

1. Product and Company Identification

Material name	SEALANT 2XH-SF
Version #	01
Issue date	02-14-2013
Revision date	02-14-2013
Supersedes date	12-07-2011
Chemical name	Phenolic Resin
Chemical description	Fibrous Resin Mixture
CAS #	Mixture
Product code	800-0037
Product use	Industrial Leak Sealant
Manufacturer information	
Manufacturer/Supplier	Team Industrial Services, Inc. 200 Hermann Drive, Alvin, Texas 77511
Emergency Contact	CHEMTREC - 24 HOURS USA: CHEMTREC: 800-424-9300 International: 703-527-3887 (Collect)

2. Hazards Identification

Physical state	Liquid.
Appearance	Black pliable semi-solid with phenolic odor.
Emergency overview	DANGER May cause eye, skin and digestive tract burns. May cause severe respiratory tract irritation. Harmful if inhaled, absorbed through skin, or swallowed. May cause damage to the liver and kidneys.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	May cause eye burns. May cause permanent eye injury.
Skin	May cause skin burns. Harmful if absorbed through skin. Components of the product may be absorbed into the body through the skin. The product contains organic solvents which may be absorbed into the body by skin contact and cause permanent damage to the nervous system, including the brain.
Inhalation	May cause severe respiratory tract irritation. May cause burns in mucous membranes, throat, esophagus and stomach. Harmful if inhaled. When cured: Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the respiratory tract.
Ingestion	May cause digestive tract burns. Harmful if swallowed. Components of the product may be absorbed into the body by ingestion.
Target organs	Blood. Central nervous system. Digestive tract. Eyes. Kidneys. Liver. Lungs. Mucous membranes. Respiratory system. Skin.
Chronic effects	Danger of serious damage to health by prolonged exposure. May cause damage to the liver and kidneys. Phenolic resin releases formaldehyde and formaldehyde has carcinogenic potential and is a known skin and respiratory sensitizer.
Signs and symptoms	Unconsciousness. Coughing. Shortness of breath. Discomfort in the chest. Irritation of nose and throat. Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.
Potential environmental effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Aluminium hydroxide	21645-51-2	25-50
Aluminum oxide	1344-28-1	25-50
Phenol, polymer with formaldehyde	9003-35-4	10-25
Ethanol	64-17-5	5-10
Graphite	7782-42-5	5-10
Carbon fiber	7440-44-0	<5
m-Cresol	108-39-4	<5
p-Cresol	106-44-5	<5
2,6-Xylenol	576-26-1	<1
Hexamethylenetetramine	100-97-0	<1
Phenol	108-95-2	<1
o-Ethylphenol	90-00-6	<1

Composition comments All concentrations are in percent by weight.

4. First Aid Measures

First aid procedures

Eye contact	Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.
Inhalation	If breathing stops, provide artificial respiration. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious. Only induce vomiting at the instruction of medical personnel. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Get medical attention immediately.

Notes to physician Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

General advice Chemical burns must be treated by a physician.

5. Fire Fighting Measures

Flammable properties Combustible liquid. Intensive heat and fire may release toxic and corrosive gases.

Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media No restrictions known.

Protection of firefighters

Specific hazards arising from the chemical Solvent vapors may form explosive mixtures with air. By heating and fire, corrosive vapors/gases may be formed.

Protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire fighting equipment/instructions In the event of fire, cool tanks with water spray. Move containers from fire area if you can do it without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

Hazardous combustion products Aluminum oxides. Carbon oxides. Silicon oxides. Formaldehyde.

6. Accidental Release Measures

Personal precautions	Ventilate closed spaces before entering. Avoid inhalation of vapors and contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate protective equipment and clothing during clean-up. See Section 8 of the MSDS for Personal Protective Equipment.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After removal flush contaminated area thoroughly with water. This material and its container must be disposed of as hazardous waste. Never return spills to original containers for re-use.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Use only with adequate ventilation. Avoid inhalation of vapors and contact with skin and eyes. Wear approved safety goggles. Wear protective gloves and appropriate clothing to prevent skin contact. Observe good industrial hygiene practices. When cured: Avoid generation and spreading of dust.
Storage	Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feedingstuffs.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m ³	Respirable fraction.
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m ³	Respirable fraction.
Ethanol (CAS 64-17-5)	STEL	1000 ppm	
Graphite (CAS 7782-42-5)	TWA	2 mg/m ³	Respirable fraction.
m-Cresol (CAS 108-39-4)	TWA	20 mg/m ³	Inhalable fraction and vapor.
p-Cresol (CAS 106-44-5)	TWA	20 mg/m ³	Inhalable fraction and vapor.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	PEL	5 mg/m ³	Respirable fraction.
Carbon fiber (CAS 7440-44-0)	PEL	15 mg/m ³ 5 mg/m ³	Total dust. Respirable fraction.
Ethanol (CAS 64-17-5)	PEL	15 mg/m ³ 1900 mg/m ³ 1000 ppm	Total dust.
Graphite (CAS 7782-42-5)	PEL	5 mg/m ³ 15 mg/m ³	Respirable fraction. Total dust.
m-Cresol (CAS 108-39-4)	PEL	22 mg/m ³	
p-Cresol (CAS 106-44-5)	PEL	5 ppm 22 mg/m ³ 5 ppm	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Carbon fiber (CAS 7440-44-0)	TWA	15 millions of particle

