

FILE NAME: Rogers Corporation (ROG)

DATE: 1978 Jan 23

DOC#: ROG002

DOCUMENT DESCRIPTION: Material Safety Data Sheet

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

Form Approved
OMB No. 40-R1327

MATERIAL SAFETY DATA SHEET

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

1/23/78

SECTION I

MANUFACTURER'S NAME Rogers Corporation		EMERGENCY TELEPHONE NO. 203-774-9605
ADDRESS (Number, Street, City, State, and ZIP Code) Mill St., Manchester, CT 06040		
CHEMICAL NAME AND SYNONYMS N/A		TRADE NAME AND SYNONYMS RX 462
CHEMICAL FAMILY N/A	FORMULA N/A	

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)
Phenol		5 ppm in air
Asbestos Fiber (Bound)	50-55	*
* No ACGIH limit on bound asbestos		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.78
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ = 1)	N/A
SOLUBILITY IN WATER	negligible		
APPEARANCE AND ODOR			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used):	N/A	FLAMMABLE LIMITS	N/A	Lel	Uel
EXTINGUISHING MEDIA	Water, Foam, CO ₂ , Dry Chemical				
SPECIAL FIRE FIGHTING PROCEDURES	none				
UNUSUAL FIRE AND EXPLOSION HAZARDS	none				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

N/A - See Section II

EFFECTS OF OVEREXPOSURE

May cause skin irritation or dermatitis in sensitized individuals.

EMERGENCY AND FIRST AID PROCEDURES

Good personal hygiene. Avoid repeated or prolonged contact with the skin - wash with soap and water at first opportunity. Flush eyes with water for at least 15 minutes.

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

INCOMPATIBILITY (Materials to avoid)

HAZARDOUS DECOMPOSITION PRODUCTS

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

Vacuum up with vacuum containing exit air filter.

Avoid generating dust.

WASTE DISPOSAL METHOD

Place waste in labeled, sealed polyethylene bags and dispose of in an approved landfill site.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

Not normally required

VENTILATION

LOCAL EXHAUST

SPECIAL

MECHANICAL (General)

X

OTHER

PROTECTIVE GLOVES

none

EYE PROTECTION

none

OTHER PROTECTIVE EQUIPMENT

none

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid extremely rough handling which might generate dust which could contain unbound asbestos.

OTHER PRECAUTIONS

If dusting is observed, use N.I.O.S.H. approved, appropriate respirator.

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 Rogers Corporation		EMERGENCY TELEPHONE NO. 203-646-5500
ADDRESS (Number, Street, City, State, and ZIP Code) Mill Street, Manchester, CT 06040		
CHEMICAL NAME AND SYNONYMS N/A		TRADE NAME AND SYNONYMS RX 468
CHEMICAL FAMILY N/A	FORMULA N/A	

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)
Phenol (see attached sheet for TLV units)				1.0	5ppm
Asbestos Fiber (bound)				50	

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.72
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER		negligible	
APPEARANCE AND ODOR			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	N/A	Lel	Uel
EXTINGUISHING MEDIA water, foam, CO ₂ , dry chemical					
SPECIAL FIRE FIGHTING PROCEDURES none					
UNUSUAL FIRE AND EXPLOSION HAZARDS none					

SECTION V - HEALTH HAZARD... 1A	
THRESHOLD LIMIT VALUE	
EFFECTS OF OVEREXPOSURE May cause irritation, or dermatitis in sensitized individuals.	
EMERGENCY AND FIRST AID PROCEDURES Good personal hygiene. Avoid repeated or prolonged contact with the skin - wash with soap and water at first opportunity. Flush eyes with water for at least 15 minutes.	

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS (see attached sheet)			
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 Vacuum up - avoid generating dust.	
WASTE DISPOSAL METHOD Dispose of in an approved landfill site in accordance with federal, state and local regulations.	

SECTION VIII - SPECIAL PROTECTION INFORMATION		
RESPIRATORY PROTECTION (Specify type) not normally required		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General) X	OTHER
PROTECTIVE GLOVES	none	EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT none		

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Avoid extremely rough handling which might generate excessive dust.	
OTHER PRECAUTIONS	

Material Safety Data Sheet

RX 468

Section II

The 8 hour time weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air (OSHA exposure limits effective July 1, 1976).

The fibers in this product are bound in the polymer matrix at the time of shipment. Release of unbound asbestos over the permissible exposure limit is unlikely unless the material is subject to rough handling.

The grinding and machining of parts molded of asbestos containing materials is likely to liberate free fiber. Local exhausts should be used for all such operations. Use EPA approved dust collection equipment and dispose of the collected material in an approved landfill in accordance with federal, state and local regulations.

Section V

No TLV has been established for the molding compound, however phenol and formaldehyde vapors may be evolved during molding processes..

formaldehyde	3 ppm	8 hr. TWA (OSHA)
phenol	5 ppm	8 hr. TWA (OSHA)

Effects of Overexposure

Overexposure to vapors at elevated process temperatures may cause irritation to eyes, nose, throat, and skin. An allergic skin reaction to sensitized individuals is also a possibility.

Section VIII

If rough handling creates excessive dust, provide ventilation and respiratory protection as necessary to conform to OSHA regulations for airborne asbestos.

Provide adequate exhaust during molding to minimize exposure to irritating vapors.

