

CHO-BOND® 1038

SDS No: PHC-046

SDS Revision Date (mm/dd/yyyy): 10/14/2019

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **CHO-BOND® 1038**

Other means of identification : 50-01-1038-0000; 50-01-1038-0002; 50-02-1038-0000; 50-02-1038-0002;
50-02-1038-1000; 50-14-1038-0000; 50-31-1038-0000; 50-33-1038-0000

Recommended use of the chemical and restrictions on use

: Moisture cure adhesive / sealant.
No restrictions on use known.

Chemical family

: Mixture of: Metal compounds; Silicone elastomer; Hydrocarbons

SDS number

: PHC-046

Name, address, and telephone number of the manufacturer:

Parker Hannifin Corp.

Chomerics Division
77 Dragon Court
Woburn, MA, USA
01888

Manufacturer's Telephone # : (781) 935-4580

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

Name, address, and telephone number of the supplier:

Refer to manufacturer

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Medium paste; light grey. Mild odor.

Most important hazards:

Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS. Harmful to aquatic life. Avoid release to the environment. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Carcinogenicity - Category 2

Reproductive toxicity - Category 2

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Hazard statement(s)

Suspected of causing cancer. Suspected of damaging fertility or the unborn child.

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Precautionary statement(s)

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical advice/attention.

Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:

May slowly hydrolyze in the presence of water to: Methanol. Upon completion of the curing process, these hydrolysis products are no longer released. Toxic fumes, gases or vapours may evolve on burning. When heated above 150°C in air, may release formaldehyde gas.

May be mildly irritating to skin 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	65.0 - 80.0
Polydimethylsiloxane	Dimethyl Siloxane, Hydroxy-terminated	70131-67-8	10.0 - 20.0
silver	Silver metal Argentum	7440-22-4	5.0 - 10.0
Xylene	Dimethylbenzene; Methyltoluene; Xylol	1330-20-7	1.0 - 5.0
Trimethoxymethylsilane	Methyltrimethoxysilane	1185-55-3	0.4 - 1.2
Ethylbenzene	Ethylbenzol Phenylethane	100-41-4	0.5 - 1.5
Methanol	Carbinol Methyl alcohol Methyl hydrate	67-56-1	< 0.20
The following ingredient may be released from the product only when heated above 150°C: formaldehyde			Not known.
	Methanal Methyl Aldehyde Methylene oxide	50-00-0	

The exact concentrations of the above listed chemicals are being withheld as a trade secret as allowed by 29CFR1910.1200.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- 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 advice/attention.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. IF exposed or concerned: Get medical advice/attention.

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Skin contact : For skin contact, wash with soap and water while removing contaminated clothing. If irritation or symptoms develop, seek medical attention. Wash contaminated clothing before reuse.

Eye contact : Immediately flush eyes with running water for at least 15 minutes. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

- : Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing. Suspected of damaging fertility or the unborn child. Symptoms may include reduced fetal weight, delayed ossification and persistent behavioural effects. May be mildly irritating to skin, eyes and respiratory system. May cause coughing and breathing difficulties. Exposure may cause temporary irritation, redness or discomfort. 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. 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 sensitisation by skin contact. Formaldehyde may cause mutations to non-reproductive (somatic) cells, based on animal data. Formaldehyde is classified as carcinogenic.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

- : May react with water. Do not use water if possible.

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. May react with water, generating heat. May slowly hydrolyze in the presence of water to: Methanol. Upon completion of the curing process, these hydrolysis products are no longer released. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. 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; Metal oxides; formaldehyde; Silicon oxides; Reactive hydrocarbons; 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

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- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not get water inside containers. 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. Restrict access to area until completion of clean-up. Wear appropriate protective equipment. Refer to protective measures listed in sections 7 and 8.

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

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. Contaminated absorbent material may pose the same hazards as the spilled product. 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); Xylene (100 lbs / 45.4 kg); Ethylbenzene (1000 lbs / 454 kg); Methanol (5000 lbs / 2270 kg)

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

SECTION 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 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. Protect from moisture. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue and can be dangerous.

