PO Box 5036
North Jay, ME 04262
Ph : 207-645-5109

Submittal

Job: 1311
Marriott
321 Commercial Street
Portland, ME

Spec Section No: FS
Submittal No: 1
Revision No: 1
Sent Date: 7/22/2013

Spec Section Title:

Submittal Title: Firestop

Contractor:
Ranor Mechanical
Tony Stevens

Contractor's Stamp

Approved for general compliance by Opechee Construction Corp.

07/29/2013

General Contractor:
Opechee Construction

Architect's Stamp

Engineer's Stamp

New Closet Flange Firestop Gasket Eliminates Caulk Installation Hassles

STI introduces a new one-step, one-piece firestop gasket solution that requires no tools and no clean-up, saving both time and money.

Somerville, NJ (PRWEB) June 04, 2012 -- Specified Technologies Inc. has introduced a one-piece intumescent gasket specifically designed for sealing closet flanges. SpecSeal® Closet Flange Firestop Gasket installs quickly and easily from the top and expands rapidly when exposed to heat and provides code compliant firestop protection for toilet flange assemblies with plastic and metal pipes. Unlike caulk which when installed from above often interferes with flange fit, or below floor installations which require costly lifts, the SpecSeal Closet Flange is a code compliant, ready-to-use firestop solution that requires no tools and no clean up, saving both time and money.

The one-piece, molded rubber intumescent pad installs beneath a 3” or 4” closet flange to effectively firestop the opening. The die cut rubber gasket is perforated to accommodate various outer diameters of toilet flanges in 1 and 2 hour rated floors. L-ratings are also provided for excellent smoke leakage performance.

SpecSeal Closet Flange firestop gasket meets ASTM E814 (UL1479) and CAN/ULC S115. For additional information on SpecSeal Closet Flange Firestop Gasket orother Specified Technologies products, visit the STI website at www.stifirestop.com, call (800) 992-1180, or e-mail specseal(at)firestop.com. For engineering assistance, call (800) 992-1180, extension 2002.

About Specified Technologies Inc. (STI)
Headquartered in Somerville, New Jersey, STI is an industry leader solely committed to the development of innovative, reliable firestopping solutions. STI offers over 1200 UL® Classified systems that assure high quality, high performance, highly cost-effective firestopping solutions.

Contact Information
Ray Bruno
Specified Technologies, Inc. (STI)
http://www.stifirestop.com
908-526-8000

Stevie Jones
Gemini Connections
610-246-0952

Online Web 2.0 Version
You can read the online version of this press release here.

CLOSET FLANGE FIRESTOP GASKET

APPLICATIONS

SpecSeal® Closet Flange Firestop Gaskets are designed to allow the drain pipe connected to a toilet flange to be properly firestopped without the need for firestop caulk for typical floor assemblies with plastic or metal pipes.

US Patent No. 7,694,474 B1

PHYSICAL PROPERTIES

Property	Closet Flange Gasket
Color	Grey
Thickness	1/4" (6 mm)
Weight	0.14 lbs (0.06 kg)
Expansion Begins	320ºF (160ºC)
Volume Expansion	800%
Storage Temperature	Less than 120ºF (49ºC)
Shelf Life	No Limit

SPECIFIED DIVISIONS

DIV. 7 07 84 00 Firestopping

DIV. 22 22 00 00 Plumbing

CLASSIFIED C UL US

FILL, VOID OR CAVITY MATERIALS FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS. SEE UL FIRE RESISTANCE DIRECTORY 3L73

PRODUCT DESCRIPTION

SpecSeal® Closet Flange Firestop Gaskets are one-piece, molded rubber, intumescent pads that install beneath a 3 or 4" (76 or 102 mm) closet flange to effectively firestop the opening. The die cut rubber gasket is perforated to delineate removable inserts sized to accommodate various outer diameters of toilet flanges.

Traditional firestopping methods require the firestop material to be applied around the pipe prior to setting the toilet flange, which can be problematic if the firestop material is not recessed a sufficient distance from the top to accommodate the throat of the flange. The alternative is to apply the firestopping from the underside of the floor, necessitating the use of ladders or lifts. SpecSeal® Closet Flange Firestop Gaskets solve the problem by providing a labor-friendly method of properly firestopping the opening.

PERFORMANCE

SpecSeal® Closet Flange Firestop Gaskets have been successfully tested in accordance with ASTM E814 (ANSI/UL1479) and CAN/ULC-S115 in one and two hour fire-rated floor assemblies. Consult factory for individual system designs and application requirements.

SPECIFICATIONS

The firestop system for the toilet flange shall be a molded, one-piece intumescent gasket with removable inserts to accommodate various outer diameters of toilet flanges classified by Underwriters Laboratories Inc. (UL) as a fill, void, or cavity material when tested to ASTM E814 (ANSI/UL1479) or CAN/ULC-S115 for up to a 2 hr rating.

INSTALLATION INSTRUCTIONS

1. Remove perforated sections as required to conform to outer diameter and shape of toilet flange.
2. Slip gasket onto bottom of toilet flange and install toilet flange around metal or plastic drain pipe according to the manufacturer's instructions. *Compressible foam rubber gasket allows for installation of toilet flange bolts.*

MAINTENANCE

None typically required. Any damage observed should be repaired using SpecSeal® Firestop Products.

TECHNICAL SERVICE

Specified Technologies Inc. provides toll free technical support to assist in product selection and appropriate installation design. UL Systems, Material Safety Data Sheets, and other technical information is available at the Technical Library at www.stifirestop.com.

PRECAUTIONARY INFORMATION

No unusual hazards are known or expected. Observe normal safety procedures during installation.

