

CHO-FORM® 5513, Part A

19-26-5513-0850

SDS Preparation Date (mm/dd/yyyy): 02/23/2018

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **CHO-FORM® 5513, Part A**

Product Code(s) : 19-26-5513-0850

Recommended use of the chemical and restrictions on use

: Conductive Form in Place Gasket.
No restrictions on use known.

Chemical family : Mixture of: Inorganic substances in powdered form; Siloxanes

SDS number : PHC-148

Name, address, and telephone number of the manufacturer:

Parker Hannifin Corp.

Chomerics Division
77 Dragon Court
Woburn, MA, USA
01888

Manufacturer's Telephone # : (781) 935-4850

24 Hr. Emergency Tel # : INFOTRAC: (800) 535-5053 (Within Continental US and Canada); (352)323-3500 (International)

Name, address, and telephone number of the supplier:

Refer to manufacturer

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Pasty liquid. Grey. Slight odor.

Most important hazards:

Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Hazard pictogram(s)

None required under U.S. OSHA Hazcom 2012 and Canadian WHMIS 2015 regulations.

Signal Word

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Hazard statement(s)

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Precautionary statement(s)

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

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Other hazards

Other hazards which do not result in classification:

Burning produces obnoxious and toxic fumes. When heated above 150°C in air, may release formaldehyde gas. May be mildly irritating to skin, eyes and respiratory system. Inhalation of fumes may result in metal fume fever, a flu-like illness. May cause gastrointestinal irritation. Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights. Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Copper	Not available.	7440-50-8	55.0 - 65.0
silver	Silver metal Argentum	7440-22-4	10.0 - 20.0
Octamethyltrisiloxane	Dimethyl-bis(trimethylsilyloxy) silane	107-51-7	< 5.0
The following ingredient may be released from the product only when heated above 150°C:			
formaldehyde	Methanal Methyl Aldehyde Methylene oxide	50-00-0	Not known.

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : If ingested, do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Consult a physician.
- Skin contact* : For skin contact, wash with soap and water while removing contaminated clothing. If irritation or symptoms develop, seek medical attention.
- Eye contact* : Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

- : Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
- Direct skin contact may cause slight or mild, transient irritation. Exposure may cause temporary irritation, redness or discomfort.
- Direct eye contact may cause slight or mild, transient irritation. Symptoms may include mild redness and swelling.
- If material is ingested, may cause irritation to mucous membranes. May cause nausea, stomach pain and vomiting.
- Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.
- Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.
- When heated above 150°C in air, may release formaldehyde gas. Formaldehyde is an eye and throat irritant and acute toxicant. Formaldehyde may cause sensitization by skin contact. Formaldehyde is classified as carcinogenic. Formaldehyde may cause mutations to non-reproductive (somatic) cells, based on animal data.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

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SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not classified as flammable. However, may burn if exposed to extreme heat and flame. When heated above 150°C in air, may release formaldehyde gas. Toxic fumes, gases or vapors may evolve on burning.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not classified as flammable.

Hazardous combustion products

- : Carbon oxides; Formaldehyde; Metal oxides; Silicon oxides; Other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Wear appropriate protective equipment. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

- : Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use inert, non-combustible absorbents to assist the pick up of material. Pick up and transfer to properly labeled containers. Contact the proper local authorities. For waste disposal, see Section 13 of the SDS.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): Copper (5000 lbs / 2270 kg); silver (1000 lbs / 454 kg)

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

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SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use with adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Avoid breathing dust, fume or vapors. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep containers closed when not in use. Wash thoroughly after handling.

Conditions for safe storage

- : Store in cool/well-ventilated place. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Keep away from incompatibles.

Incompatible materials

- : Strong oxidizing agents; Strong acids; Strong bases; Halogenated compounds

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Copper	0.2 mg/m ³ (fume); 1 mg/m ³ (Dust and mist)	N/Av	0.1 mg/m ³ (fume); 1 mg/m ³ (Dust and mist)	N/Av
silver	0.1 mg/m ³ (dust and fume)	N/Av	0.01 mg/m ³	N/Av
formaldehyde	0.1 ppm	0.3 ppm	0.75 ppm	2 ppm
Octamethyltrisiloxane	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : In case of insufficient ventilation wear suitable respiratory equipment. If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Seek advice from respiratory protection specialists.

