

# TECHNICAL INFORMATION

## URETHANES

### PRODUCT NAME

## HYDRO ACTIVE<sup>®</sup> Sealfoam NF

Hydrophilic polyurethane resin

### MANUFACTURER

De Neef Construction Chemicals, Inc.  
5610 Brystone Drive  
Houston, TX 77041  
1(800) 732-0166

### PRODUCT DESCRIPTION

HYDRO ACTIVE<sup>®</sup> Sealfoam NF is a nonflammable hydrophilic polyurethane resin designed to form a flexible gasket or plug in joints and cracks in concrete. In its uncured form, HYDRO ACTIVE<sup>®</sup> Sealfoam NF is a pale yellow liquid. When it comes into contact with water, the grout expands quickly and cures to a tough, flexible, adhesive, closed-cell foam that is essentially unaffected by mildly corrosive environments.

### APPROPRIATE APPLICATIONS

- Sealing leaks through concrete cracks and joints.
- Saturating oakum rope or backer rod to seal joints by the gasket method.
- Potable water tanks and storage

### ADVANTAGES

- Contains no volatile solvents
- Non-flammable
- Free Foam expansion 8 times its liquid volume
- Single component
- High elongation creates tight seal in moving cracks
- NSF 61 Potable water approved

### TYPICAL PROPERTIES

#### Uncured

Solids	83%	ASTM D 2369 B
Viscosity	650-800 cps	ASTM D 2196 A
Color	Pale yellow	
Density	8.7 – 9.2 lbs/gal	ASTM D 3574-95
Flashpoint °F	>266°F	ASTM D 93
Corrosiveness	Non-corrosive	
Reaction time 1:1 with water	1 to 1 ½ min.	

#### Cured

Tensile Strength	380 psi	ASTM D 3574 - 95
Elongation	400%	ASTM D 3574 - 95
Bonding Strength	250-300 psi	
Shrinkage	< 10%	ASTM D 1042
Toxicity	Non-toxic	

The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.

### PACKAGING

- 55 gallon metal drum sealed under dry nitrogen.
- 5 gal metal pail sealed under dry nitrogen.
- Cartridges: 10.5 oz/ea.
- Side-by-Side Cartridge: 2 x 10.5 oz.

## LIMITATIONS

Low temperatures will significantly affect viscosity. If site temperatures are extremely low, heat bands or heated water baths may be used on the pails before and during installation to maintain the product's temperature. Avoid splashing water into open containers, as the material is water activated. Avoid exceeding 90°F when warming.

**CAUTION – pH NOTICE. Water used to activate HYDRO ACTIVE® Grouts must be in a range of pH 3 –10 for optimum foam quality.**

## SURFACE PREPARATION

Refer to De Neef Surface Preparation Guidelines for more details.

## INSTALLATION PROCEDURES

Prior to installation the material should be agitated by vigorously shaking the 5-gallon pail or by mixing with a jiffy mixer or bung mixer. During injection the grout will follow the path of least resistance. When the material has stopped migrating, it will continue to expand against the confines of the crack/joint and compress within itself, forming a very dense, closed cell material, stopping the leak. For application procedures in extreme temperatures or specific environments or equipment recommendations call the De Neef Technical Service Department.

## STORAGE & HANDLING

Store in dry area using original resealable containers.

## PRECAUTIONS

Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest. Refer to Material Safety Data Sheet for detailed safety precautions.

## SAFETY INFORMATION

In the event of an EMERGENCY call:  
CHEM-TREC 800-424-9300.

## WARRANTY INFORMATION

De Neef Construction Chemicals, Inc. products are warranted under the policy set forth under the WARRANTY section of the De Neef Construction Chemicals Inc., product catalog. Warranty information can also be obtained via the De Neef Construction Chemicals Inc. website at [www.deneef.com](http://www.deneef.com), or by calling 713-896-0123 or toll free at 1-800-732-0166.

