZARDS (ACUTE AND CHRONIC): MAY CAUSE DELAYED SILICOSIS OR RAPID SILICOSIS IN SOME OCCUPATIONS SUCH AS SANDBLASTING. SILICOSIS IS A FORM OF A DISABLING PULMONARY FIBROSIS WHICH CAN BE PROGRESSIVE AND COULD LEAD TO DEATH. INHALATION MAY LEAD TO LUNG SCARRING AND MASSIVE FIBROSIS WHICH COULD BE ACCOMPANIED BY RIGHT HEART ENLARGEMENT, HEART FAILURE, OR PULMONARY FAILURE. SMOKING AGGRAVATES THE EFFECTS OF EXPOSURE.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? YES OSHA REGULATED? NO
IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISK CHEMICALS RISK TO HUMANS (VOLUME 42 1987 CONCLUDES THAT THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF CRYSTALLINE SILICA TO ANIMALS AND LIMITED EVIDENCE TO HUMANS; IARC CLASS 2A.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: PULMONARY CONDITIONS OR OTHER SIMILAR AILMENTS CAN BE AGGRAVATED BY EXPOSURE.

SECTION IV - FIRST AID PROCEDURES

INHALATION OVEREXPOSURE: REMOVE VICTIM TO FRESH AIR AREA AND ADMINISTER OXYGEN IS NECESSARY. CONSULT A PHYSICIAN IF CONDITIONS WARRANT.

EYE CONTACT: FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.

SKIN CONTACT: SKIN CONTACT WILL NORMALLY CAUSE NO HEALTH RISKS.

INGESTION: CONSULT A PHYSICIAN.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A METHOD USED: N/A
FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: OTHER

SPECIAL FIREFIGHTING PROCEDURES: CRYSTALLINE SILICA IS NEITHER A FIRE OR EXPLOSION HAZARD.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NO UNUSUAL FIRE HAZARDS KNOWN.

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: WEAR A RESPIRATOR AND USE DUSTLESS HANDLING EQUIPMENT TO CLEAN UP LARGE SPILLS. PLACE IN SUITABLE CONTAINERS FOR DISPOSAL. FLUSH AREA WITH WATER AFTER PICK-UP OF MATERIAL.

SECTION VII - SAFE HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: STORE IN A COOL DRY PLACE. PROPERLY LABEL ALL CONTAINERS AND RESEAL ALL PARTIALLY USED CONTAINERS. AVOID CREATING DUST WHEN WORKING WITH THIS MATERIAL.

OTHER PRECAUTIONS: AVOID BREATHING VAPORS GENERATED FROM THIS MATERIAL. OBSERVE CONDITIONS OF GOOD HYGIENE AND SAFE WORKING PRACTICES. PROVIDE TRAINING FOR YOUR EMPLOYEES RELATING TO OCCUPATIONAL EXPOSURE TO QUARTZ DUST. SEE ASTM STANDARD E1132-86 STANDARD PRACTICE FOR HEALTH REQUIREMENTS RELATING TO EXPOSURE TO QUARTZ DUST. IF BETTER THAN 500 X PEL USE A SELF CONTAINED BREATHING APPARATUS. IF SANDBLASTING USE ANY TYPE CE SUPPLIED AIR RESPIRATOR WITH FULL FACEPIECE OR HOOD.

SECTION VIII - EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION: NIOSH APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO QUARTZ DUST. PROVIDE SUFFICIENT EXHAUST TO KEEP LEVELS BELOW THE ACGIH PEL.

VENTILATION: USE EXHAUST SUFFICIENT TO MAINTAIN AIRBORNE PARTICULATES BELOW THE ACGIH PEL LIMITS ESTABLISHED.

PROTECTIVE GLOVES: N/A

EYE PROTECTION: SPLASH PROOF GOGGLES OR GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE EQUIPMENT: PROVIDE ANY EQUIPMENT NECESSARY TO PREVENT THE INHALATION OF QUARTZ DUST.

WORK/HYGIENIC PRACTICES: OBSERVE GENERAL GOOD HYGIENIC PRACTICES.

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: N/A

SPECIFIC GRAVITY (H₂O=1): 2.6

VAPOR DENSITY: N/A

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: INSOLUBLE IN WATER

APPEARANCE AND ODOR: WHITE OR TAN SAND GRANULAR CRUSHED OR GROUND - NO ODOR

SECTION X - STABILITY AND REACTIVITY DATA

STABILITY: STABLE.

CONDITIONS TO AVOID: CONTACT WITH POWERFUL OXIDIZING AGENTS SUCH AS FLUORINE, CHLORINE, TRIFLUORINE, MANGANESE, TRIOXIDE, OXYGEN TRIFLOURIDE.

INCOMPATIBILITY (MATERIALS TO AVOID): CAN REACT VICIOUSLY WITH STRONG OXIDIZING AGENTS - SEE CONDITIONS TO AVOID.

HAZARDOUS DECOMPOSITION PRODUCTS: SILICA WILL DISSOLVE IN HYDROCHLORIC ACID TO FORM A CORROSIVE GAS - SILICON TETRAFLUORINE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION XI - TOXICOLOGICAL INFORMATION

No information available.

SECTION XII - ECOLOGICAL INFORMATION

No data available.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of according to applicable Federal, State, County, and Local requirements.

SECTION XIV - TRANSPORTATION INFORMATION

	DOT-U.S./MOT-CANADA
PROPER SHIPPING NAME:	NOT REGULATED
HAZARD CLASS:	NOT REGULATED
IDENTIFICATION NO:	NOT REGULATED
PACKAGING GROUP:	NOT REGULATED

SECTION XV - REGULATORY INFORMATION

WHMIS: This material contains the following ingredient(s) at, or above the minimum concentration specified on the WHMIS Ingredient Disclosure List under the Hazardous Products Act of Canada:

SILICON DIOXIDE CAS No. 14808-60-7

SARA 313: This product contains the following material(s) subject to the reporting requirements under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372:

NONE

VOC STATUS: ZERO POUNDS PER GALLON

SECTION XVI - ADDITIONAL INFORMATION

None

Disclaimer

The information contained in this Material Safety Data Sheet has been prepared in accordance with the OSHA Hazard communication Standard CFR 1910.1200. This information relates specifically to the product designated and may not be valid for the product when used in combination with any other materials or products or in a particular process. The information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness, whether originating within the company or not. The user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with applicable federal, state or local hazard communications requirements. We do not accept responsibility for any loss or damage which may occur from the use of this information.

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Modified By:

Date: 05/03/2008

End of MSDS Document