Parker Hannifin Ltd.
Engineered Materials Group
Chomerics Division Europe
Unit 6 Century Point Halifax Road
High Wycombe Bucks, HP12 3SL
United Kingdom
Telephone: 044 (0) 1494 455 400

SDS Revision Date (dd/mm/yyyy): 23/05/2025
Revision No.: 6

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended. This safety data sheet complies with the requirements of UK REACH Regulation.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier : **CHO-SHIELD® 2002, Part A**

Product Code(s) : 52-00-2002-0000; 52-00-2002-1000; 52-01-2002-0000; 52-03-2002-0000; 52-04-2002-0000

UFI#5Q10-V0NT-300S-DNUD

SDS No. : PHC-020 EU

1.2 Relevant identified uses of the substance or mixture and uses advised against

: Product component solvent-based fluoropolymer
Use pattern: professional use
Refer to restrictions found in REACH Annex XVII item 75.

1.3 Details of the supplier of the safety data sheet:

Parker Hannifin Ltd.
Engineered Materials Group
Chomerics Division Europe
Unit 6 Century Point
Halifax Road
High Wycombe
Bucks, HP12 3SL
United Kingdom
E-mail: chomerics_europe@parker.com
Website: www.chomerics.com
Telephone: 044 (0) 1494 455 400

Parker Hannifin Manufacturing France SAS
ZAC des Epineaux
7 avenue Louis Blériot
95740 Frépillon, France
Telephone : 033 (01) 34 32 39 00
Email: parker.france@parker.com
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1.4 Emergency Telephone Number

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: INFOTRAC: (800) 535-5053 (US and Canada); + 001 (352) 323-3500 (International)
Poisons Information Centre
Norway +47 73 58 05 00
Finland +358 5052 000
Hungary +36 (1) 476 1135
The United Kingdom NHS 111
France +33383852192
Spain +34917689800
Germany +493018412-0
The Netherlands +31887558561
Poland +48422538400
Sweden +46104566750
Czech Republic +420267082236, +420267082230, +420267082229
Italy
06 68593726 (CAV “Osp. Pediatrico Bambino Gesu” Dip. Emergenza - Roma) 800 183459 (Az. Osp. Univ. Foggia - Foggia)
081 5453333 (Az. Osp. "A. Cardarelli" - Napoli)
06 49978000 (CAV Policlinico "Umberto I" - Roma)
06 3054343 (CAV Policlinico "A. Gemelli" - Roma)
055 7947819 (Az. Osp. "Careggi" U.O. Tossicologia Medica - Firenze)
0382 24444 (CAV Centro Nazionale di Informazione Tossicologica - Pavia) 02 66101029 (Osp. Niguarda Ca' Granda - Milano)
800 883300 (Azienda Ospedaliera Papa Giovanni XXII - Bergamo)

1.5 National Contact

: E-mail: chomerics_europe@parker.com
Website: www.chomerics.com

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Brownish, copper coloured liquid. Solvent odour.

Most important hazards:
Flammable liquid and vapour. May be ignited by open flame. Causes skin irritation.
Repeated exposure may cause skin dryness or cracking. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.
Very toxic to aquatic life with long lasting effects. Avoid release to the environment. See Section 12 for more environmental information.

This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008. Classification:
Flammable liquid - Category 3; H226
Skin irritation -Category 2; H315
Eye irritation -Category 2A ;H319
Acute aquatic toxicity -Category 1;H400
Chronic aquatic toxicity -Category 1; H410
EUH066

2.2 Label elements

Hazard pictogram(s)

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Hazardous components which must be listed on the label Fluoropolymer : Xylene; Ethylbenzene;Silver;Copper

Signal word:
Warning!

Hazard statements

H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
P264 - Wash hands thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves and eye/face protection.
P370 + P378 - In case of fire, use dry chemical, CO2 or 'alcohol foam' to extinguish.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P403 + P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container in accordance with local regulation.

Supplemental Hazard Statements:
EUH066 - Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards

Other hazards which do not result in classification:
May form explosive peroxides during prolonged exposure to air and heat. Rate of peroxide formation is not known. Burning produces obnoxious and toxic fumes. 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. Silver in the form of a finely divided dust may cause discoloration in contact with skin, and argyrosis in case of inhalation. Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

Endocrine disrupting properties: None known.

PBT assessment:
This mixture contains no substance(s) above reportable levels which are considered to be persistent, bioaccumulating nor toxic (PBT), or very persistent and very bioaccumulating (vPvB).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

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Chemical nature - Mixture of: Inorganic substances in powdered form; Halogenated compounds; Organotin compound; Solvent; Fluoropolymer.