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Graphite (CAS 7782-42-5)	TWA	15 millions of particle

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m3	
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Respirable.
Ethanol (CAS 64-17-5)	TWA	1880 mg/m3	
		1000 ppm	
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable.
m-Cresol (CAS 108-39-4)	TWA	22 mg/m3	
		5 ppm	
p-Cresol (CAS 106-44-5)	TWA	50 mg/m3	
		10 ppm	

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m3	Respirable.
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable.
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Respirable.
Ethanol (CAS 64-17-5)	STEL	1000 ppm	
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable.
m-Cresol (CAS 108-39-4)	TWA	10 mg/m3	
p-Cresol (CAS 106-44-5)	TWA	10 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m3	Respirable fraction.
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Respirable fraction.
Ethanol (CAS 64-17-5)	STEL	1000 ppm	
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
m-Cresol (CAS 108-39-4)	TWA	5 ppm	
p-Cresol (CAS 106-44-5)	TWA	5 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m3	Total dust.
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Respirable dust.
Ethanol (CAS 64-17-5)	TWA	1880 mg/m3	
		1000 ppm	
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable dust.
m-Cresol (CAS 108-39-4)	TWA	22 mg/m3	
		5 ppm	
p-Cresol (CAS 106-44-5)	TWA	22 mg/m3	
		5 ppm	

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m3
Carbon fiber (CAS 7440-44-0)	TWA	10 mg/m3
Ethanol (CAS 64-17-5)	TWA	1900 mg/m3 1000 ppm
Graphite (CAS 7782-42-5)	TWA	10 mg/m3
m-Cresol (CAS 108-39-4)	TWA	22 mg/m3 5 ppm
p-Cresol (CAS 106-44-5)	TWA	22 mg/m3 5 ppm

Engineering controls Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. An eye wash and safety shower must be available in the immediate work area.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection Wear protective gloves. Butyl rubber gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Wear appropriate clothing to prevent possibility of skin contact.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Black pliable semi-solid with phenolic odor.
Physical state	Liquid.
Form	Pliable semi-solid.
Color	Black.
Odor	Phenolic.
Odor threshold	0.003 - 5 ppm (m-Cresol)
pH	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Boiling point	Not applicable.
Melting point/Freezing point	Not applicable.
Solubility (water)	Slightly.
Specific gravity	Not available.
Flash point	160 °F (71.1 °C) Tag Closed Cup
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.
Partition coefficient (n-octanol/water)	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Flames and sparks.
Incompatible materials	Strong oxidizers, strong acids, and strong bases. Strong reducing agents.

Hazardous decomposition products	Oxides of aluminum. Carbon oxides. Silicon oxides. Formaldehyde. Unidentified organic compounds.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
Aluminium hydroxide (CAS 21645-51-2)		
Acute		
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Carbon fiber (CAS 7440-44-0)		
Acute		
<i>Oral</i>		
LD50	Rat	> 10000 mg/kg
Ethanol (CAS 64-17-5)		
Acute		
<i>Inhalation</i>		
LC50	Mouse	39 mg/l, 4 Hours
	Rat	30000 mg/m3
	<i>Oral</i>	
LD50	Rat	11.5 g/kg
Graphite (CAS 7782-42-5)		
Acute		
<i>Oral</i>		
LD50	Rat	> 10000 mg/kg
m-Cresol (CAS 108-39-4)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	620 mg/kg
<i>Oral</i>		
LD50	Rat	242 mg/kg
p-Cresol (CAS 106-44-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	300 mg/kg
<i>Oral</i>		
LD50	Rat	207 mg/kg
Sensitization	Not a skin sensitizer.	
Acute effects	May cause eye, skin and respiratory tract irritation. May cause severe respiratory tract irritation. Harmful if inhaled, absorbed through skin, or swallowed. May cause damage to the liver and kidneys.	
Local effects	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.	
US. ACGIH Threshold Limit Values		
m-Cresol (CAS 108-39-4)	Can be absorbed through the skin.	
p-Cresol (CAS 106-44-5)	Can be absorbed through the skin.	
Chronic effects	Danger of serious damage to health by prolonged exposure. May cause damage to the liver and kidneys. When cured: Phenolic resin releases formaldehyde and formaldehyde has carcinogenic potential and is a known skin and respiratory sensitizer.	
Carcinogenicity	Not classified.	

ACGIH Carcinogens

Aluminium hydroxide (CAS 21645-51-2)

Aluminum oxide (CAS 1344-28-1)

Ethanol (CAS 64-17-5)

m-Cresol (CAS 108-39-4)

p-Cresol (CAS 106-44-5)

A4 Not classifiable as a human carcinogen.