Rev. 02/2010

ANSI/NSF 61  
DRINKING WATER SYSTEM COMPONENTS  
3N76

“HYDRO ACTIVE® SEALFOAM NF “  
MAXIMUM SURFACE AREA TO VOLUME RATIO  
5.4 cm<sup>2</sup>/L AT 23°C





# MATERIAL SAFETY DATA SHEET HYDRO ACTIVE<sup>®</sup> SEALFOAM NF<sup>®</sup> Rev. 05/09

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** HYDROACTIVE<sup>®</sup> SEALFOAM NF

**MANUFACTURER:** de neef Construction Chemicals Inc.

**ADDRESS:** 5610 Brystone Drive

Houston, TX 77095

**PHONE:** (800) 732-0166 (7am-5pm CST Weekdays)

**FAX:** (713) 849-3340

**WEBSITE:** www.deneef.com

**EMERGENCY PHONE:** CHEMTREC (800) 424-9300 (Anytime)

Outside US: 1-703-527-3887

## SECTION 2: HAZARDS IDENTIFICATION (ERG CODE 171)

### EMERGENCY OVERVIEW:

**APPEARANCE AND ODOR:** Amber colored liquid with a sweet odor.

**REACTIVE:** Product will polymerize when exposed to water.

### POTENTIAL HEALTH EFFECTS

**EYES:** Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing. Product may polymerize in eye.

**CHRONIC EYE:** Prolonged vapor contact may cause conjunctivitis

#### SKIN:

Causes irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Contact with skin can cause product to polymerize. Cured material is difficult to remove. Contact with TDI can cause discoloration.

**CHRONIC SKIN:** Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests on TDI indicate skin contact alone may lead to an allergic respiratory reaction.

#### INGESTION:

May polymerize in airway and cause suffocation. May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

**Carcinogenicity:** TDI component :Not carcinogenic to humans as defined by OSHA and ACGIH

TDI component: IARC:Group 2B Possible carcinogen. NTP: Anticipated Carcinogen

**5610 Brystone Dr. Houston, Texas 77041**

**Ph: 713/896-0123 • Fax: 713/849-3340 • [www.deneef.com](http://www.deneef.com)**

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# MATERIAL SAFETY DATA SHEET HYDRO ACTIVE<sup>®</sup> SEALFOAM NF Rev. 05/09

## SECTION 2: HAZARDS IDENTIFICATION (Continued)

### INHALATION:

Diisocyanate vapors or mist can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction).

### CHRONIC INHALATION

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms).

## SECTION 3: HAZARDOUS INGREDIENTS

<u>Name</u>	<u>CAS NO.</u>	<u>% Wt/Wt</u>
Toluene Diisocyanate mixed isomers as below:	26471-62-5	5% - 7%
2,4 -Toluene Diisocyanate	584-84-9	
2,6 -Toluene Diisocyanate	91-08-7	

## SECTION 4: FIRST AID MEASURES

**EYES:** Immediately flush eyes gently with water for at least 15 minutes, while holding open upper and lower lids. Product will react with moisture in eye! Immediately seek medical attention.

**SKIN:** Remove contaminated clothing. Blot or brush the product away, prior to washing the exposed area with water. The cured product on the skin is rarely a cause of irritation (If it does, seek medical attention). The process of trying to remove the cured product may cause irritation.



## MATERIAL SAFETY DATA SHEET HYDRO ACTIVE<sup>®</sup> SEALFOAM NF Rev. 05/09

### SECTION 4: FIRST AID MEASURES continued

INGESTION: SEEK IMMEDIATE MEDICAL ATTENTION! DELAYED TREATMENT MAY RESULT IN FATALITY. Do Not Induce Vomiting. Rinse mouth out with water. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

INHALATION: Move to an area free from further exposure. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

### SECTION 5: FIRE-FIGHTING MEASURES (ERG CODE 171)

FLASH POINT & METHOD USED:

ASTM D93 225F (107°C)

EXTINGUISHING MEDIA:

Dry Chemical, CO<sub>2</sub>, Foam or Water Fog

SPECIAL FIRE FIGHTING PROCEDURES:

Do not scatter material with high pressure water streams. Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous. Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

HAZARDOUS DECOMPOSITION PRODUCTS:

Fire or intense heat will decompose the product into CO<sub>2</sub>, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.



## MATERIAL SAFETY DATA SHEET HYDRO ACTIVE<sup>®</sup> SEALFOAM NF Rev. 05/09

### SECTION 6: ACCIDENTAL RELEASE MEASURES ( ERG CODE 128)

#### ACCIDENTAL RELEASE MEASURES:

Where exposure level is known, wear approved respirator suitable for the level of exposure. If exposure level is unknown, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing in section 8, wear impermeable boots.

