



SAFETY DATA SHEET

1. Identification

Product identifier	CHO-BOND® 4660
Other means of identification	
SDS number	PHC-135
Product code	51-02-4660-0000; 51-05-4660-0000
Recommended use	Conductive Caulk
Recommended restrictions	No restrictions on use known.
Chemical family	Mixture of: Inorganic substances in powdered form; Hydrocarbons; Polyisobutylene.
Manufacturer	
Company name	Parker Hannifin Corp.
Address	Chomerics Division 77 Dragon Court Woburn, MA, USA 01888
Telephone	(781) 935 4580
Website	www.chomerics.com
E-Mail	chomailbox@parker.com
Supplier information	Refer to Manufacturer
Emergency phone number	INFOTRAC - (800) 535-5053 (Within Continental US); (352) 323-3500 (Outside US)

2. Hazard(s) Identification

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Physical hazards	Flammable solid - Category 1
Health hazards	Skin corrosion/irritation - Category 2 Carcinogenicity - Category 2 Specific target organ toxicity - single exposure - Category 3 (Narcotic effects) Specific target organ toxicity - repeated exposure - Category 1
Environmental hazards	Not currently regulated by OSHA, refer to Section 12 for additional information.
OSHA defined hazards	This mixture does not meet the classification criteria according to OSHA Hazcom 2012.

Label elements



Signal Word	DANGER!
Hazard statement(s)	Flammable solid. Causes skin irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Causes damage to the lungs through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks and open flame. - No smoking. Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Do not breathe dust, fume or vapor. Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection.



SAFETY DATA SHEET

Response

IF exposed or concerned: Get medical attention/advice.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash it before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
In case of fire, use dry chemical, CO₂, or alcohol foam to extinguish.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose of contents/container in accordance with local regulation.

Hazard(s) not otherwise Classified (HNOC)

No OSHA defined hazard classes.
Other hazards which do not result in classification:
Toxic fumes, gases or vapors may evolve on burning. Direct eye contact may cause slight or mild, transient irritation. Mild respiratory irritant. Inhalation of fumes may result in metal fume fever, a flu-like illness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation.

Environmental precautions: Toxic to aquatic life with long lasting effects. Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

Supplemental Information

Avoid contact with eyes, skin and clothing. Keep away from incompatibles.

3. Composition/information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	Concentration (%)
Copper	Not available.	7440-50-8	55.0 - 65.0
n-Heptane	Dipropylmethane Heptyl hydride	142-82-5	15.0 - 25.0
Silver	Silver metal Argentum	7440-22-4	5.0 - 10.0
Carbon black	Furnace black Lamp black Thermal black	1333-86-4	0.5 - 1.5
Silica, amorphous fumed	Synthetic Amorphous, Pyrogenic Silica	112945-52-5	0.5 - 1.5

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

4. First-aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stopped, begin artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Eye contact

Rinse thoroughly with plenty of water, also under the eyelids. IF exposed or concerned: Get medical attention/advice.

Ingestion

Do not induce vomiting. Never give anything by mouth to a person who is unconscious or is having convulsions IF exposed or concerned: Get medical attention/advice.



SAFETY DATA SHEET

Most important symptoms and effects, both acute and delayed

Causes skin irritation. Contact may cause redness, swelling and a painful sensation. Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing. May cause headache, nausea, drowsiness or other effects on the central nervous system. Causes damage to the lungs through prolonged or repeated exposure if inhaled. Symptoms may include coughing, shortness of breath, wheezing and reduced lung function. 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. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Direct eye contact may cause slight or mild, transient irritation. Symptoms may include stinging and tearing. Mild respiratory irritant. Symptoms may include upper respiratory irritation, coughing and breathing difficulties.

Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General Information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Carbon dioxide (CO₂); Dry chemical; Alcohol-resistant foam.

Unsuitable extinguishing media

Do not use water jet, as this may spread burning material.

Specific hazards arising from the chemical

Vapors are heavier than air and may spread along floors. The pressure in sealed containers can increase under the influence of heat.

Special protective equipment and precautions 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.

Fire-fighting equipment/instructions

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.

Specific methods

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

General fire hazards

Flammable solid. May be ignited by open flame. This product was tested according to the United Nation's Test Method for Readily Combustible Solids (Test Method N.1), and was found to be a highly flammable solid. The product propagated combustion across a length of 200 mm in less than 2 minutes, and also propagated combustion across a length of 100 mm in less than 45 seconds. Combustion was not inhibited by a wetting agent.