AVAILABILITY

SpecSeal® Closet Flange Firestop Gaskets are available from authorized STI distributors worldwide. Visit www.stifirestop.com or call 800.992.1180 for information concerning where to purchase these and other STI products.

ORDERING INFORMATION

CAT. NO.	DESCRIPTION	CASE QTY
CF34	3" or 4" (76 or 102 mm) trade size closet flange gasket	10

Specified Technologies Inc. THE FIRESTOP AUTHORITY

STI is a member of the following organizations:

Member International FireStop Council

Material Safety Data Sheet

3-NOVEMBER-2011

SPECSEAL® Closet Flange Firestop Gasket

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

PRODUCT NAME	SPECSEAL® Closet Flange Firestop Gasket
CHEMICAL FAMILY	Article

Company Identification

MANUFACTURER/DISTRIBUTOR

Specified Technologies Inc.
210 Evans Way
Somerville, NJ 08876 USA

PHONE NUMBERS

Product Information : 1-908-526-8000
Emergency : 1-800-255-3924

OTHER INFORMATION

A Material Safety Data Sheet is not required on SpecSeal® Closet Flange Firestop Gasket due to the fact that this product is an "article" as defined within 29CFR 1910.1200. Accordingly, this product is exempt from OSHA Labeling/MSDS requirements.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the data compiled. However, no representation, warranty, or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur form the use of this information.

Responsibility for MSDS :

Specified Technologies Inc.
210 Evans Way
Somerville, NJ 08876 USA

Submittal Sheet
07840

THERMAFIBER® Safing Insulation

UL- and OPL-labeled* safing insulation for firestops and fire-containment systems

- Firestop product for curtain wall fire and smoke containment systems, floor and wall penetrations, head-of-wall, and other construction joint systems.
- Fire resistant and noncombustible.
- Economical; installs quickly and easily.
- Aids sound control in many assemblies.
- Available in unfaced felt (plain) or with a tough scrim-reinforced foil facing (FSP).
- Durable; nondeteriorating and noncorrosive.

Description

THERMAFIBER® Safing Insulation is a mineral-wool-type insulation that resists temperatures up to 2,000 °F (1,093 °C), thus offering superior fire protection in a wide variety of fire-rated applications. It is a UL- and OPL-labeled product especially intended for tested UL and OPL Designs, as well as many other fire- and smoke-tested assemblies. This product is noncombustible per Standard NFPA 220 when tested in accordance with ASTM E 136, and moisture-resistant, noncorrosive, nondeteriorating, mildew-proof and vermin-proof. It permits dry construction for all-year-round work. Also, THERMAFIBER Safing Insulation is available plain, or with scrim-reinforced foil facing (FSP) that serves as a vapor retarder and/or smoke barrier.

THERMAFIBER Safing Insulation is compatible with both THERMAFIBER® Curtain Wall CW Insulations and THERMAFIBER FIRESPAN™ Insulations.

Perimeter Fire Containment, Penetrations and Construction Joints

THERMAFIBER Safing Insulation is a key element in a wide variety of fire-tested construction assemblies. It is used with THERMAFIBER Curtain Wall and FIRESPAN Insulations in applications to contain both fire and smoke to the area of origin. Especially for mid- and high-rise buildings, where fire and smoke must be prevented from spreading to the next floor. Since the floor assembly is typically fire-rated, one route for the fire spread is through and up the exterior curtain wall system. THERMAFIBER Safing Insulation is also used in conjunction with various sealants and caulks, in wall and floor penetration (poke-through) applications, head-of-wall construction joints, and other construction joints.

It is important to note that one of the most valuable yet misunderstood applications of THERMAFIBER Safing Insulation is its use in exterior curtain wall assemblies to safe-off the opening between concrete floor slabs and the curtain wall assemblies. Many people still believe the myth that all thermal insulations are the same when used in the curtain wall spandrel panels as long as THERMAFIBER Safing Insulation is used in the assembly. This is simply not true. Actual fire tests have proven that low-melt-point insulations, such as glass fiber types, will disintegrate quickly once exposed to fire, leaving the curtain wall unprotected. Then, as the now-unprotected curtain wall disintegrates or falls away, the safing insulation will no longer be supported, and the fire will spread to the floor(s) above. Effective perimeter fire containment can only be achieved when a fire-compatible product with the ability to resist high temperatures (such as THERMAFIBER Curtain Wall Insulations or THERMAFIBER FIRESPAN Insulations) is used in conjunction with the THERMAFIBER Safing Insulation, acting together as a system. (See TF685, TF686 and TF871 for additional information).

Installation

Perimeter Installation

In curtain wall fire-containment applications, THERMAFIBER Safing Insulation fills the void between the slab edge and the curtain wall insulation to contain fire. Foil-faced insulation impedes the passage of smoke and noxious gases. Install THERMAFIBER Safing Insulation, of proper width (2" to 8" max. opening), compression fit in safe-off area (foil side up, if required) between THERMAFIBER FIRESPAN or CW Curtain Wall Insulation and floor slabs, on safing "Z" clips spaced as required in the design (24" or 12" o.c. maximum), leaving no voids. Compression fitting the safing insulation is critical to assuring a tight seal. See specific test description for proper installation details. Install proper topping material, such as THERMAFIBER SMOKE SEAL Compound, or other approved smoke sealants as indicated in the specific test description or architectural specification.

Penetration Application

THERMAFIBER Safing Insulation provides a noncombustible, fire-resistant forming/packing material for many types of penetrations in walls and floor/ceilings. In all poke-through penetrations, clean substrate of dirt, dust, grease, oil, efflorescence, loose material or other matter. With a serrated knife, cut THERMAFIBER Safing Insulation slightly wider than the opening. Compress and tightly fit the minimum thickness and density of insulation required (per system specification) completely around penetrant. For floor slab openings, compress or install THERMAFIBER Safing Insulation according to details indicated in the specific test description or architectural specification to seal completely around cables, ducts, piping or other utilities.