#### CLEAN-UP PROCEDURES:

Remove sources of ignition. Stop and contain / dam the spill. Absorb spill with inert material (vermiculite / diatomaceous earth). Shovel material into appropriate container for disposal.

### SECTION 7: HANDLING AND STORAGE

#### HANDLING:

Do not breathe vapors or mists. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposures to lower concentrations. Individuals with breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid skin and eye contact. Wash thoroughly after handling. Keep product away from heat and open flame.

#### STORAGE:

Keep in manufacturer's sealed nitrogen packed pail. Maintain storage temperatures between 65°F to 86°F (18°C to 30°C).

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

The sum of 2,4 and 2,6 isomer concentration should not exceed the guideline limits

2,4-Toluene Diisocyanate (584-84-9)

US. OSHA PEL: 0.02 ppm STEL vacated; 0.005 ppm TWA vacated

US. ACGIH TLVs:

TWA: 0.005 ppm

STEL: 0.02 ppm

Group A4: Not Classifiable as human carcinogen.

Respiratory Sensitizer

2,6-Toluene Diisocyanate (91-08-7)

US. ACGIH TLVs:

TWA: 0.005 ppm

STEL: 0.02 ppm

Group A4: Not Classifiable as human carcinogen.

Respiratory Sensitizer

**ENGINEERING CONTROLS:**

Local exhaust should be used to maintain levels below the TLV and PEL whenever diisocyanate is handled, processed, or spray-applied. At normal room temperatures (70 F) TDI levels quickly exceed the TLV or PEL unless properly ventilated. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program.

**INHALATION:**

Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyper reactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-



## MATERIAL SAFETY DATA SHEET HYDRO ACTIVE<sup>®</sup> SEALFOAM NF Rev. 05/09

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION continued

like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

#### CHRONIC INHALATION

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

#### RESPIRATORY PROTECTION:

Airborne TDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when TDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or (b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

**EYE PROTECTION:** Eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

**SKIN PROTECTION:** Gloves should be worn. Nitrile rubber shows excellent resistance. Butyl rubber, neoprene, and PVC are also effective. Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION continued**

possible with appropriate clothing to prevent skin contact. In cured form, the product is difficult to remove from skin and hair.

**ADDITIONAL PROTECTIVE MEASURES:**

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product.

**WORK HYGIENIC PRACTICES:**

Use good hygiene practices when handling this material including changing and laundering of work clothes after use.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: Light yellow	LOWER FLAMMABILITY LIMITS: Not available
ODOR: Slightly sweet	VAPOR PRESSURE: Not available
ODOR THRESHOLD: Not available	VAPOR DENSITY: Not available
PHYSICAL STATE: Liquid	BULK DENSITY: 8.7-9.2 lbs/gal
pH: Not applicable	SPECIFIC GRAVITY: ~1.05
MELTING/ FREEZING PT: Not available	SOLUBILITY (H <sub>2</sub> O): None
FLASH POINT: CC: 225°F ( 107°C)	PARTITION COEFFICIENT: Not available
EVAPORATION RATE: Not available	AUTO-IGNITION TEMPERATURE: Not available
FLAMMABILITY: Flammable	VISCOSITY: 650-800 cps @ 72°F
UPPER FLAMMABILITY LIMITS: Not available	VOC CONTENT % WT: None
DECOMPOSITION TEMPERATURE: Not available	

**SECTION 10: STABILITY AND REACTIVITY**

**STABILITY:**

Contact with moisture or temperatures above 350° F (177° C) will cause polymerization.

**CONDITIONS TO AVOID (STABILITY):** Exposure to elevated temperatures will cause degradation and/or polymerization.



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**SECTION 10: STABILITY AND REACTIVITY continued**

**INCOMPATIBILITY (MATERIAL TO AVOID):**

Water, Amines, Strong Bases, Alcohols, Copper Alloys, Liquid Chlorine

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:**

Fire or intense heat will decompose the product into acidic and /or toxic smoke and fumes.

**HAZARDOUS POLYMERIZATION:**

During normal polymerization CO<sub>2</sub> is produced.