Hazardous combustion products

Carbon oxides; Metal oxides; Hydrocarbons; Aldehydes; Silicon oxides; Other unidentified organic compounds

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

Methods and materials for containment and cleaning up

Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools. Cover any spilled material with non-combustible absorbent material, such as vermiculite or sand, then place absorbent material into a container for later disposal (see Section 13). Do not use combustible absorbents, such as sawdust. Pick up and transfer to properly labelled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.



SAFETY DATA SHEET

Environmental precautions

Prevent product from entering drains, sewers, waterways and soil. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame. - No smoking. Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue (liquid and/or vapor) and can be dangerous.

Conditions for safe storage, including any incompatibilities

Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area. Do not store near any incompatible materials (see Section 10).

8. Exposure controls/personal protection

Occupational exposure limits

U.S. OSHA Exposure Limits (29 CFR 1910)

	Type	Value
Copper (CAS 7440-50-8)	TWA	0.1 mg/m ³ (fume); 1 mg/m ³ (dust and mist)
n-Heptane (CAS 142-82-5)	TWA	500 ppm (2000 mg/m ³)
Silver (CAS 7440-22-4)	TWA	0.01 mg/m ³
Carbon black (CAS 1333-86-4)	TWA	3.5 mg/m ³
Silica, amorphous fumed (CAS 112945-52-5)	TWA	20 mppcf

US. ACGIH Threshold Limit Values

	Type	Value
Copper (CAS 7440-50-8)	TWA	0.2 mg/m ³ (fume); 1 mg/m ³ (dust and mist)
n-Heptane (CAS 142-82-5)	TWA	500 ppm 400 ppm
Silver (CAS 7440-22-4)	TWA	0.1 mg/m ³ (dust and fume)
Carbon black (CAS 1333-86-4)	TWA	3.0 mg/m ³ (inhalable)
Silica, amorphous fumed (CAS 112945-52-5)	TWA	10 mg/m ³ (inhalable); 3 mg/m ³ (respirable) (PNOS)

US. NIOSH: Pocket Guide to Chemical Hazards

Type	Value
------	-------



SAFETY DATA SHEET

Copper (CAS 7440-50-8)	TWA	1 mg/m ³ (dust and mist)
n-Heptane (CAS 142-82-5)	TWA	85 ppm (350 mg/m ³)
	Ceiling	440 ppm (1800 mg/m ³) (15 min)
Silver (CAS 7440-22-4)	TWA	0.01 mg/m ³ (dust)
Carbon black (CAS 1333-86-4)	TWA	3.5 mg/m ³

Biological limit values

Appropriate engineering controls

Use only outdoors or in a well-ventilated area. 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.

Individual protection measures, such as personal protective equipment

Eye / face protection

Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary.

Skin protection

Hand protection

Wear protective gloves/clothing. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear resistant clothing and boots.

Other

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

Respiratory protection

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 (29CFR 1910.134). Advice should be sought from respiratory protection specialists.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Paste

Color

dark grey

Odor

solvent

Odor threshold

N/Av

pH

N/Av

Melting point /freezing point

N/Av

Initial boiling point and boiling range

> 98°C (208°F) (based on ingredients)

Flash point

- 4°C (24.8°F) (based on ingredients)

closed cup

Evaporation rate

N/Av

Flammability (solid, gas)

Flammable solid. This product was tested according to the United Nation's Test Method for Readily Combustible Solids (Test Method N.1), and was found to be a highly flammable solid. The product propagated combustion across a length of 200 mm in less than 2 minutes, and also propagated combustion across a length of 100 mm in less than 45 seconds. Combustion was not inhibited by a wetting agent.

Lower flammability/explosive limit

1.05% (based on ingredients)

Upper flammability/explosive limit

6.7% (based on ingredients)

SAFETY DATA SHEET



Vapor pressure	N/Av
Vapor density	N/Av
Relative density	2 (approximately)
Solubility(ies)	
Other solubility(ies)	N/Av
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	N/Av
Auto-ignition temperature	N/Av
Decomposition temperature	N/Av
Viscosity	N/Av
Other information	
Explosive properties	Not explosive
Oxidizing properties	None known.
Specific gravity	2 (approximately)
VOC	306 g/L
Volatilities %	N/Av
Other physical/chemical data	No additional information.

10. Stability and reactivity

Reactivity	Not normally reactive.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
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; Amines.
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5.

11. Toxicological information

Information on likely routes of exposure

Routes of entry inhalation	Mild respiratory irritant. May cause central nervous system depression.
Routes of entry skin & eye	Causes skin irritation. Direct eye contact may cause slight or mild, transient irritation.
Routes of entry Ingestion	May cause gastrointestinal irritation.
Routes of exposure skin absorption	May be absorbed through the skin.