Construction Joint Application

THERMAFIBER Safing Insulation is also used as a forming material in head-of-wall, floor to floor, floor to wall, and wall to wall construction joints. It is compressed and slid into joint openings to completely fill the gap between the intersection of the walls, floor, etc.

* UL is an abbreviation for Underwriters Laboratories Inc.; OPL is an abbreviation for Omega Point Laboratories, Inc.

Technical Data

Surface Burning Characteristics (According to ASTM E 84)

Product Designation	Flame Spread	Smoke Developed
Safing, Regular (Unfaced)	0	0
Safing (Foil-Faced)	25	0

Products have a class A interior finish rating per NFPA 101, life safety code.

Product Density

Product Designation	Actual Density	Density Tolerance-pcf[1]	Minimum Thickness	Application Method
Safing	4.0	-0.5 +1.0	1"	safing clips and/or compression fit
Safing	6.0	-0.75 +2.0	1-1/2"	safing clips and/or compression fit
Safing	8.0	-1.0 +2.0	1"	safing clips and/or compression fit

(1) On packaging weight basis.

For the most up-to-date technical data, please refer to our website at www.thermafiber.com

Product Data

Standards Compliance

THERMAFIBER Safing Insulation meets the following:

ASTM C 665 - Federal Specification HH-I-521F–Safing insulation as Types I and III, Class A, Category 1.

ASTM C 612-00 - Federal Specification HH-I-558B–Safing insulation as Types IA, IB and II.

ASTM E 136 - Rated noncombustible as defined by NFPA Standard 220 when tested according to ASTM E 136.

ASTM E 814 or UL 1479 - Safing insulation used in conjunction with SMOKE SEAL Compound, or other approved material in through - penetration firestop systems.

UL 2079 - Safing insulation used in conjunction with various sealants and caulks in construction joint systems.

ASTM C 553 - THERMAFIBER Insulations absorb less than 1% moisture by weight and volume.

Safing insulation products are approved by: **New York City Board of Standards & Appeals**– 39-74-SM & MEA 209-82-M, Vol. II.

Composition and Materials

THERMAFIBER blankets are a mineral fiber material manufactured from blast furnace slag, a by-product of iron ore reduction, and naturally occurring rock. THERMAFIBER blankets contain greater than 80% post-industrial recycle content. This product contains No Asbestos.

Warranty

System performance following substitution of materials or compromise in assembly design cannot be certified and may result in failure of fire performance under certain conditions. Products and systems provided by Thermafiber Inc. are warranted to be free from defects in material workmanship. Contact Thermafiber Inc. for complete warranty details.

Storage

Store in a cool, dry place.

Submittal Approvals:

Job Name

Contractor | **Date**

Trademarks
THERMAFIBER, FIRESPAN and THE NAME IN MINERAL WOOL are trademarks of Thermafiber Inc. SMOKE SEAL is a trademark of United States Gypsum Company.

Note
Products described here may not be available in all geographic markets. Consult your local sales office or representative for information.

Notice
THERMAFIBER INC. shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. THERMAFIBER'S liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing within thirty (30) days from date it was or reasonably should have been discovered.

Safety First!
Follow good safety and industrial hygiene practices while handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

Health Aspects
Information about health aspects of using THERMAFIBER® Curtain Wall Insulation products are thoroughly explained in North American Insulation Manufacturers Association's (NAIMA) Health and Safety facts for rock and slag wool insulation document #63. Contact Thermafiber, Inc. for more details.

Thermafiber®
THE NAME IN MINERAL WOOL™
3711 West Mill Street
Wabash, IN 46992-8687
1-888-TFIBER1 (834-2371)
www.thermafiber.com

THERMAFIBER MADE FROM RECYCLED MATERIALS

MADE IN USA

TF612/Rev 11/06

MSDS No.: 270
Revision No.: 003
Revision Date: 06/18/03
Page: 1 of 2

Product name: **Mineral wool**

Description: Synthetic vitreous fiber

Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121

Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number: P	EL:	TLV:	STEL:
Slag wool fiber	65997-17-3	NE	1 fiber / cc	NE
Phenolic resin	09003-35-4	NE	NE	NE
Polyvinyl alcohol	09002-89-5	NE	NE	NE

Abbreviations: **PEL** = OSHA Permissible Exposure Limit. **TLV** = ACGIH Threshold Limit Value. **STEL** = Short Term Exposure Limit. **NE** = None Established. **NA** = Not Applicable.

PHYSICAL DATA

Appearance:	2' x 4' x 4" sheets.	Odor:	Negligible.
Boiling Point:	Not applicable.	Vapor Pressure:	Not applicable.
Melting Point:	Approx. 2400° F	VOC Content:	Not applicable.
Evaporation Rate:	Not applicable.	Solubility in Water:	Insoluble.
pH:	Not applicable.	Specific Gravity:	Not determined.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable. Flammable Limits: Not applicable.
Extinguishing Media:	As appropriate for surrounding fire; material does not burn.
Special Fire Fighting Procedures:	Soak cartons to help prevent the spread of fire. Use a self-contained breathing apparatus when fighting fires involving chemicals.
Unusual Fire and Explosion Hazards:	None known.

REACTIVITY DATA

Stability:	Stable.	Hazardous Polymerization:	Will not occur.
Incompatibility:	Strong acids.		
Hazardous Decomposition Products:	Thermal decomposition products can be formed at temperatures exceeding 2000° F. Thermal decomposition can yield CO and CO_2.		
Conditions to Avoid:	None known.		