Skin protection

- : Gloves impervious to the material are recommended. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear sufficient clothing to prevent skin contact.

Eye / face protection

- : Wear as appropriate: Tightly fitting safety goggles; Safety glasses with side shields.

Other protective equipment

- : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust, fume or vapors. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

- : Pasty liquid. grey

Odor

- : Slight odor.

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Odor threshold : N/Av
pH : N/Av
Melting/Freezing point : N/Av
Initial boiling point and boiling range : N/Av
Flash point : N/Av
Flashpoint (Method) : N/Av
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.) : N/Av
Upper flammable limit (% by vol.) : N/Av
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapor pressure : N/Av
Vapor density : N/Av
Relative density / Specific gravity : 3.4
Solubility in water : Insoluble.
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : N/Av
Auto-ignition temperature : N/Av
Decomposition temperature : N/Av
Viscosity : N/Av
Volatiles (% by weight) : N/Av
Volatile organic Compounds (VOC's) : N/Av
Absolute pressure of container : N/Av
Flame projection length : N/Av
Other physical/chemical comments : No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions. When heated above 150°C in air, may release formaldehyde gas.
Possibility of hazardous reactions : Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases; Halogenated compounds
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry ingestion : YES

Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath. Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde causes severe respiratory irritation, lung inflammation and pulmonary edema.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

- : Direct skin contact may cause slight or mild, transient irritation. Exposure may cause temporary irritation, redness or discomfort.

Sign and symptoms eyes

- : Direct eye contact may cause slight or mild, transient irritation. Symptoms may include mild redness and swelling.

Potential Chronic Health Effects

- : Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

Mutagenicity

- : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde may cause mutations to non-reproductive (somatic) cells, based on animal data.

Carcinogenicity

- : Not classifiable as a human carcinogen. No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP. Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde is classified as carcinogenic by IARC (Group 1), ACGIH (Group A2) and NTP (Group 2).

Reproductive effects & Teratogenicity

- : This product is not expected to cause reproductive or developmental effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer. Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde may cause sensitization by skin contact.

Specific target organ effects

- : According to the classification criteria of U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause target organ toxicity through single or repeated exposures.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : None known or reported by the manufacturer.

Toxicological data

- : Not classified for acute toxicity based on available data. No data is available on the product itself.

See below for individual ingredient acute toxicity data.

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<u>Chemical name</u>	<u>LC₅₀ (4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Copper	> 5.11 mg/L (dust) (No mortality)	> 2500 mg/kg	> 2000 mg/kg
silver	> 5.16 mg/L (dust) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
Octamethyltrisiloxane	> 22.6 mg/L (vapour) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
The following ingredient may be released from the product only when heated above 150°C:			
formaldehyde	287 ppm	800 mg/kg (rat) The estimated human lethal dose is: 317 - 475 mg/kg	300 mg/kg

Other important toxicological hazards

- : Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. Contains: Copper. The acute toxicity of copper to aquatic species varies drastically by the chemical form and correlates with the availability of free ionic copper. Aquatic toxicity is highly variable not only by organism but with physical and chemical characteristics of the water itself.

See the following tables for individual ingredient chronic ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC₅₀ / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper	7440-50-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
formaldehyde	50-00-0	6.7 mg/L (Striped bass)	≥ 48 mg/L/28-day (Japanese ricefish)	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC₅₀ / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper	7440-50-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
formaldehyde	50-00-0	5.8 mg/L (Daphnia magna)	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

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<u>Ingredients</u>	CAS No	<u>Toxicity to Algae</u>		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Copper	7440-50-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
formaldehyde	50-00-0	14.7 mg/L/24hr (Green algae)	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

Persistence and degradability

- : No data is available on the product itself.
Contains the following chemicals which are not readily biodegradable: Copper; silver; Octamethyltrisiloxane.

Bioaccumulation potential

- : The product itself has not been tested. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
formaldehyde (CAS 50-00-0)	0.35	3.0
Octamethyltrisiloxane (CAS 107-51-7)	6.6	3610; 5600 (Fish) (parent)

Mobility in soil : The product itself has not been tested.

Other Adverse Environmental effects

- : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

- : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.

