

# Vulkem 116 Caulking - Sealant

- Can be coated with stains or sealers
- One part gun grade polyurethane sealant
- Durable and stays flexible - Moisture Curing



**Contractor Grade**



**Buff**  
#306033



**Dark  
Bronze**  
#306027



**Gray**  
#306030



**White**  
#306035

Excellent general-purpose designed for use on poured and precast concrete, masonry work, window and door perimeters and similar types of construction joints.

**Coverage: Approximately 30 lin. ft. using a  
1/4" bead per tube 10.1 fl. Oz. tube**

# CAULKING AND JOINT CONTROL



## VULKEM CAULKING/SEALANT

- Gun grade polyurethane sealant
- Durable, flexible
- Does not require a primer on most construction materials
- Can be coated with stains or sealers
- Coverage: approx. 30 lin. ft. using a 1/4" bead per tube

### 10.1. FL OZ. Tube

Dark Bronze #306027

Buff #306033

Gray #306030

White #306035

**\$6.99 ea.**

**\$5.99 ea.**

**30 Or More**



## CAULKING GUN

- Heavy duty gun for caulking purposes

#306025

Price:

**\$5.99 ea.**



**URO System Provides An Excellent Surface For Commercial Use As Well As Residential Use.**

## Vulkem® 116

### One-Part, High-Performance Polyurethane Sealant

#### Product Description

Vulkem® 116 is a one-part, moisture-curing, gun-grade polyurethane sealant. It is durable, flexible, and offers excellent performance in dynamic joints.

#### Features and benefits

Vulkem 116 has demonstrated superior primerless adhesion to porous substrates for 30 years, and is the choice for sealing expansion joints in commercial construction applications. Vulkem 116 is also suitable for certain water immersion applications and is rated for 25% movement capability. The cure of the sealant can be accelerated with the addition of the Vulkem Catalyst 45/116.

#### Uses

Vulkem 116 is an excellent general-purpose sealant designed for use on poured and precast concrete, masonry work, window and door perimeters, and similar types of construction joints. It is designed for use on exterior applications but can be used on interior applications with proper ventilation.

#### Colors

Almond, Aluminum, Black, Bronze, Buff, Gray, Dark Bronze, Ivory, Limestone, Redwood Tan, Beige, Stone, Anodized Aluminum, Aluminum Stone, White, Natural Clay

#### Packaging

10.1 oz. (300ml) cartridges, 20 oz. (600ml) sausages, 2 and 5 gallon (7.6 and 18.9 L) pails, and 55 gallon (208 L) drums.

#### Coverage rates

308 linear feet of joint per gallon for a 1/4" X 1/4" joint. For specific coverage rates that include joint size, and usage efficiencies, visit our website usage calculator at [www.tremcosealants.com](http://www.tremcosealants.com).

#### Applicable Standards

Vulkem 116 meets or exceeds the requirements of the following specifications:

- ASTM C 920 Type S, Grade NS, Class 25, Use T, NT, M, A, I class II, and O
- U.S. Federal Specification TT-S-00230C, Class A, Type II
- CAN/CGSB-19.13-M87
- USDA regulation for indirect food contact
- Canadian Food Inspection Agency
- City of Los Angeles (COLA) approval standards

#### Joint design

Vulkem 116 may be used in any vertical or horizontal joint designed in accordance with accepted architectural/engineering practices. Joint width should be 4 times anticipated movement, but not less than 1/4" (6.4mm).

#### Joint backing

Closed cell or reticulated polyethylene backer rod is recommended as joint backing to control sealant depth and to ensure intimate contact of sealant with joint walls when tooling. Where depth of joint will prevent the use of backer rod, an adhesive backed polyethylene tape (bond breaker tape) should be used to prevent three-sided adhesion. All backing should be dry at time of sealant application.