HEALTH HAZARD DATA

Known Hazards:	**Acute:** Eye, skin and respiratory irritation. **Chronic:** Respiratory impairment.
Routes of Exposure:	Inhalation, Dermal.
Signs and Symptoms of Exposure:	**Eyes:** Mechanical irritation. **Skin:** Itching, irritation. **Inhalation:** Nose, throat and upper respiratory tract irritation.
Carcinogenicity:	Slag wool has been classified by the IARC as Group 3 – Unclassifiable as to Carcinogenicity in Humans.
Medical Conditions Aggravated by Exposure:	Eye, skin, and respiratory conditions.

MSDS No.: 270
Revision No.: 003
Revision Date: 06/18/03
Page: 2 of 2

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Flush with plenty of water while holding eyelids apart. Avoid rubbing the eyes as mechanical abrasions can occur. Call a physician if symptoms persist.
Skin:	Wash with soap and water. Launder clothing before reuse.
Inhalation:	Move to fresh air.
Ingestion:	No ill effects expected.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Safety goggles recommended to prevent particulates from irritating the eyes.
Skin Protection:	Cloth gloves and long sleeves to protect skin from irritating fibers.
Respiratory Protection:	Use local exhaust and/or a NIOSH-approved dust respirator when air movement is inadequate to control dusts / fibers below recommended exposure levels.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Avoid generating dusts. Local exhaust may be required to control dusts if power tools are used for cutting / trimming. Wear appropriate personal protective equipment. Store away from moisture; keep dry.
Spill Procedures:	Not applicable.

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 0, Reactivity 0, PPE B (Gloves, Goggles)
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product does not contain any toxic chemicals which are subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste.
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

Customer Service:	1 800 879 8000	Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000 Jerry Metcalf (x6704)		
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Underwriters Laboratories Inc.®

Northbrook Division
333 Pfingsten Road
Northbrook, IL 60062-2096 USA
www.ul.com
tel: 1 847 272 8800

CERTIFICATE OF COMPLIANCE

CERTIFICATE NUMBER: 20040809-R10905

ISSUE DATE: August 9, 2004 **Page 1 of 1**

Issued to: Thermafiber Inc.
3711 W Mill St Ext
Wabash, IN 46992

Report Reference: **R10905**

This is to Certify that representative samples of: Forming Material, designated as Type SAF mineral wool batts.

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479, Fire Tests of Through-Penetration Firestops. ANSI/UL 2079, Test for Fires Resistance of Building Joint Systems. ASTM E2307-04, Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediae-Scale, Multi-story Test Apparatus

Additional Information: Type SAF mineral wool batts for use as a forming material for use in various Through-Penetration FireStop Systems, Joint Systems and Perimeter Fire Barrier Systems as Specified in UL's Fire Resistance Directory Volume 2.

Only those products bearing the UL Classification Marking should be considered as being covered by UL's Classification and Follow-Up Service.

The UL Classification Marking includes: UL in a circle symbol: with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and, the product category name (product identity) as indicated in the appropriate UL Directory.

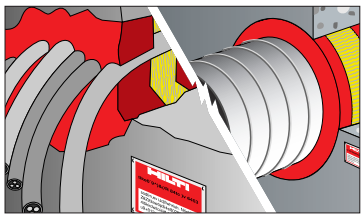
LOOK FOR THE UL CLASSIFICATION MARKING ON THE PRODUCT

Engineer:
Mona Couloute
Underwriters Laboratories Inc.

Review Engineer:
Chris Johnson
Underwriters Laboratories Inc.

FS-ONE

High Performance Intumescent Firestop Sealant



System Advantage / Customer Benefits

- Protects most typical firestop penetration applications
- Easy to work with and fast cleanup
- Can be painted
- Single component systems available
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives and 4.2 Paints and Coatings

Product description

- Intumescent (expands when exposed to fire) firestop sealant that helps protect combustible and non-combustible penetrations for up to 4 hours fire rating

Product features

- Smoke, gas and water resistant after material has cured
- Contains no halogen, solvents or asbestos
- High fire rating properties
- Water based, easy to clean

Areas of application

- Steel, copper and EMT pipes
- Insulated steel and copper pipes
- Cable bundles
- Closed or vented plastic pipes
- HVAC penetrations

For use with

- Concrete, masonry, drywall and wood floor assemblies
- Wall and floor assemblies rated up to 4 hours

Examples

- Sealing around plastic pipe penetrations in fire rated construction
- Sealing around combustible and non-combustible penetrations in fire rated construction

Installation instructions for FS-ONE

Opening

1. Clean the opening. Surfaces to which FS-ONE will be applied should be cleaned of loose debris, dirt, oil, moisture, frost and wax. Structures supporting penetrating items must be installed in compliance with local building and electrical standards.

Application of firestop sealant

2. Install the prescribed backfilling material type and depth to obtain the desired rating (if required). Leave sufficient depth for applying FS-ONE.
3. Application of firestop sealant: Apply FS-ONE to the required depth in order to obtain the desired fire rating. Make sure FS-ONE contacts all surfaces to provide maximum adhesion. For application of FS-ONE use a standard caulking gun, foil pack gun, bulk loader and bulk gun. With FS-ONE buckets, Graco type sealant pumps may be used. (Contact pump manufacturer for proper selection).
4. Smoothing of firestop sealant: To complete the seal, tool immediately to give a smooth appearance. Excess sealant, prior to curing, can be cleaned away from adjacent surfaces and tools with water.
5. Leave completed seal undisturbed for 48 hours.
6. For maintenance reasons, a penetration seal could be permanently marked with an identification plate. In such a case, mark the identification plate and fasten it in a visible position next to the seal.