SAFETY DATA SHEET

Most important symptoms/effects, acute and delayed

Causes skin irritation. Contact may cause redness, swelling and a painful sensation. Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing. May cause headache, nausea, drowsiness or other effects on the central nervous system. Causes damage to the lungs through prolonged or repeated exposure if inhaled. Symptoms may include coughing, shortness of breath, wheezing and reduced lung function. 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. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Direct eye contact may cause slight or mild, transient irritation. Symptoms may include stinging and tearing. Mild respiratory irritant. Symptoms may include upper respiratory irritation, coughing and breathing difficulties.

Information on toxicological effects

Acute toxicity Not expected to be hazardous by OSHA criteria.

There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Components	Species	Test Results
Copper		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 5.11 mg/L (dust) (No mortality)
<i>Oral</i>		
LD50	Rat	> 2500 mg/kg
n-Heptane		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg (No mortality)
<i>Inhalation</i>		
LC50	Rat	25 000 ppm (102.5 mg/L) (vapor)
<i>Oral</i>		
LD50	Rat	> 15 000 mg/kg
Silver		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg (No mortality)
<i>Inhalation</i>		
LC50	Rat	> 5.16 mg/L (dust) (No mortality)
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg (No mortality)
Carbon black		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 3000 mg/kg
<i>Inhalation</i>		
LC50	Rat	6.75 mg/L (dust)
<i>Oral</i>		
LD50	Rat	> 10 000 mg/kg



SAFETY DATA SHEET

Silica, amorphous fumed

Acute

Dermal

LD50 Rabbit > 5000mg/kg

Inhalation

LC50 Rat > 2.08mg/L (no deaths) (dust)

Oral

LD50 Rat 3160 mg/kg

Skin Corrosion/Irritation

Hazardous by OSHA criteria. Classification:
Skin corrosion/irritation - Category 2. Causes skin irritation.

Serious eye damage/Irritation

Not expected to be hazardous by OSHA criteria.

Respiratory or skin sensitization

Not expected to be a skin or respiratory sensitizer.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

Hazardous by OSHA criteria. Classification:
Carcinogenicity - Category 2. Suspected of causing cancer. Contains: carbon black. Carbon black is classified as carcinogenic by IARC (Group 2B).
See below for ingredients present on regulatory lists.

IARC Monographs. Overall Evaluation of Carcinogenicity

Carbon black(CAS 1333-86-4) Group 2B (Possibly Carcinogenic to Humans)

Silica, amorphous fumed(CAS 112945-52-5) Group 3 (Not Classifiable)

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Carbon black(CAS 1333-86-4) Present

Reproductive toxicity

Not expected to cause reproductive effects.

Specific target organ toxicity - single exposure

Hazardous by OSHA criteria. Classification:
Specific target organ toxicity - single exposure; Category 3. May cause drowsiness or dizziness. .

Specific target organ toxicity - repeated exposure

Hazardous by OSHA criteria. Classification:
Specific target organ toxicity - repeated exposure - Category 1. Causes damage to the lungs through prolonged or repeated exposure if inhaled.
Contains: Carbon black. Prolonged inhalation of Carbon black dusts may cause significant irreversible lung effects (slight to moderate scarring of lungs, chronic bronchitis, alveolitis) at relatively high doses (10 - 100 mg/m3).

Chronic effects

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

Aspiration toxicity

Not expected to be hazardous by OSHA criteria.

Further information

None known or reported by the manufacturer.

12. Ecological information

Ecotoxicity

Toxic to aquatic life with long lasting effects. The product contains the following substances which are hazardous for the environment: n-Heptane.
No data is available on the product itself. Should not be released into the environment. This product also 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 ecotoxicity data.



SAFETY DATA SHEET

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Copper	7440-50-8	N/Av	N/Av	None.
n-Heptane	142-82-5	5.738 mg/L (Rainbow trout)	1.284 mg/L/28-day (Rainbow trout)	None.
Silver	7440-22-4	N/Av	N/Av	N/Av
Carbon black	1333-86-4	> 1000 mg/L (Zebra fish)	N/Av	None.
Silica, amorphous fumed	112945-52-5	N/Av	N/Av	None.

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Copper	7440-50-8	N/Av	N/Av	None.
n-Heptane	142-82-5	0.2 mg/L Chaetogammarus marinus (Water flea)	0.06 - 0.23 mg/L	1
Silver	7440-22-4	N/Av	N/Av	N/Av
Carbon black	1333-86-4	> 5600 mg/L/24hr (Daphnia magna)	N/Av	None.
Silica, amorphous fumed	112945-52-5	> 10 000 mg/L/24hr (Daphnia magna)	N/Av	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Copper	7440-50-8	N/Av	N/Av	None.
n-Heptane	142-82-5	4.338 mg/L/72hr (Green algae)	0.97 mg/L/72hr	None.
Silver	7440-22-4	N/Av	N/Av	N/Av
Carbon black	1333-86-4	> 10 000 mg/L/72hr (Green algae)	N/Av	None.
Silica, amorphous fumed	112945-52-5	> 10 000 mg/L/72hr (Green algae)	N/Av	None.