The following substances shall be indicated according to legislation:

Substance name	CAS No	EC No.	Reach Registration No.	% Weight	Classification according to Regulation (EC) nr. 1272/2008	SCL, M-factor, ATE
Copper	7440-50-8	231-159-6	Present	**55.0 - 70.0**	Aquatic Acute 1 ;H400 Aquatic Chronic 1;H410	M-Factor=10
Fluoropolymer	88795-12-4	Polymer	Present	**10.0 - 30.0**	Eye Irrit. 2 ;H319	Not applicable.
Xylene	1330-20-7	215-535-7	Present	**< 9.0**	Flam. Liq. 3; H226 *Acute Tox. 4; H312 *Acute Tox. 4; H332 Skin Irrit. 2; H315	Not available
Ethylbenzene	100-41-4	202-849-4	Present	**1.0 - 5.0**	Flam. Liq. 2; H225 *Acute Tox. 4; H332 STOT RE 2; H373 (hearing organs) Asp. Tox. 1; H304	Not applicable.
2-Methoxy-1-methylethyl acetate	108-65-6	203-603-9	Not applicable.	**1.0 - 3.0**	Flam. Liq. 3; H226	Not applicable.
silver	7440-22-4	231-131-3	Present	**0.5 - 1.5**	Repr. 2 H361f; STOT RE 2 H373; Aquatic Acute 1 H400; Aquatic Chronic 1 H410	M-Factor =10

For the full text of the H phrases not mentioned in this Section or in Section 2, see Section 16.

SECTION 4. FIRST-AID MEASURES

4.1 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. When symptoms persist or in all cases of doubt, seek medical advice.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. When symptoms persist or in all cases of doubt, seek medical advice.

Skin contact : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. When symptoms persist or in all cases of doubt, seek medical advice.

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Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice/attention.

4.1.2 Self-protection for the first aider

: Wear protective gloves and eye/face protection.

4.2 Most important symptoms and effects, both acute and delayed

:

Causes skin irritation. Symptoms may include redness, itching and swelling. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. 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.
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.
Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

4.3 Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

: After prolonged storage, may release explosive peroxides in the presence of air. Rate of peroxide formation is not known. Vapours are heavier than air and may spread along floors. The pressure in sealed containers can increase under the influence of heat. Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; Metal oxides; Aldehydes; Hydrogen fluoride; Carbonyl halides; Other irritating fumes and smoke.

5.3 Advice 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

6.1 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.

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6.2 Environmental precautions

: Prevent product from entering drains, sewers, waterways and soil. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

6.3 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 only non-sparking tools. Use inert, non-combustible absorbents to assist the pick up of material. Do not use combustible absorbents, such as sawdust. 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.

6.4 Reference to other sections

: Refer to protective measures listed in sections 7 and 8. Refer to Section 13 for disposal of contaminated material.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

: 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 vapours or spray mist. 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. Use only non-sparking tools. Take precautionary measures against static discharge. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

7.2 Conditions for safe storage, including any incompatibilities

: 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. 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).

7.3 Specific end use(s) : Coating

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Exposure Limits:

Chemical Name	Exposure Limits	Type	Notes
Copper	1 mg/m³ (dust); 0.1 mg/m³ (fumes) (TWA) 2 mg/m³ (dust); 0.2 mg/m³ (fumes) (STEL)	Czech Republic (OEL)	None.
	1 mg/m³; 0.1 mg/m³ (Respirable dust) (TWA)	Finland (OEL)	None.
	0.2 mg/m³ (fumes); 1 mg/m³ (dust) (TWA) 2 mg/m³ (dust) (STEL)	France (OEL)	None.