Notice about approvals

- Check that the penetration has been sealed according to the specified drawing in the UL Fire Resistance Directory or Hilti Firestop Manual. For further advice, please contact Hilti customer service. Refer to Hilti product literature and UL fire resistance directory for specific application details.

Not for use...

- High movement expansion joints
- Underwater
- On materials where oil, plasticizers or solvents may bleed i.e. impregnated wood, oil based seals, green or partially vulcanized rubber
- In any penetration other than those specifically described in this manual or the test reports

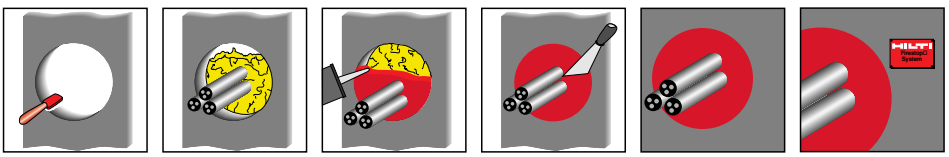
Safety precautions

- Before handling, read the product and Material Safety Data Sheet for detailed use and health information
- Keep out of reach of children
- Wear suitable gloves and eye protection

Storage

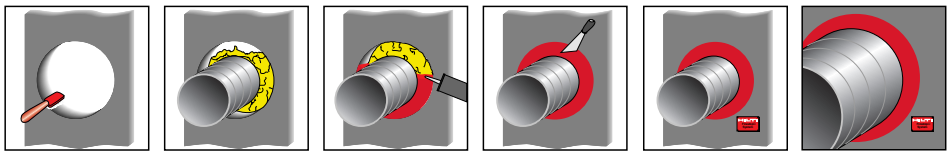
- Store only in the original packaging in a location protected from moisture at temperatures between 40°F (5°C) and 86°F (30°C)
- Observe expiration date on the packaging

CABLE



1. Clean opening. 2. Pack mineral wool. (If required) 3. Apply FS-ONE. 4. Smooth FS-ONE. 5. Leave completed seal undisturbed for 48 hours. 6. Fasten identification plate (if required).

PIPE



1. Clean opening. 2. Pack mineral wool. (If required) 3. Apply FS-ONE. 4. Smooth FS-ONE. 5. Leave completed seal undisturbed for 48 hours. 6. Fasten identification plate (if required).

FS-ONE

Technical Data

At 73°F (23°C) and 50% relative humidity

Chemical basis
Water-based intumescent acrylic dispersion

Density
Approx. 1.5 g/cm³

Color
Red

Working time
Approx. 20-30 min.

Curing time
Approx. 4 mm / 3 days

Shore A Hardness
Approx. 35

Movement capability
Approx. 5%

Intumescent Activation
Approx 482°F (250°C)

Expansion rate (unrestricted):
Up to 3-5 times original volume

Temperature resistance (cured)
–40°F to 212°F (–40°C to 100°C)

Application temperature
41°F to 104°F (5°C to 40°C)

Surface burning characteristics (ASTM E 84-96)
Flame Spread: 0
Smoke Development: 5

Sound transmission classification (ASTM E 90-99) 56

Approvals

ICBO (International Conference of Building Officials)
Report No. 5071

California State Fire Marshal
Listing No. 4485-1200:108

City of New York
MEA 326-96-M

Tested in accordance with

- UL 1479
- ASTM E 814
- ASTM E 84

Internationally tested and approved

CLASSIFIED c UL us — FILL, VOID OR CAVITY MATERIAL FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS SEE UL FIRE RESISTANCE DIRECTORY 66Y7

FM APPROVED

FGG =BM= SYSTEM COMPATIBLE

latest product information : www.us.hilti.com

ordering information see page: 34

MSDS No.: 259
Revision No.: 010
Revision Date: 08/17/04
Page: 1 of 2

Product identifier: **FS-ONE High Performance Intumescent Firestop Sealant**

Description: One-part acrylic-based sealant

Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121

Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	PEL:	TLV:	STEL:
Polyacrylate dispersion	Mixture	NE	NE	NE
Calcium carbonate	001317-65-3	5 mg/m ^{3} (T)	10 mg/m^3 (T)	NE
Zinc borate	138265-88-0	NE	NE	NE
Ammonium polyphosphate	068333-79-9	NE	NE	NE
Talc	014807-96-6	20 mppcf	2 mg/m ^{3}	NE
Expandable graphite	012777-87-6	5 mg/m ^{3} (T)	2 mg/m^3 (T)	NE
Ethylene glycol	000107-21-1	NE	C:100 mg/m ^{3} (A)	NE
Polybutene	009003-29-6	NE	NE	NE
Iron oxide	001309-37-1	10 mg/m ^{3}	5 mg/m^3	NE
Glass filament	065997-17-3	NE	5 mg/m ^{3} (T)	NE
Silicon dioxide	014808-60-7	0.05 mg/m ^{3} (T)	0.1 mg/m^3 (T)	NE
Water	007732-18-5	NE	NE	NE

Abbreviations: **PEL** = OSHA Permissible Exposure Limit. **TLV** = ACGIH Threshold Limit Value. **C** = Ceiling. **STEL** = Short Term Exposure Limit. **NE** = None Established. **NA** = Not Applicable. **(T)** indicates "as total dust". **(R)** indicates "as respirable fraction". **(A)** indicates "as an aerosol". **mppcf** = million particles per cubic foot.