### TYPICAL PHYSICAL PROPERTIES

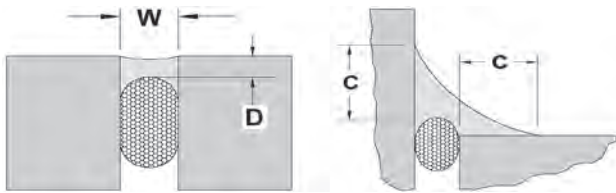
(Results of recent testing at 72°F (22°C) after 21 days cure time.)

Extrusion Rate (ASTM C 1183):	40-50 ml/min.
Hardness Properties, scale "A" (ASTM C 661):	40
Weight Loss (ASTM C 1246):	Pass
Skin Time (tooling time)	6 hours
Tack Free Time (ASTM C 679):	30 hours
Stain & Color Change (ASTM C 510):	No visible color change/No stain
Adhesion-in-Peel (ASTM C 794):	Aluminum 18–22 pli (80–99 N) Concrete 20–25 pli (89–111 N) Brick 19–23 pli (85–102 N) No Adhesion Loss
Effects of Accelerated Aging (ASTM C 793):	Pass
Movement Capability (ASTM C 719):	±25%
Tensile Strength (ASTM D 412)	250 psi
Ultimate Elongation (ASTM D 412)	200 – 300%
100% Modulus (ASTM D 412)	230 psi



## Sealant dimensions

W = Sealant width, D = Sealant depth, C = Contact area.



**EXPANSION JOINTS** - The minimum width and depth of any sealant application should be 1/4" by 1/4" (6mm by 6mm).

The depth (D) of sealant may be equal to the width (W) of joints that are less than 1/2" wide. For joints ranging from 1/2" to 1" (13mm to 25mm) wide, the sealant depth should be approximately one-half of the joint width.

The maximum depth (D) of any sealant application should be 1/2" (13mm). For joints that are wider than 1" (25 mm) contact Tremco's Technical Service Department, or your local Tremco field representative.

**WINDOW PERIMETERS** – For fillet beads, or angle beads around windows and doors, the sealant should exhibit a minimum surface contact area (C) of 1/4" onto each substrate.

## Surface preparations

Surfaces must be sound, clean, and dry. All release agents, existing waterproofing, dust, loose mortar, laitance, paints, or other finishes must be removed. This can be accomplished with a thorough wire brushing, grinding, sandblasting, or solvent washing, depending on the contamination.

Tremco recommends that surface temperatures be 40°F (5°C) or above at the time the sealant is applied. If sealant must be applied in temperatures below 40°F, please refer to the Tremco Guide for Applying Sealants in Cold Weather that can be found on our website at [www.tremcosealants.com](http://www.tremcosealants.com).

## Priming

Where deemed necessary, use Vulkem Primer #171 for porous substrates and TREMprime Non-Porous Primer for metals and plastics. Vulkem 116 typically adheres to common construction substrates without primers; however, Tremco always recommends that mock-up or field adhesion test be performed on the actual materials being used on the job to verify the need for a primer. The field adhesion test can be found in appendix X1 of ASTM C 1193, Standard Guide for Use of Joint Sealants.

## Application

Vulkem 116 is easy to apply with conventional caulking equipment. Ensure that the backer rod is friction fitted properly and any primers have been applied. Fill the joint completely with a proper width-to-depth ratio and tool to insure intimate contact of sealant with joint walls. Dry tooling is always preferred, although xylene can be used in limited amounts to slick the spatula if needed.

For a cleaner finish, mask the sides of the joint with tape prior to filling.

## Cure time

Vulkem 116 generally cures at a rate of 1/16" per day at 75°F (24°C) and 50% relative humidity. It will skin in 5 hours and be tack free in 30 hours. The cure time will increase as temperatures and/or humidity decrease. A good rule of thumb is one additional day for every 10°F decrease in temperature.

## Clean up

Excess sealant and smears adjacent to the joint interface can be carefully removed with xylene or mineral spirits before the sealant cures. Any utensils used for tooling can also be cleaned with xylene or mineral spirits.

## Limitations

- Do not apply Vulkem 116 over damp or contaminated surfaces.
- Always utilize the sealant's MSDS found on our website at [www.tremcosealants.com](http://www.tremcosealants.com) for information on proper ventilation, Personal Protective Equipment (PPE) and other health concerns.

