



Duquesne Light

Nuclear Group
P.O. Box 4
Shippingport, PA 15077-0004

Telephone (412) 393-6000

February 13, 1986

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Attn: Dr. Thomas E. Murley, Regional Administrator
Region I
631 Park Avenue
King of Prussia, PA 19406

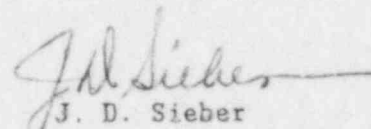
Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
IE Bulletin 82-02

Gentlemen:

A supplemental response to IE Bulletin 82-02 "Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of PWR Plants" was requested in NRC Inspection Report 85-17 (Unresolved Item 85-17-09). The item specifically requested a description of the types and compositions of fastener lubricants and injection sealant materials that have been used in the reactor coolant pressure boundary. At Beaver Valley Power Station, Unit 1, Neolube and Fel-Pro N-5000 products have been used as lubricants and Furmanite products have been used as injection sealant materials. Attached are the manufacturers Material Safety Data Sheets for these products which describe the composition of each product.

If you have any questions concerning this response, please contact my office.

Very truly yours,


J. D. Sieber
Senior Manager, Nuclear

Attachment

cc: W. M. Troskoski, Resident Inspector
U. S. Nuclear Regulatory Commission
Beaver Valley Power Station
Shippingport, PA 15077

U. S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, DC 20555

Director, Safety Evaluation and Control
P. O. Box 26666
One James River Plaza
Richmond, VA 23261

8603040395 860213
PDR ADDCK 05000334
G PDR

11
IE 11

SECTION I SOURCE AND NOMENCLATURE

MANUFACTURER'S NAME Huron Industries Inc.	EMERGENCY TELEPHONE NO. (313) 984-4213
ADDRESS (Number, Street, City, State, ZIP Code) P.O. Box 104, 3905 32nd St., Port Huron, MI 48060	
TRADE NAME AND SYNONYMS NEOLUBE NO. 1, NEOLUBE No. 2	CHEMICAL FAMILY Graphite/Isopropanol
CHEMICAL NAME AND SYNONYMS Graphite Dispersion in IPA	FORMULA Graphite/Isopropanol

SECTION II HAZARDOUS INGREDIENTS

BASIC MATERIAL	APPROXIMATE OR MAXIMUM % WT. OR VOL.	ESTABLISHED OSHA STANDARD (TLV)	LD ₅₀		LC ₅₀	
			ORAL	PERCUT.	SPECIES	CONC
Isopropanol	Approx 93%	400 ppm				
Butyl Alcohol	Approx 1%	100 ppm				
Cellosolve	Approx 1%	200 ppm				
Hexylene Glycol	" 1%		4470	mg/kg	rat	

SECTION III PHYSICAL DATA

BOILING POINT	OF.	VAPOR PRESSURE	mm Hg.
MELTING POINT	OF.	VAPOR DENSITY (Air=1)	
SPECIFIC GRAVITY (H ₂ O=1)	6.6 lb/gal	EVAPORATION RATE (B _{Ace} =1)	1.6
SOLUBILITY IN WATER Pts/100 pts H ₂ O	Negligible	VOLATILE	% Vol. 96 % Wt. Approx.
APPEARANCE AND ODOR	Dark grey fluid; odor of isopropanol		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	52°F	FLAMMABLE (EXPLOSIVE) LIMITS	UPPER
METHOD USED	Closed cup		LOWER
EXTINGUISHING MEDIA	Foam, carbon dioxide, dry chemical		
SPECIAL FIRE FIGHTING PROCEDURES	None		
UNUSUAL FIRE AND EXPLOSION HAZARDS	None		

PRODUCT DESIGNATION NEOLUBE NO. 1, NEOLUBE NO. 2

SECTION V HEALTH HAZARD DATA

TOXIC LEVEL	See Section II	CARCINOGENIC	No
PRINCIPAL ROUTES OF ABSORPTION		SKIN AND EYE IRRITATION	See below
RELEVANT SYMPTOMS OF EXPOSURE	Irritation of eyes, nose and throat		
EFFECTS OF CHRONIC EXPOSURE	As above		
EMERGENCY AND FIRST AID PROCEDURES	Remove to fresh air. If ingested, call physician and induce vomiting.		