PHYSICAL DATA

Appearance:	Red paste.	Odor:	Odorless.
Vapor Density: (air = 1)	Not determined.	Vapor Pressure:	23mbar @ 20C / 68F
Boiling Point:	Not applicable.	VOC Content:	75.0 g/L.
Evaporation Rate:	Not applicable.	Solubility in Water:	Soluble.
Specific Gravity:	1.5	pH:	Not determined.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Non-flammable.	Flammable Limits:	Not applicable.
Extinguishing Media:	Not applicable. Use extinguishing media as appropriate for surrounding fire.		
Special Fire Fighting Procedures:	None known. Use a self-contained breathing apparatus when fighting fires involving chemicals.		
Unusual Fire and Explosion Hazards:	None known. Thermal decomposition products can be formed such as oxides of carbon, sulfur and phosphorous.		

REACTIVITY DATA

Stability:	Stable.	Hazardous Polymerization:	Will not occur.
Incompatibility:	Strong acids, peroxides, and oxidizing agents.		
Decomposition Products:	Thermal decomposition can yield CO and CO2.		
Conditions to Avoid:	None known.		

HEALTH HAZARD DATA

Known Hazards:	None known.
Signs and Symptoms of Exposure:	Possibly irritating upon contact with the eyes or upon repeated contact with the skin.
Medical Conditions Aggravated by Exposure:	Eye and skin conditions.
Routes of Exposure:	Dermal.
Carcinogenicity:	IARC classifies crystalline silica (quartz sand) as Group I based upon evidence among workers in industries where there has been long-term and chronic exposure (via inhalation) to silica dust; e.g. mining, quarry, stone crushing, refractory brick and pottery workers. This product does not pose a dust hazard; therefore, this classification is not relevant. Based upon the nature and intended use of this product, it does not pose an increased cancer risk to workers.

MSDS No.: 259
Revision No.: 010
Revision Date: 08/17/04
Page: 2 of 2

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Immediately flush with plenty of water. Call a physician if symptoms occur.
Skin:	Immediately wipe off material and wash with soap and water. Material can adhere to the skin. If material has adhered to the skin, use an abrasive containing hand cleaner. If material does not come off, buff with a pumice stone.
Inhalation:	Move victim to fresh air if discomfort develops. Call a physician if symptoms persist.
Ingestion:	Seek medical attention. Do not induce vomiting unless directed by a physician. If a large quantity was ingested, give 1 to 2 glasses of water to dilute. Never give anything by mouth to an unconscious person.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Not required, however, safety glasses should be worn in most industrial settings.
Skin Protection:	Avoid skin contact. Cloth gloves are suitable for hand protection.
Respiratory Protection:	None normally required. Where ventilation is inadequate to control vapors, use a NIOSHapproved respirator with organic vapor cartridges. Never enter a confined space without an appropriate air-supplied respirator.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing	Precautions: Store in a cool, dry area preferably between 40o and 77o F. Keep from freezing. Do not store in direct sunlight. Avoid contact with the eyes or skin. Practice good hygiene; i.e. always wash thoroughly after handling and before eating or smoking. For industrial use only. Keep out of reach of children. Follow label/use instructions.
Spill Procedures:	Immediately wipe away spilled material before it hardens. Place in a container for proper disposal in accordance with all applicable local, state, or federal requirements.

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 0, Reactivity 0, PPE B
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains < 3% ethylene glycol (CAS 107-21-1) and < 15% zinc borate (re: zinc compounds) which are subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste.
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

Customer Service:	1 800 879 8000	Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000 Jerry Metcalf (x6704)		
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Certificate of Compliance

Certificate Number **20060214-R13240E**
Report Reference **2006 February 14**
Issue Date **2006 February 14**

Underwriters Laboratories Inc.®

Issued to: Hilti, Inc.
5400 S 122ND East Ave
Tulsa, OK 74146 USA

This is to certify that representative samples of Fill, Void or Cavity Materials
FS-ONE

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479, ANSI/UL 2079, CAN/ULC-S115-05

Additional Information: FS-ONE Sealant for use in Joint Systems and FS-ONE for use in Through-Penetration Firestop Systems as currently described in the UL Fire Resistance Directory.

Only those products bearing the UL Classification Mark should be considered as being covered by UL's Classification and Follow-Up Service.

The UL Classification Mark includes: UL in a circle symbol: with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and, the product category name (product identity) as indicated in the appropriate UL Directory.

Look for the UL Classification Mark on the product

Issued by:
Mona Couloute
Mona Couloute
Underwriters Laboratories Inc.

Reviewed by:
Christopher Johnson
Underwriters Laboratories Inc.

CP 680-P and CP 680-M Cast-In Firestop Devices

For use in
- Dust and fiber free environments such as hospitals, computer centers and laboratories
- Concrete floor assemblies rated up to 4 hours

Product description
- A one-step cast-in firestop device for a variety of pipe materials and diameters
- Helps reduce labor costs and increase productivity
- Ready-to-use out of the package
- Internationally tested and approved by UL and FM
- Reduces the chance of project delays due to failed inspections

Product features
- Quick and simple installation
- SpeedLine Alignment system promotes faster layout
- QuickTurn System creates fast, simple vertical connections
- Integrated moisture and smoke seal
- Innovative adapter for metal deck applications

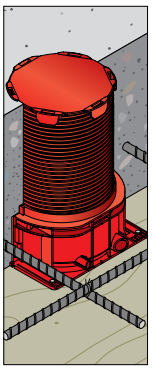
Installation and applications
- Concrete floors from 2.5" (63 mm) thickness for either flat concrete or concrete over metal deck

CP 680-M:
- Insulated and non-insulated metal pipes
- EMT and electrical conduits
- Cable bundles
- Multiple pipes