## Warranty

Tremco warrants its sealants to be free of defects in materials, but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Tremco sealants. Tremco's sole obligation shall be, at its option, to replace or refund the purchase of the quantity of Tremco sealant proven to be defective and Tremco shall not be liable for any loss or damage.

Please refer to our website at [www.tremcosealants.com](http://www.tremcosealants.com) for the most up-to-date Product Data Sheets.



**VULKEM 116 LIMESTONE**Version 2.  
REVISION DATE: 10/08/2008

Print Date 04/21/2010

**SECTION 1 - PRODUCT IDENTIFICATION**

Trade name : VULKEM 116 LIMESTONE  
 Product code : 426805 323

COMPANY : Tremco Incorporated  
 3735 Green Road  
 Cleveland, OH 44122

Telephone : (216) 292-5000 8:30 - 5:00 EST  
 Emergency Phone: : (216) 765-6727 8:30 - 5:00 EST  
 After Hours: Chemtrec 1-800-424-9300

Product use : Sealant

**SECTION 2 - HAZARDS IDENTIFICATION****Emergency Overview**

Limestone. Non-sag gunnable paste. May cause slight irritation to the respiratory system. May cause nausea, headaches, and dizziness. May cause drowsiness, weakness, and fatigue. May cause allergic respiratory sensitization. Leave area to breathe fresh air. Avoid further overexposure. If symptoms persist, get medical attention. Move to fresh air. If required, artificial respiration or administration of oxygen can be performed by trained personnel.

**Acute Potential Health Effects/ Routes of Entry**

Inhalation : May cause slight irritation to the respiratory system. May cause nausea, headaches, and dizziness. May cause drowsiness, weakness, and fatigue. May cause allergic respiratory sensitization.

Eyes : Direct contact may cause mild irritation.

Ingestion : May cause gastrointestinal irritation, nausea, and vomiting.

Skin : May cause sensitization resulting in irritation, itching and redness.

**Aggravated Medical Conditions**

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

**Chronic Health Effects**

Overexposure may cause dermatitis, asthma, skin and respiratory sensitization and decreased lung function. Prolonged or repeated contact/exposure to aromatic petroleum distillates may cause defatting, drying, and irritation of the skin, dermatitis, and central nervous system (CNS) effects. 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. Fillers are encapsulated and not expected to be released from product under normal conditions of use. Prolonged or repeated exposure to mineral spirits (petroleum naphtha or stoddard solvent) may cause defatting, drying, and irritation of the skin, dermatitis, central nervous system (CNS) effects, and adverse liver, kidney, and lung effects.

**Target Organs:** Skin, Eye, Ingestion, Lung

**SECTION 3 - PRODUCT COMPOSITION**

Chemical Name	CAS-No.	Weight %
---------------	---------	----------

## VULKEM 116 LIMESTONE

Version 2.

Print Date 04/21/2010

REVISION DATE: 10/08/2008

Aromatic Polyisocyanate Resin	NJ TSRN# 51721300-5270P	30.0 - 60.0
Diisodecyl phthalate	26761-40-0	15.0 - 40.0
Calcium Carbonate (Limestone)	1317-65-3	10.0 - 30.0
Tackifier	NJ TSRN# 51721300-5272P	5.0 - 10.0
Thickener	NJ TSRN# 51721300-5300P	3.0 - 7.0
Titanium dioxide	13463-67-7	3.0 - 7.0
Petroleum distillates	64742-47-8	1.0 - 5.0
Butyl benzyl phthalate	85-68-7	- <1.0
Crystalline Silica (Quartz)/ Silica Sand	14808-60-7	- <1.0
Toluene-2,6-Diisocyanate	91-08-7	- <0.1
2,4-Toluene diisocyanate	584-84-9	- <0.1
o-Cresol	95-48-7	- <0.1

### SECTION 4 - FIRST AID MEASURES

Get immediate medical attention for any significant overexposure.