Methods of Disposal

- : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

- : If the product becomes a waste, it may meet the criteria of a hazardous waste according to the US RCRA Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Copper	7440-50-8	Yes	5000 lbs / 2270 kg	None.	Yes	1%
silver	7440-22-4	Yes	1000 lb/454 kg	None.	Yes	1%
formaldehyde	50-00-0	Yes	100 lbs / 45.4 kg	500 lb TPQ	Yes	0.1%
Octamethyltrisiloxane	107-51-7	Yes	None.	None.	No	N/Ap

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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes:

None.

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Copper	7440-50-8	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
silver	7440-22-4	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
formaldehyde	50-00-0	Yes	Cancer (gas)	Yes	Yes	Yes	Yes	Yes	Yes
Octamethyltrisiloxane	107-51-7	No	N/Ap	No	No	Yes	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the NPRI:

Copper (Part 1, Group A Substance)

silver (Part 1, Group A Substance)

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Copper	7440-50-8	231-159-6	Present	Present	Not listed	KE-08896	Present	HSR002948
silver	7440-22-4	231-131-3	Present	Present	Not listed	KE-31261	Present	HSR003077
formaldehyde	50-00-0	200-001-8	Present	Present	(2)-482	KE-17074	Present	HSR001584, HSR001162, HSR001518, HSR001583 (dilution)
Octamethyltrisiloxane	107-51-7	203-497-4	Present	Present	(7)-476	98-3-930	Present	May be used as a single component chemical under an appropriate group standard.

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California

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CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
DOT: Department of Transportation
EC50: Effective Concentration 50%
EINECS: European Inventory of Existing Commercial chemical Substances
EPA: Environmental Protection Agency
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organisation
IECSC: Inventory of Existing Chemical Substances
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NDSL = Non-Domestic Substances List
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SCBA: Self-Contained Breathing Apparatus
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2017.
2. International Agency for Research on Cancer Monographs, searched 2018.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2018 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - March 2015 version.
6. California Proposition 65 List - December 29, 2017 version.
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2018.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<u>Prepared for:</u> Parker Hannifin Corp. 77 Dragon Court Woburn, MA, USA 01888 Telephone: 781-935-4850 Direct all enquiries to: Parker Hannifin Corp.	
<u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com	

DISCLAIMER

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END OF DOCUMENT

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **CHO-FORM® 5513, Part B**

Product Code(s) : 19-26-5513-0850

Recommended use of the chemical and restrictions on use

: Conductive Form in Place Gasket.
No restrictions on use known.

Chemical family : Mixture of: Inorganic substances in powdered form; Siloxanes

SDS number : PHC-149

Name, address, and telephone number of the manufacturer:

Parker Hannifin Corp.

Chomerics Division
77 Dragon Court
Woburn, MA, USA
01888

Manufacturer's Telephone # : (781) 935-4850

24 Hr. Emergency Tel # : INFOTRAC: (800) 535-5053 (Within Continental US and Canada); (352)323-3500 (International)

Name, address, and telephone number of the supplier:

Refer to manufacturer

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Pasty liquid. Grey. Slight odor.

Most important hazards:

Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Hazard pictogram(s)

None required under U.S. OSHA Hazcom 2012 and Canadian WHMIS 2015 regulations.

Signal Word

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Hazard statement(s)

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

Precautionary statement(s)

None required under U.S. OSHA HazCom 2012 and Canadian WHMIS 2015 regulations.

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Other hazards

Other hazards which do not result in classification:

Burning produces obnoxious and toxic fumes. When heated above 150°C in air, may release formaldehyde gas. May be mildly irritating to skin, eyes and respiratory system. Inhalation of fumes may result in metal fume fever, a flu-like illness. May cause gastrointestinal irritation. Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights. Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Copper	Not available.	7440-50-8	55.0 - 65.0
silver	Silver metal Argentum	7440-22-4	10.0 - 20.0
Octamethyltrisiloxane	Dimethyl-bis(trimethylsilyloxy) silane	107-51-7	< 3.0
The following ingredient may be released from the product only when heated above 150°C:			
formaldehyde	Methanal Methyl Aldehyde Methylene oxide	50-00-0	Not known.