Conditions for safe storage : 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. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep away from incompatibles.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases; Water

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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</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
Polydimethylsiloxane	N/Av	N/Av	N/Av	N/Av
silver	0.1 mg/m ³ (dust and fume)	N/Av	0.01 mg/m ³	N/Av
Xylene	100 ppm	150 ppm	100 ppm (435 mg/m ³)	N/Av
Trimethoxymethylsilane	N/Av	N/Av	N/Av	N/Av
Ethylbenzene	20 ppm	N/Av	100 ppm (435 mg/m ³)	N/Av
Methanol	200 ppm (skin)	250 ppm (skin)	200 ppm (260 mg/m ³)	N/Av
formaldehyde	0.1 ppm	0.3 ppm	0.75 ppm	2 ppm

ACGIH - Biological Exposure Indices:

Xylene (CAS # 1330-20-7)

1.5 g/g Creatinine, Medium: Urine, Parameter: Methylhippuric acid

Ethylbenzene (CAS # 100-41-4)

0.15 g/g Creatinine, Medium: Urine, Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific)

Methanol (CAS # 67-56-1)

15 mg/L, Medium: Urine, Parameter: Methanol (background, nonspecific)

Exposure controls

Ventilation and engineering measures

- : Provide adequate ventilation. 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

- : 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. Advice should be sought from respiratory protection specialists.

Skin 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. Depending on conditions of use, an impervious apron should be worn.

Eye / face protection

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

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.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Medium paste; light grey
Odour	: Mild odor.
Odour threshold	: N/Av
pH	: N/Av
Melting Point/Freezing point	: N/Av
Initial boiling point and boiling range	: > 102°C (216°F) (based on ingredients)
Flash point	: None.
Flashpoint (Method)	: N/Av
Evaporation rate (BuAe = 1)	: N/Av
Flammability (solid, gas)	: Not considered flammable.
Lower flammable limit (% by vol.)	: N/Av
Upper flammable limit (% by vol.)	: N/Av
Oxidizing properties	: None known.
Explosive properties	: Not explosive
Vapour pressure	: N/Av
Vapour density	: N/Av
Relative density / Specific gravity	: > 1
Solubility in water	: insoluble. May react with water.
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)	: 111 g/L
Absolute pressure of container	: N/Av
Flame projection length	: N/Av
Other physical/chemical comments	: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: May react with water. May slowly hydrolyze in the presence of water to: Methanol. Upon completion of the curing process, these hydrolysis products are no longer released.
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.
Conditions to avoid	: Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials. Avoid excessive moisture.
Incompatible materials	: Strong oxidizing agents; Strong acids; Strong bases; Water

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Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

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

: May cause mild skin irritation. Exposure may cause temporary irritation, redness or discomfort.

Sign and symptoms eyes

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

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

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Carcinogenicity - Category 2. Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing. Contains: Ethylbenzene. Ethylbenzene is classified as possibly carcinogenic by IARC (Group 2B) and the ACGIH (Category A3). Avoid heating, which will result in the liberation of formaldehyde gas. Formaldehyde is classified as carcinogenic.

Reproductive effects & Teratogenicity

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Reproductive toxicity - Category 2. Suspected of damaging fertility or the unborn child. This product contains Xylene. Xylene may cause fetotoxic effects (e.g. reduced fetal weight, delayed ossification, behavioral effects) at doses which are not maternally toxic, based on animal data.

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- 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 sensitisation by skin contact.
- Specific target organ effects** : According to the classification criteria of Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause specific target organ toxicity (STOT) through single or repeated exposures.
- Medical conditions aggravated by overexposure** : Pre-existing eye, skin, respiratory, liver, kidney and central nervous system 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. The calculated ATE values for this mixture are:
ATE oral = 63,125 mg/kg
ATE dermal = 3368 mg/kg
ATE inhalation (vapours) = 520 mg/L/4H

See below for individual ingredient acute toxicity data.