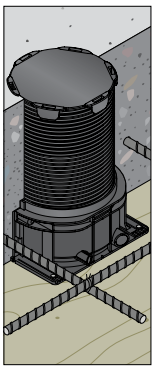
CP 680-P:

Addresses all applications for CP 680-M as well as the following:
- Plastic pipes such as PVC, CPVC, ABS, ENT and FRPP
- Fresh and waste water pipes

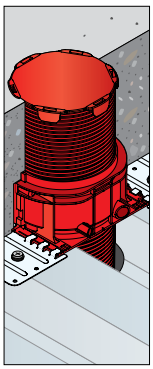
Not suited for
- Areas with high condensation
- Outdoor areas
- Wall applications



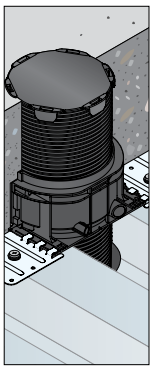
CP 680-P in concrete over wood forms



CP 680-M in concrete over wood forms



CP 680-P over metal deck



CP 680-M over metal deck

Technical Data		CP 680-P and CP 680-M
ID	**Footprint**	**Opening required thru metal deck**
2"	3-3/4" x 4-1/2"	3-1/2" diameter
3"	4-3/4" x 5-5/8"	4-1/2" diameter
4"	6-3/8" x 6-3/4"	5-1/2" diameter
6"	9" x 9-1/2"	7-1/4" diameter
Expansion temperature		392°F (200°C)
Expansion rate		1:50 (unrestrained) 1:30 (Load expansion, Load = 20g/cm³)
Standard height		8"
Temperature resistance		Maximum 212°F (100°C)
Color		CP 680-P: red CP 680-M: black

Approvals
- California State Fire Marshal - No. 4485-1200:135, 4485-1200:136
- City of New York - MEA 1-07-M, MEA 2-07-M

Tested in accordance with
- UL 1479
- ASTM E 814

Internationally tested and approved

FIRESTOP DEVICE
FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY 5N76

FM APPROVED

FBC SYSTEM COMPATIBLE

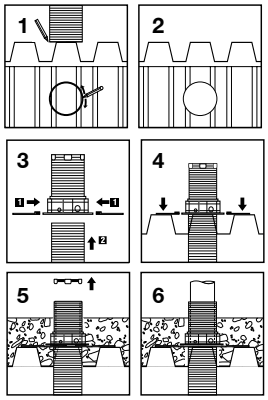
Installation instructions

Notice
- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information

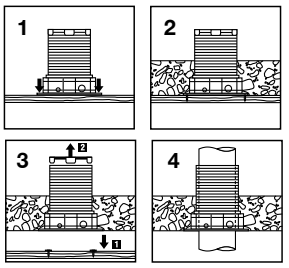
Instructions for use
- Before pouring concrete, secure the cover cap in place, thereby preventing the flow of concrete into the cast-in device
- Do not use for wall applications

Concrete floor with metal decking

For concrete floor with metal decking applications use the correct size CP 680 Metal Deck Adapter for installed cast-in device and follow the illustrations.

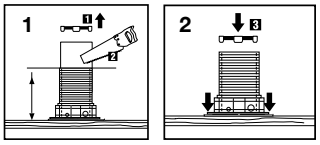


Concrete floor



Installation option

Follow the illustrations if CP 680 has to be cut to slab thickness before installation, or when riser clamps are used.



Hilti Firestop
Saving lives through innovation and education

Hilti. Outperform. Outlast.

Firestop Collar (CP 643N)

Product description
- A ready-to-use firestop collar, made of a galvanized steel housing and intumescent inserts for firestopping combustible pipes

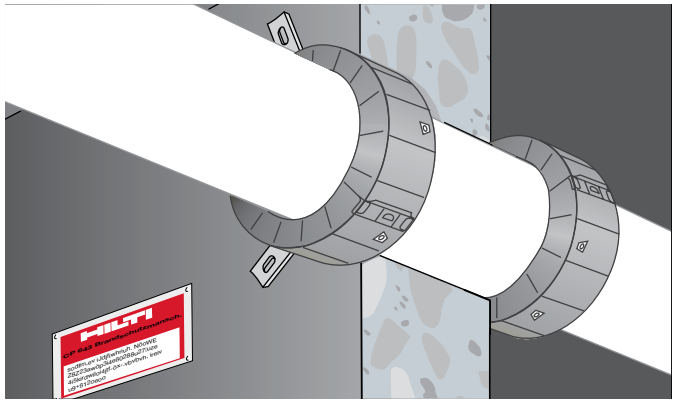
Product features
- Ready-to-use collar
- No construction required
- Fast installation time
- Adjustable mounting tabs
- Low profile for tight installations

Areas of application
- Firestopping combustible pipes up to 6" diameter in penetrations through fire walls and floors
- Suitable for the following pipe materials:
- PVC, CPVC, ABS, PVDF, PP and FRPP

For use with
- Concrete, masonry, wood floor and gypsum wall assemblies
- Wall and floor assemblies rated up to 4 hours

Types of installation
- Wall: two collars, one on each side
- Floor: one collar on underside (bottom)

Example
- Waste water pipes
- Fresh water pipes



Technical Data	CP 643N		
Description	Pipe outside dia (in.)	Collar outside dia. (in.)	Collar Height (in.)	No. of hooks and fasteners
CP 643-50/1.5"N	1.4–2.0	2.8	0.9	2
CP 643-63/2"N	2.0–2.5	3.4	1.3	2
CP 643-90/3"N	2.6–3.6	4.9	1.7	3
CP 643-110/4"N	3.6–4.5	6.0	1.9	3
CP 643-160/6"N	6.6	9.8	1.9	4
Temperature resistance		-40°F to 140°F (–40°C to 60°C)		
Intumescent activation		Approx. 392°F (200°C)		
Expansion ratio (unrestricted)		Up to 1:10		

Tested in accordance with
• UL 1479 • ASTM E 814 • ASTM G21

FIRESTOP DEVICE
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
5N76

FM APPROVED

FBC SYSTEM COMPATIBLE
Visit fbcsystemcompatible.com.
FBC™ is a trademark of the Lubrizol Corporation.