- Inhalation : Leave area to breathe fresh air. Avoid further overexposure. If symptoms persist, get medical attention. Move to fresh air. If required, artificial respiration or administration of oxygen can be performed by trained personnel.
- Eye contact : Flush with water for at least 15 minutes while holding eye lids apart. Get medical attention immediately.
- Skin contact : Clean area of contact thoroughly using soap and water. If irritation, rash or other disorders develop, get medical attention immediately.
- Ingestion : Do not induce vomiting unless advised by a physician. Call nearest Poison Control Center or Physician immediately.

### SECTION 5 - FIRE FIGHTING MEASURES

- Flash point : 150 F, 66 C
- Method : Tag Closed Cup
- Lower explosion limit : 0.60 %(V) Solvent
- Upper explosion limit : 7 %(V) Solvent
- Autoignition temperature : Not available.
- Extinguishing media : If water fog is ineffective, use carbon dioxide, dry chemical or foam.
- Hazardous combustion products : Carbon monoxide and carbon dioxide can form. Hydrocyanic acid and nitrogen oxides can form.
- Protective equipment for firefighters : Use accepted fire fighting techniques. Wear full firefighting protective clothing, including self-contained breathing apparatus (SCBA).

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Use appropriate protective equipment. Avoid contact with material. Scrape up and transfer to appropriate container for disposal.

### SECTION 7 - HANDLING AND STORAGE

Prevent inhalation of vapor, ingestion and contact with skin, eyes and clothing. Preferably use entire contents in

## VULKEM 116 LIMESTONE

Version 2.

Print Date 04/21/2010

REVISION DATE: 10/08/2008

one continuous work session. Do not smoke, weld, generate sparks, or use flame near container. Change soiled work clothes frequently. Clean hands thoroughly after handling Do not store or use near food. Keep container closed when not in use. Since emptied containers retain product residue and vapor, observe precautions even after container is emptied. Store under dry warehouse conditions away from heat and all ignition sources.

### SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Personal protection equipment

- Respiratory protection : Wear appropriate, properly fitted NIOSH/MSHA approved organic vapor or supplied air respirator when airborne contaminant level(s) are expected to exceed exposure limits indicated on the MSDS. Follow manufacturer's directions for respirator use.
- Hand protection : Use suitable impervious nitrile or neoprene gloves and protective apparel to reduce exposure.
- Eye protection : Wear appropriate eye protection. Use safety glasses if eye contact is likely.
- Skin and body protection : Use disposable or impervious clothing if work clothing contamination is likely. Remove and wash contaminated clothing before reuse.
- Protective measures : Use professional judgment in the selection, care, and use.
- Engineering measures : Use general ventilation and/ or local exhaust to reduce the airborne contaminant concentration below the exposure limit listed in the MSDS

#### Exposure Limits

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Regulation</u>	<u>Limit</u>	<u>Form</u>
Calcium Carbonate (Limestone)	1317-65-3	OSHA PEL: OSHA PEL: ACGIH TWA: ACGIH TWA: OSHA TWA: OSHA TWA:	5 mg/m3 15 mg/m3 3 mg/m3 10 mg/m3 15 mg/m3 5 mg/m3	Respirable fraction. Total dust. Respirable particles. Inhalable particles. Total dust. Respirable fraction.
Titanium dioxide	13463-67-7	ACGIH TWA: OSHA PEL: OSHA TWA: OSHA TWA:	10 mg/m3 15 mg/m3 15 mg/m3 5 mg/m3	Total dust. Total dust. Respirable fraction.
Petroleum distillates	64742-47-8	ACGIH TWA: ACGIH TWA:	200 mg/m3 200 mg/m3	Non-aerosols total hydrocarbon vapor Non-aerosols total hydrocarbon vapor
Crystalline Silica (Quartz)/ Silica Sand	14808-60-7	OSHA TWA: OSHA TWA: OSHA PEL: OSHA PEL: ACGIH TWA:	0.1 mg/m3 0.3 mg/m3 15 mg/m3 5 mg/m3 0.025 mg/m3	Respirable. Total dust. Total dust. Respirable fraction. Respirable fraction.
Toluene-2,6-Diisocyanate	91-08-7	ACGIH TWA: ACGIH STEL:	0.005 ppm 0.02 ppm	

## VULKEM 116 LIMESTONE

Version 2.