<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
Polydimethylsiloxane	> 11.59 mg/L (mist)	> 15 400 mg/kg	> 2000 mg/kg
silver	> 5.16 mg/L (dust) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
Xylene	6350 ppm (27.6 mg/L) (vapour)	3253 mg/kg	12 180 mg/kg
Trimethoxymethylsilane	> 51.4 mg/L (vapour)	> 9500 mg/kg	> 9500 mg/kg
Ethylbenzene	4000 ppm (17.4 mg/L) (vapour)	3500 mg/kg	15 380 mg/kg
Methanol	> 5000 ppm/6H (4.1 mg/L/4H (vapour)	5628 mg/kg (rat) The estimated human lethal dose is: 300 - 1000 mg/kg	> 393 mg/kg (Monkey) 15 800 mg/kg (rabbit)
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** : Harmful to aquatic life. 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. May slowly hydrolyze in the presence of water to: Methanol. Upon completion of the curing process, these hydrolysis products are no longer released. The following ingredient(s) may be harmful to aquatic life: Xylene; Ethylbenzene.
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.

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Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Copper	7440-50-8	N/Av	N/Av	None.
Polydimethylsiloxane	70131-67-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
Xylene	1330-20-7	8.2 mg/L (Rainbow trout)	N/Av	None.
Trimethoxymethylsilane	1185-55-3	> 110 mg/L (Rainbow trout) (hydrolysis product and/or parent compound)	N/Av	None.
Ethylbenzene	100-41-4	4.2 mg/L (Rainbow trout)	1.13 mg/L (30 days) (QSAR)	None.
Methanol	67-56-1	15 400 mg/L (Bluegill sunfish)	446.7 mg/L/28-day (Fathead minnow) (QSAR)	None.
formaldehyde	50-00-0	6.7 mg/L (Striped bass)	≥ 48 mg/L/28-day (Japanese ricefish)	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Copper	7440-50-8	N/Av	N/Av	None.
Polydimethylsiloxane	70131-67-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
Xylene	1330-20-7	3.2 - 9.56 mg/L (Daphnia magna)	N/Av	None.
Trimethoxymethylsilane	1185-55-3	> 122 mg/L (Daphnia magna) (hydrolysis product and/or parent compound)	N/Av	None.
Ethylbenzene	100-41-4	1.81 mg/L (Daphnia magna)	N/Av	None.
Methanol	67-56-1	> 10 000 mg/L (Daphnia magna)	208 mg/L (QSAR)	None.
formaldehyde	50-00-0	5.8 mg/L (Daphnia magna)	N/Av	None.

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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.
Polydimethylsiloxane	70131-67-8	N/Av	N/Av	None.
silver	7440-22-4	N/Av	N/Av	None.
Xylene	1330-20-7	3.2 - 4.9 mg/L/72hr (Green algae)	N/Av	None.
Trimethoxymethylsilane	1185-55-3	> 120 mg/L/72hr (Green algae) (hydrolysis product and/or parent compound)	120 mg/L/72hr (hydrolysis product and/or parent compound)	None.
Ethylbenzene	100-41-4	3.6 mg/L/96hr (Green algae)	3.4 mg/L/96hr	None.
Methanol	67-56-1	22 000 mg/L/96hr (Green algae)	N/Av	None.
formaldehyde	50-00-0	14.7 mg/L/24hr (Green algae)	N/Av	None.

Persistence and degradability

- : The product itself has not been tested.
- The following ingredients are considered to be readily biodegradable: Methanol.
- Contains the following chemicals which are considered to be inherently biodegradable: Xylene; Ethylbenzene.
- Contains the following chemicals which are not readily biodegradable: Copper; silver; Trimethoxymethylsilane; .