Persistence and degradability

The product itself has not been tested.
The following ingredients are considered to be readily biodegradable: n-Heptane.
Contains the following chemicals which are not readily biodegradable: silver; Copper;
Carbon black; Amorphous silica.

Bioaccumulation potential

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

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
n-Heptane (CAS 142-82-5)	4.66	2000
Silica, amorphous fumed (CAS 112945-52-5)	0.53(calculated)	N/Av

Mobility in soil

The product itself has not been tested.

Other adverse effects

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



SAFETY DATA SHEET

13. Disposal consideration

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with local regulations.

Local disposal regulations

Dispose in accordance with all applicable federal, state, territory and local regulations.

Hazardous waste code

If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under 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.

Waste from residues / unused products

Dispose of contents/container in accordance with local regulation. This material and its container must be disposed of in a safe way.

Contaminated packaging

Empty containers should be taken for local recycling or waste disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

49CFR/DOT

UN Number	UN1325
UN proper shipping name	Flammable solids, organic, n.o.s. (Heptane)
Transport hazard class(es)	
Class	4.1
Subsidiary ris	none
Packaging group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ICAO/IATA

UN Number	UN1325
UN proper shipping name	Flammable solid, organic, n.o.s. (Heptane)
Transport hazard class(es)	
Class	4.1
Subsidiary ris	none
Packaging group	II
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN Number	UN1325
UN proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (Heptane)
Transport hazard class(es)	
Class	4.1

SAFETY DATA SHEET



Subsidiary ris	none
Packaging group	II
Environmental hazards	Yes
Marine pollutant	Yes
EmS	F-A; S-G
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

General information Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame. - No smoking.
 This product meets the criteria for an environmentally hazardous material 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.

15. Regulatory information

US Federal Information:

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

<u>Ingredients</u>	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%
n-Heptane	142-82-5	Yes	None.	None.	No	N/Ap
Silver	7440-22-4	Yes	1000 lb/454 kg	None.	Yes	1%
Carbon black	1333-86-4	Yes	None.	None.	No	N/Ap
Silica, amorphous fumed	112945-52-5	NL	None.	None.	No	N/Ap

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

US state regulations

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
n-Heptane	142-82-5	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Silver	7440-22-4	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Carbon black	1333-86-4	Yes	Cancer (airborne, unbound particles of respirable size)	Yes	Yes	Yes	Yes	Yes	Yes
Silica, amorphous fumed	112945-52-5	No	N/Ap	No	No	No	No	No	No



SAFETY DATA SHEET

Canadian Information:

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

International Inventories

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

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECs</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>New Zealand IOC</u>
Copper	7440-50-8	231-159-6	Present	Present	Not listed	KE-08896	Present	HSR002948
n-Heptane	142-82-5	205-563-8	Present	Present	(2)-7	KE-18271	Present	HSR001164
Silver	7440-22-4	231-131-3	Present	Present	Not listed	KE-31261	Present	HSR003077
Carbon black	1333-86-4	215-609-9	Present	Present	(5)-3328; (5)-5222	KE-04682	Present	HSR002801
Silica, amorphous fumed	112945-52-5	231-545-4 (as Silicon dioxide)	Present	Present	(1)-548	KE-30953	Present	May be used as a single component chemical under an appropriate group standard

16. Other information, including date of preparation or last revision

Issue date

09/24/2014

Version #

2

Legend

ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California
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
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IBC: Intermediate Bulk Container
IECSC: Inventory of Existing Chemical Substances
IMDG: International Maritime Dangerous Goods
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
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



SAFETY DATA SHEET

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
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Reviewed Date SDS (dd/mm/yyyy)

05/21/2015

Revision Information

(M)SDS sections updated:
2. HAZARDS IDENTIFICATION;
4. FIRST AID MEASURES;
5. FIRE-FIGHTING MEASURES;
11. TOXICOLOGICAL INFORMATION;
12. ECOLOGICAL INFORMATION;
14. TRANSPORT INFORMATION

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Disclaimer

Prepared by: ICC The Compliance Center Inc.
<http://www.thecompliancecenter.com>

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by Parker Hannifin Corporation and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Parker Hannifin Corporation expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Parker Hannifin Corporation.

Bibliography

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2015.
2. International Agency for Research on Cancer Monographs, searched 2015.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2015 (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 - May 11, 2015 version.
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2015.