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : If ingested, do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Consult a physician.
- Skin contact* : For skin contact, wash with soap and water while removing contaminated clothing. If irritation or symptoms develop, seek medical attention.
- Eye contact* : Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

- : Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
- Direct skin contact may cause slight or mild, transient irritation. Exposure may cause temporary irritation, redness or discomfort.
- Direct eye contact may cause slight or mild, transient irritation. Symptoms may include mild redness and swelling.
- If material is ingested, may cause irritation to mucous membranes. May cause nausea, stomach pain and vomiting.
- Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.
- Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.
- When heated above 150°C in air, may release formaldehyde gas. Formaldehyde is an eye and throat irritant and acute toxicant. Formaldehyde may cause sensitization by skin contact. Formaldehyde is classified as carcinogenic. Formaldehyde may cause mutations to non-reproductive (somatic) cells, based on animal data.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

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SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not classified as flammable. However, may burn if exposed to extreme heat and flame. When heated above 150°C in air, may release formaldehyde gas. Toxic fumes, gases or vapors may evolve on burning.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not classified as flammable.

Hazardous combustion products

- : Carbon oxides; Formaldehyde; Metal oxides; Silicon oxides; Other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Wear appropriate protective equipment. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

- : Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use inert, non-combustible absorbents to assist the pick up of material. Pick up and transfer to properly labeled containers. Contact the proper local authorities. For waste disposal, see Section 13 of the SDS.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): Copper (5000 lbs / 2270 kg); silver (1000 lbs / 454 kg)

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

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SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use with adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Avoid breathing dust, fume or vapors. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep containers closed when not in use. Wash thoroughly after handling.

Conditions for safe storage

- : Store in cool/well-ventilated place. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Keep away from incompatibles.

Incompatible materials

- : Strong oxidizing agents; Strong acids; Strong bases; Halogenated compounds

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Copper	0.2 mg/m ³ (fume); 1 mg/m ³ (Dust and mist)	N/Av	0.1 mg/m ³ (fume); 1 mg/m ³ (Dust and mist)	N/Av
silver	0.1 mg/m ³ (dust and fume)	N/Av	0.01 mg/m ³	N/Av
formaldehyde	0.1 ppm	0.3 ppm	0.75 ppm	2 ppm
Octamethyltrisiloxane	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : In case of insufficient ventilation wear suitable respiratory equipment. If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Seek advice from respiratory protection specialists.

Skin protection

- : Gloves impervious to the material are recommended. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear sufficient clothing to prevent skin contact.

Eye / face protection

- : Wear as appropriate: Tightly fitting safety goggles; Safety glasses with side shields.

Other protective equipment

- : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust, fume or vapors. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

- : Pasty liquid. grey

Odor

- : Slight odor.

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Odor threshold : N/Av
pH : N/Av
Melting/Freezing point : N/Av
Initial boiling point and boiling range : N/Av
Flash point : N/Av
Flashpoint (Method) : N/Av
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.) : N/Av
Upper flammable limit (% by vol.) : N/Av
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapor pressure : N/Av
Vapor density : N/Av
Relative density / Specific gravity : 3.4
Solubility in water : Insoluble.
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : N/Av
Auto-ignition temperature : N/Av
Decomposition temperature : N/Av
Viscosity : N/Av
Volatiles (% by weight) : N/Av
Volatile organic Compounds (VOC's) : N/Av
Absolute pressure of container : N/Av
Flame projection length : N/Av
Other physical/chemical comments : No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions. When heated above 150°C in air, may release formaldehyde gas.
Possibility of hazardous reactions : Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases; Halogenated compounds
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry ingestion : YES

Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde causes severe respiratory irritation, lung inflammation and pulmonary edema.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

- : Direct skin contact may cause slight or mild, transient irritation. Exposure may cause temporary irritation, redness or discomfort.

Sign and symptoms eyes

- : Direct eye contact may cause slight or mild, transient irritation. Symptoms may include mild redness and swelling.

Potential Chronic Health Effects

- : Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

Mutagenicity

- : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde may cause mutations to non-reproductive (somatic) cells, based on animal data.

Carcinogenicity

- : Not classifiable as a human carcinogen. No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde is classified as carcinogenic by IARC (Group 1), ACGIH (Group A2) and NTP (Group 2).

Reproductive effects & Teratogenicity

- : This product is not expected to cause reproductive or developmental effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.
Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde may cause sensitization by skin contact.

Specific target organ effects

- : According to the classification criteria of U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause target organ toxicity through single or repeated exposures.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : None known or reported by the manufacturer.

Toxicological data

- : Not classified for acute toxicity based on available data. No data is available on the product itself.

See below for individual ingredient acute toxicity data.