**SECTION 11: TOXICOLOGICAL INFORMATION**

Mixed isomers of Toluene Diisocyanate

**CARCINOGENICITY:**

IARC: Group 2B Possible carcinogen

NTP: Anticipated Carcinogen

Inhalation: LC50 (rat) :66 ppm/1hrs 13.9 ppm /4hrs

Oral: LD50( rat): 3360 mg/kg

Dermal: LD50 (rabbit): 10000 mg/kg

**SECTION 12: ECOLOGICAL INFORMATION**

**ECOLOGICAL INFORMATION:**

Does not Bioaccumulate (All Ingredients)

2,4-Toluene Diisocyanate (584-84-9) and 2,6-Toluene Diisocyanate (91-08-7)

Ecotoxicity: LC50 (fish):	96 hr rainbow trout:	133 mg/L
	96 hr Japanese medaka	4170 mg/L
	96 hr Zebra fish:	>100 mg/L
	24 hr Zebra fish:	>500 mg/L
EC50 ( invertebrates):	48 hr daphnia	12.5 mg/L
	24 hr daphnia	750 mg/L
	48 hr common shrimp	18.3 mg/L
	24 hr freshwater snail	>500 mg/L

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**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

**Empty Container Precautions**

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal. Dispose of per local, state and federal guidelines as required by your specific local. This product in its cured foam state is inert and non-toxic

**SECTION 14: TRANSPORT INFORMATION**

Not regulated by DOT, IAT, or IMO

**SECTION 15: REGULATORY INFORMATION**

**U.S. FEDERAL REGULATIONS**

Ingredient	TSCA	CERCLA RQ	SARA	
			302	313
2,4 -Toluene Diisocyanate	Yes	100 lbs	Yes	Yes
2,6 -Toluene Diisocyanate	Yes	100 lbs	Yes	Yes

**TSCA:**

All components are listed on or exempt from the TSCA master list inventory.

**WHMIS:**

All components are listed on the CEPA Domestic Substances List (DSL)

Ingredient Disclosure List (IDL), the following components are on the list:

- 2,4 -Toluene Diisocyanate
- 2,6 -Toluene Diisocyanate



CONSTRUCTION CHEMICALS, INC.

**MATERIAL SAFETY DATA SHEET HYDROACTIVE<sup>®</sup> SEALFOAM NF** Rev. 05/09

**SECTION 16: OTHER INFORMATION**

**NFPA HAZARD CLASSIFICATION:**

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1

**HMIS:**

HEALTH: 2 FLAMMABILITY: 1 PHYSICAL HAZARD: 1

**PREPARATION INFORMATION:**

May 2009

This MSDS is on a three year review cycle. If the date on this sheet is older than three years please contact *de neef* Construction Chemicals Inc. for an updated MSDS.

**DISCLAIMER:**

All information appearing herein is based on manufacturer and/ or recognized technical sources. While the information is believed accurate *de neef* Construction Chemicals Inc. makes no representations as to the accuracy or sufficiency of the information.

# SUBMITTAL PACKET COVER SHEET

<b>SUBMITTAL PACKET No.:</b> <u>16802</u> ----		<b>SS_6</b> ----	---- <b>0003</b> ----	<b>00</b>	Line Item(s)		
(Contract)		(Spec. Section)	(Rt. Des.)	(Sequence)	(Revision)		
Title/Description: <b><u>Chemical Grout</u></b>					03 (As Applicable)		
SUBMITTED BY: Contractor		Sub-Contractor		Supplier			
Company Name: <u>Proshot Concrete, Inc</u>							
Address: <u>4158 Musgrove Drive</u> <u>Florence, AL 35630</u>							
Person's Name: <u>Connie Dill</u>							
Telephone No.: <u>256-764-5941</u>							
CM Rec'd. Date	Reviewer Rec'd. Date	CM Return Date	Contractor Rec'd. Date				
Line Item #	Dated Mo/Dy/Yr	Qty.	Spec. Para. Reference	CPM Sch. #	(Mfr's Name) & Brief Descriptive Title	Total # Pages	Status Code (Disposition)
1	10/24/2017	1	SS_6		De neef CUT PURE chemical Grout Data/MSDS Sh	11	
2	10/24/2017	1	SS_6		De neef Hydro Active Cut Cat F/XF Data/MSDS Sh	13	
3	10/24/2017	1	SS_6		Titan Powerbeast Pump	3	

  