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)
Xylene (CAS 1330-20-7)	3.12 - 3.2	50 - 58
Trimethoxymethylsilane (CAS 1185-55-3)	- 0.67	3.16
Ethylbenzene (CAS 100-41-4)	3.15	1.1 - 1.5
Methanol (CAS 67-56-1)	- 0.82 to - 0.64	< 10 (common carp)
formaldehyde (CAS 50-00-0)	0.35	3.0

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.
- Empty containers retain residue and can be dangerous. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Methods of Disposal

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

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RCRA : 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.

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. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

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:



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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%
Polydimethylsiloxane	70131-67-8	Yes	None.	None.	No	N/Ap
silver	7440-22-4	Yes	1000 lb/454 kg	None.	Yes	1%
Xylene	1330-20-7	Yes	100 lbs / 45.4 kg	None.	Yes	1%
Trimethoxymethylsilane	1185-55-3	Yes	None.	None.	No	N/Ap
Ethylbenzene	100-41-4	Yes	1000 lb/ 454 kg	None.	Yes	0.1%
Methanol	67-56-1	Yes	5000 lbs / 2270 kg	None.	Yes	1%
formaldehyde	50-00-0	Yes	100 lbs / 45.4 kg	500 lb TPQ	Yes	0.1%

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

Health hazards (Carcinogenicity; Reproductive toxicity)

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:

Ingredients	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
Polydimethylsiloxane	70131-67-8	No	N/Ap	No	No	No	No	No	No
silver	7440-22-4	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Xylene	1330-20-7	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Trimethoxymethylsilane	1185-55-3	No	N/Ap	No	No	No	No	No	No
Ethylbenzene	100-41-4	Yes	Cancer	Yes	Yes	Yes	Yes	Yes	Yes
Methanol	67-56-1	Yes	Developmental	Yes	Yes	Yes	Yes	Yes	Yes
formaldehyde	50-00-0	Yes	Cancer (gas)	Yes	Yes	Yes	Yes	Yes	Yes

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)
- Xylene (Part 1: Group A; Part 5: Isomer Groups)
- Ethylbenzene (Part 1, Group A Substance)
- Methanol (Part 1, Group A Substance; Part 5: Individual Substances)

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

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International Information:

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

<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>NewZealand IOC</u>
Copper	7440-50-8	231-159-6	Present	Present	Not listed	KE-08896	Present	HSR002948
Polydimethylsiloxane	70131-67-8	Polymer	Present	Present	(7)-453; (7)-476	KE-31115	Present	HSR003459
silver	7440-22-4	231-131-3	Present	Present	Not listed	KE-31261	Present	HSR003077
Xylene	1330-20-7	215-535-7	Present	Present	(3)-60; (3)-3	KE-35427	Present	HSR000983
Trimethoxymethylsilane	1185-55-3	214-685-0	Present	Present	(2)-2053; (2)-2052	KE-34364	Present	HSR003829
Ethylbenzene	100-41-4	202-849-4	Present	Present	(3)-60; (3)-28	KE-13532	Present	HSR001151
Methanol	67-56-1	200-659-6	Present	Present	(2)-201	KE-23193	Present	HSR001186
formaldehyde	50-00-0	200-001-8	Present	Present	(2)-482	KE-17074	Present	HSR001584, HSR001162, HSR001518, HSR001583 (dilution)

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AIHA: American Industrial Hygiene Association
- 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

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PEL: Permissible exposure limit
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 QSAR: Quantitative structure-activity relationship
 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
 WEEL: Workplace Environmental Exposure Level
 WHMIS: Workplace Hazardous Materials Identification System

References

- 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
- 2. International Agency for Research on Cancer Monographs, searched 2019.
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2019 (Chempendium, HSDB and RTECs).
- 4. Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - June 2019 version.
- 6. California Proposition 65 List - September 2019 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2019.

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Revision Information

: (M)SDS sections updated 3. COMPOSITION/INFORMATION ON INGREDIENTS;11. TOXICOLOGICAL INFORMATION; 12. ECOLOGICAL INFORMATION

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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