Print Date 04/21/2010

REVISION DATE: 10/08/2008

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Regulation</u>	<u>Limit</u>	<u>Form</u>
2,4-Toluene diisocyanate	584-84-9	ACGIH TWA: ACGIH STEL:	0.005 ppm 0.02 ppm	
o-Cresol	95-48-7	ACGIH TWA: OSHA PEL:	5 ppm 22 mg/m3	

### SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form	: Non-sag gunnable paste
Color	: Limestone
Odor	: Petroleum Solvent
pH	: Not available.
Vapour pressure	: Not available.
Vapor density	: Heavier than air
Melting point/range	: Not available.
Freezing point	: Not available.
Boiling point/range	: 280 °F, 138 °C
Water solubility	: Insoluble
Specific Gravity	: 1.1344
% Volatile Weight	: 6 %

### SECTION 10 - REACTIVITY / STABILITY

Substances to avoid	: Amines. Water or moisture and oxidizing agents. Alcohols. Strong acids. Strong bases.
Stability	: Material is stable under normal storage, handling, and use.
Hazardous polymerization	: Will not occur.

### SECTION 11 - TOXICOLOGICAL INFORMATION

Butyl benzyl phthalate, CAS-No.: 85-68-7	
Acute oral toxicity (LD-50 oral)	13,500 mg/kg ( Rat )
2,4-Toluene diisocyanate, CAS-No.: 584-84-9	
Acute oral toxicity (LD-50 oral)	5,800 mg/kg ( Rat )
Acute inhalation toxicity (LC-50)	14 mg/l for 4 h ( Rat ) 10 mg/l for 4 h ( Mouse ) 13 mg/l for 4 h ( Guinea pig ) 11 mg/l for 4 h ( Rabbit )
o-Cresol, CAS-No.: 95-48-7	
Acute oral toxicity (LD-50 oral)	940 mg/kg ( Rabbit ) 1,800 mg/kg ( Rabbit ) 121 mg/kg ( Rat ) 344 mg/kg ( Mouse ) 1,350 mg/kg ( Rat )
Acute inhalation toxicity (LC-50)	0.179 mg/l for 2 h ( Mouse )
Acute dermal toxicity (LD-50 dermal)	620 mg/kg ( Rat ) 890 mg/kg ( Rabbit ) 620 mg/kg ( Mouse )



**VULKEM 116 LIMESTONE**

Version 2.  
REVISION DATE: 10/08/2008

Print Date 04/21/2010

**SECTION 12 - ECOLOGICAL INFORMATION**

No Data Available

**SECTION 13 - DISPOSAL CONSIDERATIONS**

Disposal Method : Waste not regulated under RCRA. Dispose of in compliance with state and local regulations.

**SECTION 14 - TRANSPORTATION / SHIPPING DATA**

**TDG / DOT Shipping Description:**  
NOT REGULATED

**SECTION 15 - REGULATORY INFORMATION**

**North American Inventories:**

All components are listed or exempt from the TSCA inventory.  
This product or its components are listed on, or exempt from the Canadian Domestic Substances List.

**U.S. Federal Regulations:**

SARA 313 Components : None present or none present in regulated quantities.

SARA 311/312 Hazards : Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard

OSHA Hazardous Components :

Diisodecyl phthalate	26761-40-0
Calcium Carbonate (Limestone)	1317-65-3
Titanium dioxide	13463-67-7
Petroleum distillates	64742-47-8
Butyl benzyl phthalate	85-68-7
Crystalline Silica (Quartz)/ Silica Sand	14808-60-7
Toluene-2,6-Diisocyanate	91-08-7
2,4-Toluene diisocyanate	584-84-9
o-Cresol	95-48-7

OSHA Status: Considered : Irritant  
hazardous based on the Sensitizer  
following criteria: Carcinogen

OSHA Flammability : IIIA

Regulatory VOC (less water and : 79 g/l  
exempt solvent)

VOC Method 310 : 2 %

Chemical is listed as an IARC, NTP, OSHA, or ACGIH Carcinogen:

**VULKEM 116 LIMESTONE**

Version 2.