SECTION VI REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY	Stable
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION	Will not occur
INCOMPATIBILITY (Materials to Avoid)	Very strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Remove all sources of ignition. Wipe up surplus and clean with ethyl alcohol and/or detergent.
WASTE DISPOSAL METHOD	As permitted by local regulations

SECTION VIII SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS		PROTECTIVE EQUIPMENT (Specify types)
LOCAL EXHAUST		EYE Advisable
MECHANICAL (General)	X	GLOVES Advisable
SPECIAL		RESPIRATOR
OTHER PROTECTIVE EQUIPMENT		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE	As for isopropyl alcohol. Avoid ignition.
OTHER PRECAUTIONS	

Signature John W. Boukamp
Date January 1, 1985

Address
P.O. Box 104,
Port Huron, Michigan 48060

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-0-539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Shap Road, Kendal, Cumbria, LA9 6RU, England		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS FSC-N-3B
CHEMICAL FAMILY Filled EPDM Elastomeric Compound	FORMULA Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.4
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	<1.0%
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ = 1)	N/A
SOLUBILITY IN WATER	NO		
APPEARANCE AND ODOR Brown Elastomer Stick: 7.6cm X 1.8cm diameter - No odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NONE	FLAMMABLE LIMITS	Let	Uel
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	NONE (Will Not Sustain Flame)			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE N/A

EFFECTS OF OVEREXPOSURE N/A

EMERGENCY AND FIRST AID PROCEDURES N/A

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATIBILITY (Materials to avoid) NONE

HAZARDOUS DECOMPOSITION PRODUCTS NONE

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED N/A

WASTE DISPOSAL METHOD Usual Precautions for any Elastomeric Product - Remove To Open Tip - Do Not Incinerate within Enclosed Building

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) NONE

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General) /	OTHER /

PROTECTIVE GLOVES NO EYE PROTECTION NO

OTHER PROTECTIVE EQUIPMENT No Special Precautions Required

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING NONE (Recommended Storage Temp. < 68°F)

OTHER PRECAUTIONS NONE



Fel-Pro Incorporated, Skokie, IL 60076
 7450 North McCormick Boulevard
 Telephones: (312) 701-4500 and 674-7700

MATERIAL SAFETY DATA SHEET

Form No. 1919-78 (2/78)

Essentially similar to U.S. Dept. of Labor Form No. LSB-00S-4, May 1969.

SECTION I	
MANUFACTURER'S NAME FEL-PRO INCORPORATED	EMERGENCY TELEPHONE NO. 312 - 761-4500
ADDRESS (Number, Street, City, State, and ZIP Code) 7450 N. McCORMICK BLVD. - SKOKIE, ILLINOIS 60076	
CHEMICAL NAME AND SYNONYMS N/A	TRADE NAME AND SYNONYMS FEL-PRO N-5000
CHEMICAL FAMILY N/A	FORMULA Nickel & Graphite in Petroleum Carrier

SECTION II—HAZARDOUS INGREDIENTS					
PAINTS PRESERVATIVES AND SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III—PHYSICAL DATA			
BOILING POINT (°F.)	500°F	SPECIFIC GRAVITY (H ₂ O=1)	1.2
VAPOR PRESSURE (mmHg.)	Nil	PERCENT VOLATILE BY VOLUME (%)	Nil
VAPOR DENSITY AIR=1	N/A	EVAPORATION RATE (.....=1)	Nil
SOLUBILITY IN WATER	Nil		
APPEARANCE AND ODOR grey paste - slight petroleum odor			

SECTION IV—FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT (Method Used) 440 F ASTM D-92-57	FLAMMABLE LIMITS N/A	Lel	Uel
EXTINGUISHING MEDIA CO₂, dry chemicals, foam			
SPECIAL FIRE FIGHTING PROCEDURES same as for petroleum fires			
UNUSUAL FIRE AND EXPLOSION HAZARDS none			

SECTION V—HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

unknown

EFFECTS OF OVEREXPOSURE

not determined

EMERGENCY AND FIRST AID PROCEDURES

If ingested, consult physician immediately.

If in eyes, wash out with water, consult physician.

SECTION VI—REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	XX	
INCOMPATIBILITY (Materials to avoid) Strong oxidizers, chemically unstable compounds			
HAZARDOUS DECOMPOSITION PRODUCTS CO, CO ₂			
HAZARADOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	XX	

SECTION VII—SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wipe up with rags, shovel, scrape. Finish cleaning with detergent and water or high flash point cleaner (with proper ventilation).