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<u>Chemical name</u>	<u>LC₅₀ (4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Copper	> 5.11 mg/L (dust) (No mortality)	> 2500 mg/kg	> 2000 mg/kg
silver	> 5.16 mg/L (dust) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
Octamethyltrisiloxane	> 22.6 mg/L (vapour) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
The following ingredient may be released from the product only when heated above 150°C:			
formaldehyde	287 ppm	800 mg/kg (rat) The estimated human lethal dose is: 317 - 475 mg/kg	300 mg/kg

Other important toxicological hazards

- : Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. Contains: Copper. The acute toxicity of copper to aquatic species varies drastically by the chemical form and correlates with the availability of free ionic copper. Aquatic toxicity is highly variable not only by organism but with physical and chemical characteristics of the water itself.

See the following tables for individual ingredient chronic ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC₅₀ / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper	7440-50-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
formaldehyde	50-00-0	6.7 mg/L (Striped bass)	≥ 48 mg/L/28-day (Japanese ricefish)	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC₅₀ / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper	7440-50-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
formaldehyde	50-00-0	5.8 mg/L (Daphnia magna)	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

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<u>Ingredients</u>	CAS No	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Copper	7440-50-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
formaldehyde	50-00-0	14.7 mg/L/24hr (Green algae)	N/Av	None.
Octamethyltrisiloxane	107-51-7	N/Av	N/Av	None.

Persistence and degradability

- : No data is available on the product itself.
Contains the following chemicals which are not readily biodegradable: Copper; silver; Octamethyltrisiloxane.

Bioaccumulation potential

- : The product itself has not been tested. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
formaldehyde (CAS 50-00-0)	0.35	3.0
Octamethyltrisiloxane (CAS 107-51-7)	6.6	3610; 5600 (Fish) (parent)

Mobility in soil : The product itself has not been tested.

Other Adverse Environmental effects

- : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

- : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.

Methods of Disposal

- : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

- : If the product becomes a waste, it may meet the criteria of a hazardous waste according to the US RCRA Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
ICAO/IATA	None.	Not regulated.	not regulated	none	
ICAO/IATA Additional information	None.				
IMDG	None.	Not regulated.	not regulated	none	
IMDG Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Copper	7440-50-8	Yes	5000 lbs / 2270 kg	None.	Yes	1%
silver	7440-22-4	Yes	1000 lb/454 kg	None.	Yes	1%
formaldehyde	50-00-0	Yes	100 lbs / 45.4 kg	500 lb TPQ	Yes	0.1%
Octamethyltrisiloxane	107-51-7	Yes	None.	None.	No	N/Ap

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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes:

None.

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Copper	7440-50-8	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
silver	7440-22-4	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
formaldehyde	50-00-0	Yes	Cancer (gas)	Yes	Yes	Yes	Yes	Yes	Yes
Octamethyltrisiloxane	107-51-7	No	N/Ap	No	No	Yes	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the NPRI:

Copper (Part 1, Group A Substance)
silver (Part 1, Group A Substance)

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Copper	7440-50-8	231-159-6	Present	Present	Not listed	KE-08896	Present	HSR002948
silver	7440-22-4	231-131-3	Present	Present	Not listed	KE-31261	Present	HSR003077
formaldehyde	50-00-0	200-001-8	Present	Present	(2)-482	KE-17074	Present	HSR001584, HSR001162, HSR001518, HSR001583 (dilution)
Octamethyltrisiloxane	107-51-7	203-497-4	Present	Present	(7)-476	98-3-930	Present	May be used as a single component chemical under an appropriate group standard.

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California

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CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
DOT: Department of Transportation
EC50: Effective Concentration 50%
EINECS: European Inventory of Existing Commercial chemical Substances
EPA: Environmental Protection Agency
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organisation
IECSC: Inventory of Existing Chemical Substances
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NDSL = Non-Domestic Substances List
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SCBA: Self-Contained Breathing Apparatus
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2017.
2. International Agency for Research on Cancer Monographs, searched 2018.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2018 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - March 2015 version.
6. California Proposition 65 List - December 29, 2017 version.
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2018.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<u>Prepared for:</u> Parker Hannifin Corp. 77 Dragon Court Woburn, MA, USA 01888 Telephone: 781-935-4850 Direct all enquiries to: Parker Hannifin Corp.	
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