<div style="border: 2px solid black; padding: 5px; text-align: center; margin-bottom: 10px;"> <b>[CONTRACT CC-16802]</b> </div> <p style="text-align: center; margin: 0;"><b>Alum Creek Trunk (N) &amp; Alum Creek Subtrunk(ACS) Sanitary Sewer Rehabilitation</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">SPECIFICATION:</td> <td style="border-bottom: 1px solid black; text-align: center;">SS_6</td> </tr> <tr> <td>SEQUENCE NO:</td> <td style="border-bottom: 1px solid black; text-align: center;">0003</td> </tr> <tr> <td>LINE ITEM NO:</td> <td style="border-bottom: 1px solid black; text-align: center;">03</td> </tr> <tr> <td>REVISION:</td> <td style="border-bottom: 1px solid black; text-align: center;">00</td> </tr> </table> <p style="margin: 0;"><b>Proshot Concrete, Inc</b> APPROVED FOR BY: _____ GENERAL CONFORMANCE DATE: _____</p>	SPECIFICATION:	SS_6	SEQUENCE NO:	0003	LINE ITEM NO:	03	REVISION:	00	<p style="text-align: center; margin: 0;"><b>CMT REVIEW STATUS</b></p> <p>DISPOSITION INITIAL REC'D DATE: _____</p> <p>[ ] CONFORMS (CON)</p> <p>[ ] CONFORMS AS NOTED (CAN)</p> <p>[ ] DOES NOT CONFORM (DNC)</p> <p>[ ] NO ACTION REQUIRED (NAR)</p> <p>DATE HOLD NOTICE ISSUED: _____</p> <p>DATE INFORMATION DUE: _____</p> <p>DATE INFORMATION RECEIVED: _____</p> <p style="font-size: small; margin: 5px 0;">THIS REVIEW IS A GENERALIZED CHECKING PROCESS ONLY. REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS UNDER THE CONTRACT; SHALL NOT WAIVE THE RIGHT OF THE OWNER TO ORDER THE REMEDY OF SUCH DEFECTS IN ANY ITEM OF WORK AS MAY LATER BE REVEALED; AND IN NO WAY SHALL RENDER THE CMT LIABLE FOR FAILURE TO DETECT ANY SUCH DEFECTS. THE CMT IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, CONTRACTOR'S SCHEDULING OR CONSTRUCTION SAFETY.</p> <p>NAME: _____ PHONE: _____</p> <p>DATE: _____ SIGNATURE: _____</p>
SPECIFICATION:	SS_6								
SEQUENCE NO:	0003								
LINE ITEM NO:	03								
REVISION:	00								

# SUBMITTAL PACKET COVER SHEET

<b>SUBMITTAL PACKET No.:</b>	<u>16802</u> ---- <u>SS_6</u> ---- <u>000</u> ---- <u>0003</u> ---- <u>00</u>
	(Contract)      (Spec. Section)      (Rt. Des.)      (Sequence)      (Revision)

**Note:** If individual Drawings are included for review, be sure to list each Drawing No., its Issued Status & Issued Date and/or the specific revision level of each drawing. Please be sure to identify each submittal item being furnished, such as Catalog Cuts Sheets or Product Information Data Sheets, etc. Be sure to clearly identify each separate item submitted for review. Please Do Not use High-Liters to mark an item. Please circle each item or mark it with an arrow. Also, please cross-out items which are not applicable or stamp Does Not Apply. If you have questions, please contact the CMT.

A Substitution or deviation from the Contract Documents applies to Item # (s)

Line Item #	Dated Mo/Dy/Yr	Qty.	Spec. Para. Reference	CPM Sch. #	(Mfr's Name) & Brief Descriptive Title	Total # Pages	Status Code (Disposition)

**CMT REMARKS:** (Print your Name and the Date following your Remarks).

**CONTRACTOR REMARKS:** (Print your Name and the Date following your Remarks).

SEE ATTACHED SUBMITTAL ENCLOSURE SHEET(S) FOR ADDITIONAL SUBMITTAL ITEMS AND/OR REMARKS.  N/A

ROUTING	DATE RECEIVED	DATE FORWARDED	QUANTITY RECEIVED / FORWARDED				
			PRINTS	M & O	SAMPLES	DATA	OTHER
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## CUT PURe

### Product Description

Cut PURe is a hydrophobic polyurethane designed to fill large voids in rock fissures, gravel layers, joints, and cracks in concrete structures and for the cut-off of gushing water. Depending on the temperature and amount of accelerator (Cut Cat PURe) used, the grout quickly cures to a rigid, closed cell polyurethane foam that is resistant to most organic solvents, mild acids, alkali, petroleum and micro-organisms.