Print Date 04/21/2010

REVISION DATE: 10/08/2008

Butyl benzyl phthalate 85-68-7  
 Crystalline Silica (Quartz)/ Silica Sand 14808-60-7

**U.S. State Regulations:**

MASS RTK Components : Calcium Carbonate (Limestone) 1317-65-3  
 Titanium dioxide 13463-67-7  
 Petroleum distillates 64742-47-8  
 Crystalline Silica (Quartz)/ Silica Sand 14808-60-7  
 Toluene-2,6-Diisocyanate 91-08-7  
 2,4-Toluene diisocyanate 584-84-9  
 o-Cresol 95-48-7

Penn RTK Components : Aromatic Polyisocyanate Resin NJ TSRN# 51721300-5270P  
 Diisodecyl phthalate 26761-40-0  
 Calcium Carbonate (Limestone) 1317-65-3  
 Tackifier NJ TSRN# 51721300-5272P  
 Thickener NJ TSRN# 51721300-5300P  
 Titanium dioxide 13463-67-7  
 Petroleum distillates 64742-47-8  
 2,4-Toluene diisocyanate 584-84-9

NJ RTK Components : Aromatic Polyisocyanate Resin NJ TSRN# 51721300-5270P  
 Diisodecyl phthalate 26761-40-0  
 Calcium Carbonate (Limestone) 1317-65-3  
 Tackifier NJ TSRN# 51721300-5272P  
 Thickener NJ TSRN# 51721300-5300P  
 Titanium dioxide 13463-67-7  
 Petroleum distillates 64742-47-8  
 Butyl benzyl phthalate 85-68-7  
 Crystalline Silica (Quartz)/ Silica Sand 14808-60-7

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

26761-40-0	Diisodecyl phthalate
85-68-7	Butyl benzyl phthalate
14808-60-7	Crystalline Silica (Quartz)/ Silica Sand
1333-86-4	Carbon Black
91-08-7	Toluene-2,6-Diisocyanate
584-84-9	2,4-Toluene diisocyanate
100-41-4	Ethylbenzene
108-88-3	Toluene

**SECTION 16 - OTHER INFORMATION**

**HMIS Rating :**

Health	2
Flammability	2
Reactivity	0
PPE	

0 = Minimum  
 1 = Slight  
 2 = Moderate  
 3 = Serious  
 4 = Severe



**VULKEM 116 LIMESTONE**

Version 2.  
REVISION DATE: 10/08/2008

Print Date 04/21/2010

**Further 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 their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

**Prepared by: Rich Mikol**

**Legend**

- |  |  |
|--|--|
| ACGIH - American Conference of Governmental Hygienists                         | PEL - Permissible Exposure Limit                         |
| CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act | RCRA - Resource Conservation and Recovery Act            |
| DOT - Department of Transportation   | RTK - Right To Know                                      |
| DSL - Domestic Substance List  | SARA - Superfund Amendments and Reauthorization Act      |
| EPA - Environmental Protection Agency  | STEL - Short Term Exposure Limit                         |
| HMIS - Hazardous Materials Information System                                  | TLV - Threshold Limit Value                              |
| IARC - International Agency for Research on Cancer                             | TSCA - Toxic Substances Control Act                      |
| MSHA - Mine Safety Health Administration                                       | TWA - Time Weighted Average                              |
| NDSL - Non-Domestic Substance List   | V - Volume   |
| NIOSH - National Institute for Occupational Safety and Health                  | VOC - Volatile Organic Compound                          |
| NTP - National Toxicology Program  | WHMIS - Workplace Hazardous Materials Information System |
| OSHA - Occupational Safety and Health Administration                           |  |