WASTE DISPOSAL METHOD

normal for grease products

SECTION VIII—SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)				N/A
VENTILATION	LOCAL EXHAUST	N/A	SPECIAL	N/A
	MECHANICAL (General)	N/A	OTHER	N/A
PROTECTIVE GLOVES			EYE PROTECTION	
not needed			recommended but not needed	
OTHER PROTECTIVE EQUIPMENT				
N/A				

SECTION IX—SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

normal storage and handling

OTHER PRECAUTIONS

N/A

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-0-539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Shap Rd., Kendal, Cumbria, LA9 6RU, England		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS F-700
CHEMICAL FAMILY Silicone Elastomer - Asbestos Fibre Mix	FORMULA Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS	NONE		BASE METAL	NONE	
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
NONE					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.4
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	NONE
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	NO		
APPEARANCE AND ODOR Grey Fibrous Stick: 7.6cm X 1.8cm diameter - No odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NONE	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	NONE (Will Not Sustain Flame)			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	2 Airborne Fibres Ove 5um/c.c./8 hours
EFFECTS OF OVEREXPOSURE	Recognised Carcinogen
EMERGENCY AND FIRST AID PROCEDURES	N/A

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)		NONE	
HAZARDOUS DECOMPOSITION PRODUCTS		Thermal decomplstion may evolve airborne fibre particles	
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	N/A
WASTE DISPOSAL METHOD	Usual precautions for Fibrous Packing Material - Wrap securely and remove with solid waste materials

SECTION VIII - SPECIAL PROTECTION INFORMATION			
RESPIRATORY PROTECTION (Specify type)		Mechanical Filter Facemasks if Particles Evolved	
VENTILATION	LOCAL EXHAUST	SPECIAL	
	MECHANICAL (General)	OTHER	
PROTECTIVE GLOVES	NO	EYE PROTECTION	NO
OTHER PROTECTIVE EQUIPMENT	NONE		

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	NONE
OTHER PRECAUTIONS	NONE

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-0-539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Shap Road, Kendal, Cumbria, LA9 6RU, England		
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS FSC-N-6A	
CHEMICAL FAMILY Silicone Elastomer -Asbestos Fibre Mix	FORMULA Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
NONE					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.4
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	None
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	NO		
APPEARANCE AND ODOR Grey Fibrous Stick: 7.6cm X 1.8cm diameter - No Odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NONE	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	None (Will not sustain flame)			
UNUSUAL FIRE AND EXPLOSION HAZARD:	NONE			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	2 Airborne Fibres Ove 5um/c.c./8 hours
EFFECTS OF OVEREXPOSURE	Recognised Carcinogen
EMERGENCY AND FIRST AID PROCEDURES	N/A

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATABILITY <i>(Materials to avoid)</i>	NONE		
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition may evolve airborne fibre particles		
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	N/A
WASTE DISPOSAL METHOD	Usual precautions for Fibrous Packing Material - Wrap securely and remove with solid waste materials

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION <i>(Specify type)</i> Mechanical Filter Facemasks if Particles Evolved			
VENTILATION	LOCAL EXHAUST	SPECIAL	
	MECHANICAL <i>(General)</i>	OTHER	
PROTECTIVE GLOVES	No	EYE PROTECTION	NO
OTHER PROTECTIVE EQUIPMENT	NONE		

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	NONE
OTHER PRECAUTIONS	NONE

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-0-539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Shap Road, Kendal, Cumbria, LA9 6RU, England		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS FSC-N-6B
CHEMICAL FAMILY Graphite - Silicone Elastomer -	FORMULA Synthetic Fibre Mix	Proprietary

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.4
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	NONE
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ = 1)	N/A
SOLUBILITY IN WATER	NO		
APPEARANCE AND ODOR Black Fibrous Stick: 7.6cm X 1.8cm diameter - No odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NONE	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	NONE (Will Not Sustain Flame)			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	N/A
EFFECTS OF OVEREXPOSURE	N/A
EMERGENCY AND FIRST AID PROCEDURES	N/A

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY <i>(Materials to avoid)</i>		NONE	
HAZARDOUS DECOMPOSITION PRODUCTS			
NONE			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	N/A
WASTE DISPOSAL METHOD	
Usual Precautions For Any Elastomeric/Synthetic Fibre Product Remove to Open Tip - Do Not Incinerate within Enclosed Building	

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION <i>(Specify type)</i>			NONE
VENTILATION	LOCAL EXHAUST		SPECIAL
	MECHANICAL <i>(General)</i>	/	OTHER
PROTECTIVE GLOVES		NO	EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT			
No Special Precautions Required			

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	NONE
OTHER PRECAUTIONS	NONE