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

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MATERIAL SAFETY DATA SHEET

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Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME <u>Rogers Corporation</u>		EMERGENCY TELEPHONE NO. <u>203-646-5500</u>
ADDRESS (Number, Street, City, State, and ZIP Code) <u>Mill Street, Manchester, CT 06040</u>		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS <u>RX 468</u>
CHEMICAL FAMILY <u>Phenolic Molding Compound</u>	FORMULA	

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)
Phenol				35	ppm
Formaldehyde				1.3	ppm
Asbestos Fiber (bound in polymer matrix)				55	
see attached sheet for TLV					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.72
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT. VOLATILE BY VOLUME (%)	6
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____/hr)	N/A
SOLUBILITY IN WATER	negligible		
APPEARANCE AND ODOR	black pellets, slight phenolic odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	N/A	Lel	Uel
EXTINGUISHING MEDIA	water, foam, CO ₂ , dry chemical				
SPECIAL FIRE FIGHTING PROCEDURES Decomposition in a fire may produce toxic fumes. Firefighters should be equipped with self contained breathing apparatus.					
UNUSUAL FIRE AND EXPLOSION HAZARDS none					

SECTION V - HEALTH HAZARD DATA :

THRESHOLD LIMIT VALUE

see attached sheet

EFFECTS OF OVEREXPOSURE

see attached sheet

EMERGENCY AND FIRST AID PROCEDURES

Good personal hygiene. Avoid repeated or prolonged contact with the skin - wash with soap and water at first opportunity. Flush eyes with water for at least 15 minutes.

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

INCOMPATIBILITY (Materials to avoid)

oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS

oxides of nitrogen, phenol, formaldehyde, ammonia, CO, CO₂ and traces of incompletely burned carbon products

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

normal clean-up

WASTE DISPOSAL METHOD

Dispose of in an approved landfill in accordance with federal, state and local regulations

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

see attached sheet

VENTILATION

LOCAL EXHAUST

see attached sheet

SPECIAL

MECHANICAL (General)

OTHER

PROTECTIVE GLOVES

EYE PROTECTION Safety glasses are recommended in all industrial operations.

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid extremely rough handling which might generate excessive dust.

OTHER PRECAUTIONS

Material Safety Data Sheet

RX 468

Section II

The 8 hour time weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air (OSHA exposure limits effective July 1, 1976).

The fibers in this product are bound in the polymer matrix at the time of shipment. Release of unbound asbestos over the permissible exposure limit is unlikely unless the material is subject to rough handling.

The grinding and machining of parts molded of asbestos containing materials is likely to liberate free fiber. Local exhausts should be used for all such operations. Use EPA approved dust collection equipment and dispose of the collected material in an approved landfill in accordance with federal, state and local regulations.

Section V

No TLV has been established for the molding compound, however phenol and formaldehyde vapors may be evolved during molding processes.

formaldehyde	3 ppm	8 hr. TWA (OSHA)
phenol	5 ppm	8 hr. TWA (OSHA)

Effects of Overexposure

Overexposure to vapors at elevated process temperatures may cause irritation to eyes, nose, throat, and skin. An allergic skin reaction to sensitized individuals is also a possibility.

Section VIII

If rough handling creates excessive dust, provide ventilation and respiratory protection as necessary to conform to OSHA regulations for airborne asbestos.

Provide adequate exhaust during molding to minimize exposure to irritating vapors.

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SECTION I

MANUFACTURER'S NAME Rogers Corporation	EMERGENCY TELEPHONE NO. 203-646-5500
ADDRESS (Number, Street, City, State, and ZIP Code) Mill St., Manchester, CT 06040	
CHEMICAL NAME AND SYNONYMS N/A	TRADE NAME AND SYNONYMS RX 468D
CHEMICAL FAMILY N/A	FORMULA N/A

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)
Phenol				1.0	5 ppm in air
Asbestos Fiber (bound)				50	*
*No ACGIH limit on bound asbestos					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H ₂ O=1)	1.69
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	negligible		
APPEARANCE AND ODOR			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	N/A	Lel	Uel
EXTINGUISHING MEDIA	Water, Foam, CO ₂ , Dry Chemical				
SPECIAL FIRE FIGHTING PROCEDURES	none				
UNUSUAL FIRE AND EXPLOSION HAZARDS	none				

SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	N/A - See Section II
EFFECTS OF OVEREXPOSURE	May cause skin irritation or dermatitis in sensitized individuals.
EMERGENCY AND FIRST AID PROCEDURES	Good personal hygiene. Avoid repeated or prolonged contact with the skin - wash with soap and water at first opportunity. Flush eyes with water for at least 15 minutes.

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS			
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	
Vacuum up with vacuum containing exit air filter.	
Avoid generating dust.	
WASTE DISPOSAL METHOD	Place waste in labeled, sealed polyethylene bags and dispose of in an approved landfill site.

SECTION VIII - SPECIAL PROTECTION INFORMATION		
RESPIRATORY PROTECTION (Specify type) Not normally required.		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General) X	OTHER
PROTECTIVE CLOVES	none	EYE PROTECTION : none
OTHER PROTECTIVE EQUIPMENT none		

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Avoid extremely rough handling which might generate dust which could contain unbound asbestos.
OTHER PRECAUTIONS	If dusting is observed, use N.I.O.S.H. approved, appropriate respirator.