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	1 mg/m³; 0.1 mg/m³ (fumes) (TWA) 4 mg/m³; 0.4 mg/m³ (fumes) (STEL)	Hungary (OEL)	None.
	None.	Italy (OEL)	None.
	0.1 mg/m³ (inhalable) (TWA)	Netherlands (OEL)	None.
	None.	Poland (OEL)	None.
	0.2 mg/m³ (fumes); 1 mg/m³ (dust) (TWA)	Spain (OEL)	None.
	1 mg/m³ (total dust); 0.2 mg/m³ (respirable dust)	Sweden (OEL)	None.
	0.2 mg/m³ (fumes); 1 mg/m³ (dust) (TWA) 2 mg/m³ (dust) (STEL)	The United Kingdom (WELs)	None.
Fluoropolymer	N/Av	European Union (OEL)	N/Av
Xylene	50 ppm (221 mg/m³) (TWA) 100 ppm (442 mg/m³) (STEL)	European Union (OEL)	Possibility of significant uptake through the skin
	200 mg/m³ (TWA) 400 mg/m³ (Ceiling Limit Value)	Czech Republic (OEL)	Potential for cutaneous absorption
	50 ppm (220 mg/m³) (TWA) 100 ppm (440 mg/m³) (STEL)	Finland (OEL)	Potential for cutaneous absorption
	50 ppm (221 mg/m³) (TWA) 100 ppm (442 mg/m³) (STEL)	France (OEL)	Risk of cutaneous absorption
	100 ppm (440 mg/m³) (exposure factor 2) (TWA)	Germany (OEL)	Skin notation
	221 mg/m³ (TWA) 442 mg/m³ (STEL)	Hungary (OEL)	Potential for cutaneous absorption
	50 ppm (221 mg/m³) (TWA) 100 ppm (442 mg/m³) (STEL)	Italy (OEL)	Skin - Potential for cutaneous absorption
	210 mg/m³ (TWA) 442 mg/m³ (STEL)	Netherlands (OEL)	Skin notation
	100 mg/m³ (TWA)	Poland (OEL)	Skin notation
	50 ppm (221 mg/m³) (TWA) 100 ppm (442 mg/m³) (STEL)	Spain (OEL)	Skin - Potential for cutaneous absorption
	50 ppm (220 mg/m³) (TWA) 100 ppm (441 mg/m³) (STEL)	The United Kingdom (WELs)	Potential for cutaneous absorption
Ethylbenzene	100 ppm (442 mg/m³) (TWA) 200 ppm (884 mg/m³) (STEL)	European Union (OEL)	Possibility of significant uptake through the skin

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	200 mg/m³ (TWA) 500 mg/m³ (Ceiling Limit Value)	Czech Republic (OEL)	Potential for cutaneous absorption
	50 ppm (220 mg/m³) (TWA) 200 ppm (880 mg/m³) (STEL)	Finland (OEL)	Potential for cutaneous absorption
	20 ppm (88.4 mg/m³) (TWA) 100 ppm (442 mg/m³) (STEL)	France (OEL)	Risk of cutaneous absorption
	20 ppm (88 mg/m³) (exposure factor 2) (TWA)	Germany (OEL)	Skin notation
	442 mg/m³ (TWA) 884 mg/m³ (STEL)	Hungary (OEL)	Potential for cutaneous absorption
	100 ppm (442 mg/m³) (TWA) 200 ppm (884 mg/m³) (STEL)	Italy (OEL)	Skin - Potential for cutaneous absorption
	215 mg/m³ (TWA) 430 mg/m³ (STEL)	Netherlands (OEL)	Skin notation
	200 mg/m³ (TWA) 400 mg/m³ (STEL)	Poland (OEL)	Skin notation
	100 ppm (441 mg/m³) (TWA) 200 ppm (884 mg/m³) (STEL)	Spain (OEL)	Skin - Potential for cutaneous absorption
	100 ppm (441 mg/m³) (TWA) 125 ppm (552 mg/m³) (STEL)	The United Kingdom (WELs)	Potential for cutaneous absorption
2-Methoxy-1-methylethyl acetate			
	50 ppm (275 mg/m³) (TWA) 100 ppm (550 mg/m³) (STEL)	European Union (OEL)	Possibility of significant uptake through the skin
	270 mg/m³ (TWA) 550 mg/m³ (Ceiling Limit Value)	Czech Republic (OEL)	Potential for cutaneous absorption
	50 ppm (270 mg/m³) (TWA) 100 ppm (550 mg/m³) (STEL)	Finland (OEL)	Potential for cutaneous absorption
	50 ppm (275 mg/m³) (TWA) 100 ppm (550 mg/m³) (STEL)	France (OEL)	Risk of cutaneous absorption
	50 ppm (270 mg/m³) (TWA)	Germany (OEL)	(exposure factor 1)
	275 mg/m³ (TWA) 550 mg/m³ (STEL)	Hungary (OEL)	None.
	50 ppm (275 mg/m³) (TWA) 100 ppm (550 mg/m³) (STEL)	Italy (OEL)	Skin - Potential for cutaneous absorption
	550 mg/m³ (TWA)	Netherlands (OEL)	None.
	260 mg/m³ (TWA) 520 mg/m³ (STEL)	Poland (OEL)	None.
	50 ppm (275 mg/m³) (TWA) 100 ppm (550 mg/m³) (STEL)	Spain (OEL)	Skin - Potential for cutaneous absorption

