TREMCO®
3735 GREEN ROAD
BEACHWOOD, OHIO 44122-8068

MATERIAL SAFETY DATA SHEET

TELEPHONE: (216)292-5000
EMERGENCIES: (216)765-6727 8:30-5:00 EST
AFTER HOURS: CHEMTREC (800)424-9300

SECTION 1

Order Code: 416805 323

Product Name: VULKEM 116
Chemical Name: POLYURETHANE SEALANT
Chemical Family: Sealant
Product Code: 416-7XX
MSDS Preparer: R.A.MIKOL
Date Prepared: 24-MAY-01
Replaces Date: 13-MAY-99

Other Applications:
THIS MATERIAL SAFETY DATA SHEET (MSDS) APPLIES TO THE FOLLOWING:
416-701(DARK TAN),-712(GRAY),-720(ALUMINUM),-721(BRONZE),-722(BROWN),
-723(REDWOOD TAN),-724(ALMOND),-802(BLACK),-805(LIMESTONE),-806(WHITE),
AND OTHER COLORS.

Section 2 - Molecular Composition

Common Name and Chemical Name / Exposure Limits				Weight %	CAS Number
AROMATIC POLYISOCYANATE RESIN				30.0-60.0	Trade Secret
OSHA:TWA	-	STEL	-		
ACGIH:TWA	-	STEL	-		
CALCIUM CARBONATE (LIMESTONE)				10.0-20.0	1317-65-3
OSHA:TWA	15 mg/M3	STEL	- (total dust, 5mg/M3 respirable fraction)		
ACGIH:TWA	10 mg/M3	STEL	- (total dust, no asbestos, <1% SiO2)		
PHTHALATE PLASTICIZER				5.0-10.0	Trade Secret
OSHA:TWA	-	STEL	-		
ACGIH:TWA	-	STEL	-		
TACKIFIER				5.0-10.0	Trade Secret
OSHA:TWA	-	STEL	-		
ACGIH:TWA	-	STEL	-		
BUTYL BENZYL PHTHALATE				5.0-10.0	85-68-7
OSHA:TWA	5 mg/M3	STEL	-		
ACGIH:TWA	5 mg/M3	STEL	10 mg/M3		
THICKENER				3.0-7.0	Trade Secret
OSHA:TWA	-	STEL	-		
ACGIH:TWA	-	STEL	-		
INERT FILLER				1.0-5.0	Trade Secret
OSHA:TWA	-	STEL	-		
ACGIH:TWA	-	STEL	-		
AROMATIC PETROLEUM DISTILLATES				1.0-10.0	64742-95-6
OSHA:TWA	-	STEL	-		
ACGIH:TWA	-	STEL	-		
TRIMETHYL BENZENES (MIXED ISOMERS)				1.0-5.0	25551-13-7
OSHA:TWA	25 ppm	STEL	-		
ACGIH:TWA	25 ppm	STEL	-		
4,4'- METHYLENE BIS(PHENYLISOCYANATE)				0.1-0.5	101-68-8
OSHA:TWA	-	Ceil	0.020ppm		
ACGIH:TWA	0.005ppm	STEL	-		
TOLUENE DIISOCYANATE (MIXED ISOMERS)				0.1-0.5	26471-62-5
OSHA:TWA	0.005ppm	STEL	0.020ppm		
ACGIH:TWA	0.005ppm	STEL	0.020ppm		
XYLENES (DIMETHYLBENZENES)				0.1-0.5	1330-20-7
OSHA:TWA	100 ppm	STEL	150 ppm		
ACGIH:TWA	100 ppm	STEL	150 ppm		

POLYMETHYLENE POLYPHENYL ISOCYANATE					0.1-0.5	9016-87-9
OSHA:TWA	-	Ceil 0.020ppm				
ACGIH:TWA	0.005ppm	STEL	-			
CRYSTALLINE SILICA (QUARTZ)					0.01-0.4	14808-60-7
OSHA:TWA	0.10 mg/M3	STEL	-	(respirable dust)		
ACGIH:TWA	0.10 mg/M3	STEL	-	(respirable dust)		
CARBON BLACK					0.0-2.0	1333-86-4
OSHA:TWA	3.50 mg/M3	STEL	-			
ACGIH:TWA	3.50 mg/M3	STEL	-			
TITANIUM DIOXIDE					0.0-10.0	13463-67-7
OSHA:TWA	10 mg/M3	STEL	-			
ACGIH:TWA	10 mg/M3	STEL	-	(total dust, no asbestos, <1% SiO2)		
IRON OXIDE					0.0-7.0	1309-37-1
OSHA:TWA	10 mg/M3	STEL	-	(dust,fume as Fe)		
ACGIH:TWA	5 mg/M3	STEL	-	(fume as Fe)		

Section 3 - Hazards Identification

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Emergency Overview:

Various color pastes. Can cause headache, irritation, nausea, drowsiness, stupor, coughing spell and allergic respiratory sensitization. Leave area to breathe fresh air. Should be observed by physician immediately if over-exposure is severe.