- P**hthalate free- no phthalate-based plasticizers
- U**nregulated for transport- no hazmat shipping
- R**eformulated TDI free-all MDI based technology.
- e**nvironmentally friendly-NSF/ANSI 61 approved.



CUT PURe when combined with CUT CAT PURe is certified by WQA to NSF/ANSI 61 for materials safety only, as verified and substantiated by test data.

Please refer to WQA website([www.wqa.org](http://www.wqa.org)) for use ratios and limitations

### Applications

- Sealing larger volume leaks through concrete cracks and fissures
- Filling voids
- Stabilizing soil or gravel

### Properties

Cut PURe Resin		
Solids	100%	ASTM D1010
Viscosity	200 cp at 77°F	ASTM D1638
Color	Black-brown liquid	
Density	1.10 g/cm <sup>3</sup>	ASTM D1638
Flashpoint	293°F	CC
Corrosiveness	Non-corrosive	
Cut Cat PURe		
Viscosity	15 cp at 77°F	ASTM D2196
Color	Red Liquid	
Flashpoint	158°F	CC
Cut PURe Cured		
Density confined	1.00 g/cm <sup>3</sup>	ASTM D3574
Density free	2 PCF	
Compressive	4351 psi	confined
Flexural	2320 psi	confined

### Product Advantages

- Free Foam Expansion up to 30 times
- Contains no volatile solvents
- Single Component
- Will not dilute in water
- Controlled reaction time
- 3 catalysts available: Cut Cat, Fast, XF

### Packaging & Handling

- Cut PURe: 5 gallon metal pail  
50 gallon metal drum
- Cut Cat PURe: 32 oz. metal cans

Cut PURe is sealed under dry nitrogen because it is sensitive to moisture, and should be stored in original containers in a dry area. Storage temperature must be between 40°F and 90°F. Once the packaging has been opened, the useful life of the material is greatly reduced and should be used as soon as possible. Shelf life: 2 years.

## Reaction Times

T	% Cat	End Reaction	Foam Factor
40°F	2	13'20"	15V
	3	11'00"	21V
	5	5'35"	22V
	10	3'05"	25V
50°F	2	11'30"	19V
	3	9'10"	21V
	5	5'00"	24V
	10	2'50"	28V
60°F	2	9'40"	20V
	3	7'45"	22V
	5	4'45"	25V
	10	2'35"	28V
68°F	2	8'00"	20V
	3	6'30"	23V
	5	4'35"	27V
	10	2'10"	29V
77°F	2	7'35"	21V
	3	6'10"	24V
	5	4'00"	28V
	10	2'05"	30V
86°F	2	7'10"	22V
	3	5'35"	25V
	5	3'35"	29V
	10	1'55"	30V
95°F	2	5'40"	22V
	3	4'45"	25V
	5	2'55"	29V
	10	1'50"	30V

## Installation Guidelines

**Warning:** Consult the Technical Data Sheets and MSDS before using.

**Installation Instructions:** For detailed installation instructions refer to the DeNeef technical bulletin for your application.

**Catalyst:** Shake catalyst can 2-3 minutes. Pour

[www.deneef.com](http://www.deneef.com)

### Technical Service 1-800-732-0166

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for the users' consideration, investigation and verification, but we do not warrant the results to be obtained. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use which would infringe any patent or copyright. W. R. Grace & Co.-Conn., 62 Whittemore Avenue, Cambridge, MA 02140.

In Canada, Grace Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

This product may be covered by patents or patents pending.

DN-XXX

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the desired amount of Cut PURE into a clean dry pail. Measure the appropriate amount of Cut Cat PURE (refer to the **Reaction Times** section of this data sheet for the desired set time) and pour it into the pail. Stir until adequately mixed. Exceeding the recommended amount of catalyst may adversely affect the reaction and quality of the cured foam.

**Injection:** During injection the grout will follow the path of least resistance. When the material has stopped penetrating it will continue to expand against the limits of the confined space and compress within itself, forming a dense, closed cell foam.

**Extreme conditions:** For application procedures in extreme temperatures and specific environments or equipment recommendations call the DeNeef Technical Service Department.

**Cleaning:** Clean all tools and equipment which have been in contact with the resin with DeNeef Washing Agent before resin has cured. Products should be disposed of according to local, state, and federal laws.