Installation instructions for CP 643N

Notice
- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information

Opening
1. Clean the plastic pipes. Expansion of the intumescent material during a fire acts to close the plastic pipe. Very dirty pipes (ie: with remains of mortar) may lead to a delay in this closing action. Soiled plastic pipes should, therefore, be cleaned in the area where the CP 643N Firestop Collar is to be installed.

Application of firestop system
2. Seal the opening if required. Gaps may be closed with FS-ONE. The approved methods vary and are given in the specific UL system.
3. Close the CP 643N Firestop Collar. Place the CP 643N Firestop Collar around the plastic pipe and lock the closure by applying firm pressure until it latches.
4. Attach fastening hooks. The fastening hooks can be attached to various points on the metal housing. This allows the fastening points to be made to suit the space available in each case. The hooks must be positioned as symmetrically as possible. The required number of fastening hooks is indicated on the packaging.
5. Fastening the CP 643N Firestop Collar. Only when fastened properly can CP 643N offer protection against fire.

a. Mark the fastening points.

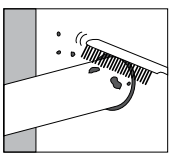
b. Drill holes with a Hilti rotary hammer drill (i.e. TE 4-A18) or, depending on base material, fasten using Hilti powder-actuated tool.

c. To secure the CP 643N Firestop Collar, use Hilti anchors/fasteners.

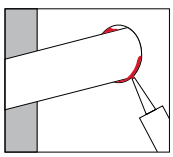
d. For maintenance reasons, a penetration can be permanently marked with an identification plate and fastened in a visible position next to the seal.

Not for use
- With metal pipes
- In highly corrosive surroundings
- With unapproved anchors/fasteners

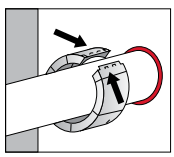
Storage
- Store only in the original packaging in a location protected from moisture



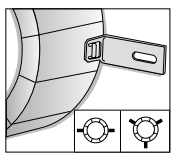
1. Clean plastic pipe.



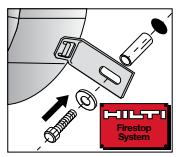
2. Close remaining gap to provide smoke and gas resistant seal.



3. Close collar.



4. Attach fastening hooks.



5. Fasten collar and identification plate (if required).

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MATERIAL SAFETY DATA SHEET

Product name:	**CP 643N Firestop Collar/ CP 644 Firestop Collar**
Description:	Galvanized metal housing containing black polymer-bonded intumescent firestop material
Supplier:	Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Not applicable. This product is considered to be an "article" as defined in the federal OSHA Hazard Communication Standard 29 CFR 1910.1200 / 1926.59.

PHYSICAL DATA

Appearance:	Metal collar/ black firestop material	**Odor:**	None
Vapor Density: (air = 1)	Not applicable	**Vapor Pressure:**	Not applicable
Boiling Point:	Not applicable	**VOC Content:**	7.6 g/l
Evaporation Rate:	Not applicable	**Solubility in Water:**	Not determined
Specific Gravity:	Not determined	**pH:**	Not applicable

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable	**Flammable Limits:**	Not applicable
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures:	None known.		
Unusual Fire and Explosion Hazards:	None known. Product serves as a Firestop; intumescent material inside the collar expands when exposed to temperatures > 160° C / 320° F.		

REACTIVITY DATA

Stability:	Stable.	**Hazardous Polymerization:**	Will not occur.
Incompatibility:	None known	**Decomposition Products:**	None known
Conditions to Avoid:	None known		

HEALTH HAZARD DATA

Known Hazards:	None known	**Routes of Exposure:**	None known
Signs and Symptoms of Exposure:	None expected from routine use/installation according to manufacturer's specifications and technical guides.		
Carcinogenicity:	No ingredients are classified as a carcinogen by IARC, NTP or OSHA.		
Medical Conditions Aggravated by Exposure:	None known		

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	Immediately flush with plenty of water. Call a physician if symptoms occur.
Skin:	Not applicable. Practice good hygiene; i.e. wash hands during breaks, before eating or smoking, and after work.
Inhalation:	Not applicable.
Ingestion:	Not a potential route of exposure
Other:	Referral to a physician is recommended if there is any question about the seriousness of any injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT	
Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	Not required, however, safety glasses should be worn in most industrial settings.
Skin Protection:	None required; however, (cotton) gloves recommended.
Respiratory Protection:	No respiratory protection is needed for normal application of this product.

PRECAUTIONS FOR SAFE HANDLING AND USE	
Handling and Storing Precautions:	Store in a cool dry area. Follow installation instructions.
Spill Procedures:	No special requirements.

REGULATORY INFORMATION	
Hazard Communication:	This product is considered to be an "article" as defined in the federal OSHA Hazard Communication Standard.
DOT Shipping Name:	Not regulated.
IATA / ICAO Shipping Name:	Not regulated.
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product is classified as an "article" and is not subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
EPA Waste Code(s):	Not regulated by EPA as a hazardous waste
Waste Disposal Methods:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS			
Customer Service:	1 800 879 8000	**Technical Service:**	1 800 879 8000
Health / Safety:	1 800 879 6000 Jerry Metcalf (x6704)		
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

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