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Potential Hlth Effect/Rte of Entry:

Inhalation:

Can cause headache, irritation, nausea, drowsiness, stupor, coughing spell and allergic respiratory sensitization.

Eyes:

Can cause irritation.

Ingestion:

Can cause gastrointestinal irritation.

Skin:

Can cause irritation, sensitization, dermatitis. Can be absorbed through skin.

Aggravated Medical Conditions:

Pre-existing eye, skin, liver, kidney, and respiratory disorders may be aggravated by exposure.

Acute Health Effects:

See effects described above.

Chronic Health Effects:

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Prolonged or repeated exposure of butyl benzyl phthalate to rats produced decreased body weights,spleen and sex organ changes, increased liver and kidney weights, reduced food consumption, weakness, hind limb stiffness, and effects on the liver, testes and pancreas. Birth defects have been reported in mice and rats, but only at high doses that produce significant toxicity in the mother and offspring. Birth defects have not been observed in rabbits. Evidence of carcinogenicity has been mixed. Initial NTP studies has reported an increased incidence of mononuclear cell leukemias in female rats, a commonly occuring spontaneous disease in this

strain, but no increase in tumors in mice. However, a repeat study has not found an increase in leukemias, although a increase in kidney and bladder lesions in females and in pancreatic tumors in males was noted. Furthermore, a concurrent study that restricted diet also has not revealed any increase in tumors in male and female rats. Numerous studies also have indicated that it is not genotoxic. A long-term NTP study showed that oral exposure to toluene diisocyanate (TDI) caused cancer in rats and mice. A lifetime inhalation study sponsored by the International Isocyanate Institute did not show carcinogenic activity in rats. Diphenylmethane diisocyanate (methylene bis phenylisocyanate) caused an increased incidence of lung tumors in experimental animals following long term inhalalation at concentrations in excess of 100 times the exposure limit. Overexposure to isocyanate can cause a decrease in lung function. Skin and respiratory sensitization is possible. Inhalation of crystalline silica (quartz) can cause cancer based on animal data, and IARC concludes sufficient evidence in humans (Group 1). Prolonged and repeated overexposure to free crystalline silica dust above the TLV level may cause scarring of the lungs with cough and shortness of breath. A delayed lung injury, silicosis may result from breathing free silica. No serious health effects have been established in man when exposed to carbon black. Inflammation, lung fibrosis, and tumors have been observed in animals at levels which overload lung clearance mechanisms. Carbon black contains varying amounts of polynuclear aromatic compounds (PNA's) which have been found to cause cancer in animals. Solvent extracts of carbon black are carcinogenic to the skin of mice. It is classified by IARC to be a known animal carcinogen and a possible human carcinogen (Group 2B). Fillers are encapsulated and not expected to be released from product under normal conditions of use.

Section 4 - First Aid Measures

Inhalation:
Leave area to breathe fresh air. Should be observed by physician immediately if overexposure is severe.

Eyes:
Flush immediately with running water for 15 minutes, lifting the upper and lower lids occasionally. Get medical attention immediately.

Ingestion:
Get medical attention immediately.

Skin:
Wash area of contact thoroughly with hand cleaner followed by soap and water. If irritation, rash or other disorders develop, get medical attention immediately.

Notes to Physician: N/A

Section 5 - Fire Fighting Measures

Flash Point:	150 F
Method:	TAG CLOSED CUP
Lower Flammability Limit:	0.6% (SOLVENT)
Upper Flammability Limit:	7.0% (SOLVENT)
Autoignition Temperature:	NOT ESTABLISHED

Extinguishing Media:
If water fog is ineffective, use carbon dioxide, dry chemical or foam.

Fire and Explosion Hazards:
Never use welding or cutting torch on or near container (even empty). Product, residue or vapor may ignite. See Section 7 for additional precautions.

Special Fire Fighting Procedures:
During a fire, personnel at the scene are to prevent exposure to fumes using accepted fire fighting techniques.

Fire Fighting Equipment: N/A

Other Precautions:
Hydrocyanic acid, oxides of nitrogen can form.

Section 6 - Accidental Release Measures

Release Response Overview:
Remove sources of ignition immediately. Ventilate to reduce the airborne contaminant concentration below the exposure limit in Section 2 of the MSDS. Absorb spill in sand, earth or other suitable material. Transfer to appropriate container for disposal.

Section 7 - Handling and Storage

Handling and Storage Precautions:
Store in closed container below 80F. Keep product and vapor away from heat, sparks and flame. Do not store in direct sunlight. Prevent inhalation of vapor, ingestion, and contact with skin and eyes. Keep container closed when not in use. Vapor may migrate to sources of ignition. Do not smoke, weld, generate sparks, or use flame near container. Change soiled workclothes frequently. Clean hands thoroughly after handling. Precautions also apply to emptied containers. Personal protective equipment must be worn during maintenance or repair of contaminated mixer, reactor, or other equipment.

Section 8 - Exposure Controls/Personal Protection

Respiratory:
Wear appropriate, properly fitted NIOSH/MSHA approved respirator when airborne contaminant level(s) exceed exposure limits indicated in Section 2. Select positive pressure supplied air respirator (TC19C or equivalent) for isocyanates.