## Health and Safety

Always use protective clothing, gloves and goggles consistent with OSHA regulations. Avoid eye and skin contact. Do not ingest. Refer to MSDS. For emergencies, call CHEMTREC 1-800-424-9300.

## Limitations

Low temperatures will significantly affect viscosity. If site temperatures are extremely low, heat bands or heated water baths may be used on the pails before and during installation to maintain the product's temperature. Avoid splashing water into open containers, as the material is water activated. Avoid exceeding 90°F when warming.

**CAUTION: pH NOTICE.** Water used to activate PURE Grouts must be in the pH range of 3-10 for optimum foam quality.

Issue: 03/2012

GRACE

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**MATERIAL SAFETY DATA SHEET** *CUT PURe* Rev. 01/2012

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** *CUT PURe*

W.R.Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140	Grace Canada, Inc. 294 Clements Road West Ajax, Ontario L1S 3C6
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**In Case of Emergency Call:**

In USA: (617) 876-1400 In Canada: (905) 683-8561

**SECTION 2: HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:**

**APPEARANCE AND ODOR:** Honey colored liquid with a slightly musty odor.

**REACTIVE:** Product will polymerize when exposed to water.

**POTENTIAL HEALTH EFFECTS**

**EYES:** Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing. Product may polymerize in eye.

**CHRONIC EYE:** Prolonged vapor contact may cause conjunctivitis

**SKIN:**

Causes irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Contact with skin can cause product to polymerize. Cured material is difficult to remove. Contact with MDI can cause discoloration.

**CHRONIC SKIN:** Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests on MDI indicate skin contact alone may lead to an allergic respiratory reaction.

**INGESTION:**

May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. Carcinogenicity: No Carcinogenic substances as defined by IARC, NTP and/or OSHA

**SECTION 2: HAZARDS IDENTIFICATION (Continued)**

**INHALATION:**

Diisocyanate vapors or mist can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose,



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sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction).

**CHRONIC INHALATION**

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms).

**SECTION 3: HAZARDOUS INGREDIENTS**

<u>Name</u>	<u>CAS NO.</u>	<u>% wt/wt</u>
4,4'-Diphenylmethane Diisocyanate (MDI) and homologues of MDI	101-68-8 9016-87-9	16-20

**SECTION 4: FIRST AID MEASURES**

**EYES:** Immediately flush eyes gently with water for at least 15 minutes, while holding open upper and lower lids. Product reacts with moisture in eye! Immediately seek medical attention.

**SKIN:** Remove contaminated clothing. Blot or brush the product away, prior to washing the exposed area with water. The cured product on the skin is rarely a cause of irritation (If it does, seek medical attention). The process of trying to remove the cured product may cause irritation.

**INGESTION:** SEEK IMMEDIATE MEDICAL ATTENTION! DELAYED TREATMENT MAY RESULT IN FATALITY. Do Not Induce Vomiting. Rinse mouth out with water. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

**INHALATION:** Move to an area free from further exposure. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

**SECTION 5: FIRE-FIGHTING MEASURES (ERG CODE 171)**

**FLASH POINT & METHOD USED:**

ASTM D93 293°F (145°C)

**EXTINGUISHING MEDIA:**

Dry Chemical, CO<sub>2</sub>, Foam or Water Fog

**SPECIAL FIRE FIGHTING PROCEDURES:**

Do not scatter material with high pressure water streams. Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous. Closed container



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may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Fire or intense heat will decompose the product into CO<sub>2</sub>, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.

**SECTION 6: ACCIDENTAL RELEASE MEASURES ( ERG CODE 171)**

**ACCIDENTAL RELEASE MEASURES:** Where exposure level is known, wear approved respirator suitable for the level of exposure. If exposure level is unknown, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing in section 8, wear impermeable boots.

**CLEAN-UP PROCEDURES:** Remove sources of ignition. Stop and contain / dam the spill. Absorb spill with inert material (vermiculite / diatomaceous earth). Shovel material into appropriate container for disposal.

**SECTION 7: HANDLING AND STORAGE**

**HANDLING:**

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection.

Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

**STORAGE:**

Keep in manufacturer's sealed nitrogen packed pail. Maintain storage temperatures between 65°F to 86°F (18°C to 30°C).