A4 Not classifiable as a human carcinogen.

A3 Confirmed animal carcinogen with unknown relevance to humans.

A4 Not classifiable as a human carcinogen.

A4 Not classifiable as a human carcinogen.

Epidemiology	None known.
Mutagenicity	Contains a substance which may have a mutagenic effect.
Neurological effects	May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue) and/or damage.
Reproductive effects	Contains no ingredient listed as toxic to reproduction.
Teratogenicity	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Further information	Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

12. Ecological Information

Ecotoxicological data

Components		Species	Test Results
Ethanol (CAS 64-17-5)			
Aquatic			
Algae Fish	EC50	Freshwater algae	275 mg/l, 72 Hours
		Marine water algae	1970 mg/l
Invertebrate	LC50	Fathead minnow (<i>Pimephales promelas</i>)	> 100 mg/l, 96 hours
		Freshwater fish	11200 mg/l, 96 Hours
m-Cresol (CAS 108-39-4)	EC50	Freshwater invertebrate	5012 mg/l, 48 Hours
Aquatic		Marine water invertebrate	857 mg/l, 48 Hours
Crustacea			
Fish			
	EC50	Scud (<i>Gammarus fasciatus</i>)	7 mg/l, 48 hours
p-Cresol (CAS 106-44-5)	LC50	Rainbow trout, donaldson trout (<i>Oncorhynchus mykiss</i>)	8.9 mg/l, 96 hours
Aquatic			
Crustacea			
Fish			
	EC50	Water flea (<i>Daphnia magna</i>)	7.7 mg/l, 48 hours
	LC50	Fish (<i>Lepidocephalichthyes guntea</i>)	6.15 - 7.96 mg/l, 96 hours

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Environmental effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability The product contains inorganic compounds which are not biodegradable.

Bioaccumulation / Accumulation No data available on bioaccumulation.

Partition coefficient

Ethanol (CAS 64-17-5)

-0.31

p-Cresol (CAS 106-44-5)

1.94

m-Cresol (CAS 108-39-4)

1.96

Mobility in environmental media The product is slightly soluble in water. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.

13. Disposal Considerations

Waste codes Not regulated.

Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Not regulated as a hazardous material by DOT.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

m-Cresol (CAS 108-39-4)

p-Cresol (CAS 106-44-5)

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Aluminum oxide (CAS 1344-28-1) 1.0 %

m-Cresol (CAS 108-39-4) 1.0 %

p-Cresol (CAS 106-44-5) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Aluminum oxide (CAS 1344-28-1) Listed.

m-Cresol (CAS 108-39-4) Listed.

p-Cresol (CAS 106-44-5) Listed.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

m-Cresol: 100

p-Cresol: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CFR 355, Appendix A) No

Section 311/312 (40 CFR 370) Yes

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15) Not controlled

Canadian regulations This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS status Controlled

WHMIS classification B3 - Combustible Liquids
D1A - Immediate/Serious-VERY TOXIC
D2B - Other Toxic Effects-TOXIC
E - Corrosive

WHMIS labeling



Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

Aluminum oxide (CAS 1344-28-1)	Listed.
Carbon fiber (CAS 7440-44-0)	Listed.
Ethanol (CAS 64-17-5)	Listed.
Graphite (CAS 7782-42-5)	Listed.
m-Cresol (CAS 108-39-4)	Listed.
p-Cresol (CAS 106-44-5)	Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US - New Jersey RTK - Substances: Listed substance

Aluminum oxide (CAS 1344-28-1)	Listed.
Carbon fiber (CAS 7440-44-0)	Listed.
Ethanol (CAS 64-17-5)	Listed.
Graphite (CAS 7782-42-5)	Listed.
m-Cresol (CAS 108-39-4)	Listed.
p-Cresol (CAS 106-44-5)	Listed.

US. Massachusetts RTK - Substance List

Aluminum oxide (CAS 1344-28-1)	Listed.
Ethanol (CAS 64-17-5)	Listed.
Graphite (CAS 7782-42-5)	Listed.
m-Cresol (CAS 108-39-4)	Listed.
p-Cresol (CAS 106-44-5)	Listed.

US. New Jersey Worker and Community Right-to-Know Act

Aluminum oxide (CAS 1344-28-1)	500 lbs
m-Cresol (CAS 108-39-4)	500 lbs
p-Cresol (CAS 106-44-5)	500 lbs

US. Pennsylvania RTK - Hazardous Substances

Aluminum oxide (CAS 1344-28-1)	Listed.
Ethanol (CAS 64-17-5)	Listed.
Graphite (CAS 7782-42-5)	Listed.
m-Cresol (CAS 108-39-4)	Listed.
p-Cresol (CAS 106-44-5)	Listed.

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.
I - Safety Glasses, Gloves, Dust, Vapor Respirator

HMIS® ratings

Health: 3*
Flammability: 2
Physical hazard: 0
Personal protection: I

NFPA ratings

Health: 3
Flammability: 2
Instability: 0

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.