Skin:
Protect hands with impervious rubber gloves and wear rubber apron and overshoes. Prevent contact with skin.

Eyes:
Wear suitable safety eyewear.

Face:
Not required.

Engineering:
Use local exhaust when the general ventilation is not sufficient to keep the airborne contaminant concentration below the exposure limit in Section 2 of the MSDS.

Section 9 - Physical and Chemical Properties

Odor/Appearance:	SOLVENT/VARIOUS COLOR PASTE
Color:	VARIOUS
Physical State:	PASTE
pH:	NOT APPLICABLE
Vapor Pressure:	NOT ESTABLISHED
Vapor Density:	>1 (AIR=1)
Boiling Point:	280F (SOLVENT)
Melting Point:	NOT ESTABLISHED
Freezing Point:	NOT ESTABLISHED
Solubility in Water:	NEGLIGIBLE
Specific Gravity:	1.3
% Volatile Weight:	10.0#

Section 10 - Reactivity/Stability

Stability:
Stable
Incompatible Products:
Avoid contact with water, amines, bases, oxidizers, alcohols.
Conditions to Avoid Polymerization:
Hazardous polymerization will not occur.

Section 11 - Toxicological Information

Eyes:	SEE SECTION 3
Ingestion:	" " "
Inhalation:	" " "
Skin:	" " "
Subchronic:	" " "
Chronic:	" " "

Section 12 - Ecological Information

Ecotoxicological Data:	N/A
Chemical Fate:	N/A

Section 13 - Disposal Considerations

RCRA Class: N/A
Disposal Method:
Waste not regulated under RCRA. Incinerate at EPA approved facility or dispose of waste in compliance with state and local regulations.

EPA Reportable Quantities

N/A

Section 14 - Transportation Data

DOT Shipping Name: NOT REGULATED

DOT Hazard Class:
DOT Label: NOT REGULATED
UN/NA Number:
Packing Group:
Special Provisions:
Packaging

Exceptions:
Non-Bulk:
Bulk:

Quantity Limitations

Passenger Aircraft or Railcar:
Cargo Aircraft:

Vessel Stowage Requirements

Vessel Stowage:
Other Stowage:

Transportation Notes: N/A

Section 15 - Regulatory Information

TSCA Status: On the TSCA Inventory
OSHA Status: Considered hazardous based on the following criteria:
Irritant
Sensitizer

Target Organs

Liver
Kidney
Nerve
Blood
Reproductive
Lung
Skin
Eye

OSHA Hazardous Components	CAS Number
CALCIUM CARBONATE (LIMESTONE)	1317-65-3
* CRYSTALLINE SILICA (QUARTZ)	14808-60-7
INERT FILLER	Trade Secret
* CARBON BLACK	1333-86-4
TITANIUM DIOXIDE	13463-67-7
IRON OXIDE	1309-37-1
BUTYL BENZYL PHTHALATE	85-68-7
TRIMETHYL BENZENES (MIXED ISOMERS)	25551-13-7
XYLENES (DIMETHYLBENZENES)	1330-20-7
4,4'-METHYLENE BIS (PHENYLISOCYANATE)	101-68-8
POLYMETHYLENE POLY(PHENYL ISOCYANATE)	9016-87-9
* TOLUENE DI-ISOCYANATE (MIXED ISOMERS)	26471-62-5

* - CHEMICAL IS LISTED AS AN IARC, NTP, OSHA, or ACGIH CARCINOGEN

Compliance Quantites

N/A

SARA 311 Ratings

Immediate Health Hazard:	Y
Delayed Health Hazard:	Y
Fire Hazard:	N
Reactivity Hazard:	N
Sudden Release of Pressure Hazard:	N

SARA 313 Ingredients	CAS Number
BUTYL BENZYL PHTHALATE	85-68-7
TRIMETHYL BENZENES (MIXED ISOMERS)	25551-13-7
XYLENES (DIMETHYLBENZENES)	1330-20-7
4,4'-METHYLENE BIS(PHENYL ISOCYANATE)	101-68-8
POLYMETHYLENE POLY(PHENYL ISOCYANATE)	9016-87-9
TOLUENE DI-ISOCYANATE (MIXED ISOMERS)	26471-62-5

Proposition 65 Ingredients

WARNING! Contains chemicals known to the State of California to cause cancer, birth defects and/or other reproductive harm.

	CAS Number
CRYSTALLINE SILICA (QUARTZ)	14808-60-7
AROMATIC PETROLEUM DISTILLATES	64742-95-6
TOLUENE DI-ISOCYANATE (MIXED ISOMERS)	26471-62-5

Section 16 - Other Information

FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.
THE HAZARD INFORMATION HEREIN IS OFFERED SOLELY FOR THE CONSIDERATION OF THE USER, SUBJECT TO HIS OWN INVESTIGATION OF COMPLIANCE WITH APPLICABLE REGULATIONS, INCLUDING THE SAFE USE OF THE PRODUCT UNDER EVERY FORESEEABLE CONDITION.