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**4,4'- Diphenylmethane Diisocyanate:**

ACGIH PEL-TWA: 0.005 ppm  
NIOSH Ceiling: 0.02ppm at 10 minutes  
OSHA PEL (vacated)CEILING: 0.02 ppm, 0.2mg/m<sup>3</sup>

**ENGINEERING CONTROLS:**

Normal room ventilation is usually adequate under normal use. Local exhaust



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should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program.

### INHALATION:

Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyper reactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

### CHRONIC INHALATION

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could

### CHRONIC INHALATION (CONTINUED)

be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

### RESPIRATORY PROTECTION:

Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or (b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter



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combination cartridge (OV/P100).

EYE PROTECTION: Safety goggles or face shield

SKIN PROTECTION: Use gloves; wear protective clothing to prevent skin contact. In cured form, the product is difficult to remove from skin and hair.

WORK HYGIENIC PRACTICES: Use good hygiene practices when handling this material including changing and laundering of work clothes after use.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: Dark Brown Liquid  
ODOR: Slightly musty odor  
ODOR THRESHOLD: Not available  
PHYSICAL STATE: Liquid  
pH: Neutral  
MELTING PT: <- 4°F (<- 20°C)  
FLASH POINT (CC): 293°F (145°C)  
EVAPORATION RATE: Not available  
FLAMMABILITY: Non-flammable  
UPPER FLAMMABILITY LIMITS: Not Applicable

LOWER FLAMMABILITY LIMITS: Not applicable  
VAPOR PRESSURE: 0.0006 mm Hg @ 40°C  
SPECIFIC GRAVITY (H<sub>2</sub>O=1): 1.05-1.10  
BULK DENSITY: 8.76-9.3 lbs/gal  
SOLUBILITY (H<sub>2</sub>O): None  
PARTITION COEFFICIENT: Not available  
AUTO-IGNITION TEMPERATURE: Not available  
DECOMPOSITION TEMPERATURE: <212°F (<100°C)

**SECTION 10: STABILITY AND REACTIVITY**

STABILITY: Contact with moisture or temperatures above 350° F (177° C) will cause polymerization.

CONDITIONS TO AVOID (STABILITY): Will polymerize with heat and/or moisture.

INCOMPATIBILITY (MATERIAL TO AVOID): Amines, Strong Bases, Alcohols, Copper Alloys, Liquid Chlorine. Water- until ready to react.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Fire or intense heat will decompose the product into CO<sub>2</sub>, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.

During normal polymerization CO<sub>2</sub> is produced.

HAZARDOUS POLYMERIZATION: During normal polymerization CO<sub>2</sub> is produced.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**CARCINOGENICITY:**

**4,4'-Diphenylmethane Diisocyanate**

IARC: Group 3 (not classifiable as to its carcinogenicity in humans)

EPA- CBD

MAK: 4



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**ACUTE TOXICITY**

**4,4'-Diphenylmethane Diisocyanate**

Oral LD50 (rat) >5800 mg/kg

Inhalation LC50 (rat) : 14ppm/4hrs

Dermal LD50 (rabbit) : >16 mL/kg

**SECTION 12: ECOLOGICAL INFORMATION**

Does not Bioaccumulate (All Ingredients)

Biodegrade to 0% in 28 days (4,4'- Diphenylmethane Diisocyanate)

Biodegrade to 70% compressive strength in 80 years (cured foam state)

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

**Empty Container Precautions**

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal. Dispose of per local, state and federal guidelines as required by your specific local. This product in its cured foam state is inert and non-toxic.

**SECTION 14: TRANSPORT INFORMATION**

Not regulated for transportation

**SECTION 15: REGULATORY INFORMATION**

**U.S. FEDERAL REGULATIONS**

Ingredient	TSCA	CERCLA RQ	SARA	
			302	313
4,4'- Diphenylmethane Diisocyanate	Yes	5000 lbs	No	Yes

TSCA: All ingredients are listed in or exempt from the TSCA Master Inventory File

**WHMIS:**

All ingredients are listed on the CEPA Domestic Substances List (DSL)

Ingredient Disclosure List (IDL), the following components are on the list:

4,4'- Diphenylmethane Diisocyanate 101-68-8



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**SECTION 16: OTHER INFORMATION**

NFPA HAZARD CLASSIFICATION:

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1

HMIS:

HEALTH: 2 FLAMMABILITY: 1 PHYSICAL HAZARD: 1

Do not use this product unless trained to do so.