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-0-539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Shap Road, Kendal, Cumbria, LA9 6RU Eng.		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS FSC-N-7A
CHEMICAL FAMILY Asbestos, Graphite & Grease Mix.	FORMULA Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	450	SPECIFIC GRAVITY (H ₂ O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT VOLATILE BY VOLUME (%)	15
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ =1)	
SOLUBILITY IN WATER	nil		
APPEARANCE AND ODOR Black, Sticky, extruded rod			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	450°	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	CO ₂ , Halon			
SPECIAL FIRE FIGHTING PROCEDURES	NONE			
UNUSUAL FIRE AND EXPLOSION HAZARDS				
Upon injection at over 450°, grease cooks off with a possibility of flashing.				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE **2 airborne fibers over 5 microns/cc/8 hours**

EFFECTS OF OVEREXPOSURE **Recognized carcinogen**

EMERGENCY AND FIRST AID PROCEDURES

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
N/A	STABLE		

N/A

INCOMPATIBILITY (Materials to avoid)

Solvents remove grease making airborne particles possible.

HAZARDOUS DECOMPOSITION PRODUCTS

Flammability light, hydrocarbons evolved under heat.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
N/A	WILL NOT OCCUR		

N/A

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Pick up with paper towels, remove residue with solvent.

WASTE DISPOSAL METHOD

Wrap and remove with solid waste materials.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES

EYE PROTECTION

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING **Store under 100°F**

OTHER PRECAUTIONS **Inject under steam to prevent flashing of grease as it cooks off.**

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-(0)539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Shap Road, Kendal, Cumbria LA9 6RU England		
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS FSC-N-8A	
CHEMICAL FAMILY Filled Silicone Elastomeric Compound	FORMULA Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS	NONE		BASE METAL	NONE	
CATALYST	NONE		ALLOYS	NONE	
VEHICLE	NONE		METALLIC COATINGS	NONE	
SOLVENTS	NONE		FILLER METAL PLUS COATING OR CORE FLUX	NONE	
ADDITIVES	NONE		OTHERS	NONE	
OTHERS	NONE			NONE	
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
NONE					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.4
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	NONE
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ = 1)	N/A
SOLUBILITY IN WATER	NO		
APPEARANCE AND ODOR Grey Elastomeric Stick : 7.6cm X 1.8cm diameter - No Odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NONE	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	NONE (will not sustain flame)			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Furmanite International Ltd.		EMERGENCY TELEPHONE NO. 44-0-539-29009
ADDRESS (Number, Street, City, State, and ZIP Code) Furman House, Shap Road, Kendal, Cumbria, England LA9 6RU		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS FSC-N-9A
CHEMICAL FAMILY Phenol-novolak resin combined with synthetic fibers and fillers		FORMULA Proprietary

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Ethanol				22.5	N/A

SECTION III - PHYSICAL DATA

BOILING POINT (°F.) (Ethanol)	160	SPECIFIC GRAVITY (H ₂ O=1)	1.2-1.3
VAPOR PRESSURE (mm Hg.) (Ethanol)	58	PERCENT. VOLATILE BY VOLUME (%) (Ethanol)	Not
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	known
SOLUBILITY IN WATER	N/A	Auto ignition temp. °F	800
APPEARANCE AND ODOR Black semi-solid with alcohol like odor (Ethanol)			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) (Ethanol) 266°F DIN 51 758	FLAMMABLE LIMITS	Lel	Uel
		3.5 vol%	15 vol%
EXTINGUISHING MEDIA Water, CO ₂ , Foam, Dry Powder			
SPECIAL FIRE FIGHTING PROCEDURES Not necessary			
UNUSUAL FIRE AND EXPLOSION HAZARDS None			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

If in contact with skin or mucous membranes, irritations of variable degrees are possible. Inhalation of vapours can lead to drowsiness.

EMERGENCY AND FIRST AID PROCEDURES

Irrigate eyes with large quantities of water; if taken by mouth, medical aid must be sought. Remove all contaminated clothing.

Contaminated skin should be washed with large quantities of water and mild skin cleanser.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE		
INCOMPATIBILITY (Materials to avoid) None known			
HAZARDOUS DECOMPOSITION PRODUCTS None known			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR		

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

WASTE DISPOSAL METHOD

Disposal as per present regulations, i.e. incinerated in approved incinerator.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

Work area must be sufficiently ventilated.

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES	Yes	EYE PROTECTION
		Yes
OTHER PROTECTIVE EQUIPMENT		

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep away from foodstuffs

Cool storage

OTHER PRECAUTIONS

CO 7 11 97 033