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	50 ppm (250 mg/m³) (TWA) 75 ppm (400 mg/m³) (STEL)	Sweden (OEL)	Skin notation
	50 ppm (274 mg/m³) (TWA) 100 ppm (548 mg/m³) (STEL)	The United Kingdom (WELs)	Potential for cutaneous absorption
silver			
	0.1 mg/m³ (TWA)	European Union (OEL)	None.
	0.1 mg/m³ (TWA) 0.3 mg/m³ (Ceiling Limit Value)	Czech Republic (OEL)	None.
	0.1 mg/m³ (TWA)	Finland (OEL)	None.
	0.1 mg/m³ (TWA)	France (OEL)	None.
	0.1 mg/m³ (inhalable) (TWA)	Germany (OEL)	(exposure factor 8)
	0.1 mg/m³ (TWA) 0.4 mg/m³ (STEL)	Hungary (OEL)	None.
	0.1 mg/m³ (TWA)	Italy (OEL)	None.
	0.1 mg/m³ (TWA)	Netherlands (OEL)	None.
	0.05 mg/m³ (TWA)	Poland (OEL)	None.
	0.1 mg/m³ (TWA)	Spain (OEL)	None.
	0.1 mg/m³ (TWA)	Sweden (OEL)	None.
	0.1 mg/m³ (TWA)	The United Kingdom (WELs)	None.

Biological Exposure Indices:

Chemical Name	Biological Exposure Indices	Type
Xylene		
	650 mmol/mol Creatinine, Determinant: Methylhippuric acid, Specimen: Urine	UK. EH40 Biological Monitoring Guidance Values (BMGVs)
	1 g/g Creatinine, Determinant: Methylhippuric acid, Specimen: Urine	Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4
	1.5 mg/L, Determinant: Xylene, Specimen: Blood 2000 mg/L, Determinant: Methylhippuric(tolur-) acid, Specimen: Urine	Germany. TRGS 903, BAT List (Biological Limit Values)
	5 mmol/L ,Determinant: Methylhippuric acid, Specimen: Urine	Finland. HTP-arvot, App 2, Biological Limit Values, (BRA/BGV), Social Affairs and Ministry of Health
	1500 mg/g Creatinine, Determinant: Methylhippuric acid, Specimen: Urine	France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)
	1500 mg/g Creatinine, Determinant: Methylhippuric acid, Specimen: Urine 860 µmol/mmol Creatinine, Determinant: Methylhippuric acid, Specimen: Urine	Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices
Ethylbenzene		
	300 mg/g, Determinant: Mandelic acid plus Phenylglyoxylic acid, Specimen: Urine	Germany. TRGS 903, BAT List (Biological Limit Values)

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	700 mg/g Creatinine, Determinant: Mandelic acid plus Phenylglyoxylic acid, Specimen: Urine	Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4
	5.2 mmol/L, Determinant: Mandelic acid, Specimen: Urine	Finland. HTP-arvot, App 2, Biological Limit Values, (BRA/BGV), Social Affairs and Ministry of Health
	1500 mg/g Creatinine, Determinant: Mandelic acid (Non-specific (observed after the exposure to other substances)), Specimen: Urine	France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)
	1500 mg/g Creatinine, Determinant: Mandelic acid, Specimen: Urine 1110 µmol/mmol Creatinine, Determinant: Mandelic acid, Specimen: Urine	Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

No biological exposure limits noted for the ingredient(s).

Derived No Effect Level (DNEL):
(7440-50-8) workers dermal systemic effects long term exposure 137 mg/kg bw/day; ; workers dermal systemic effects acute/short term exposure 273 mg/kg bw/day
(1330-20-7) general population oral systemic effects long term exposure 12.5 mg/kg bw/day ; general population inhalation systemic effects long term exposure 65.3 mg/m3 ; general population inhalation local effects long term exposure 65.3 mg/m3; general population dermal systemic effects long term exposure 125 mg/kg bw/day ; workers dermal systemic effects long term exposure 212 mg/kg bw/day ; workers inhalation systemic effects long term exposure 221 mg/m3 ; workers inhalation local effects long term exposure 221 mg/m3 ; general population inhalation systemic effects acute/short term exposure 260 mg/m3 ; general population inhalation local effects acute/short term exposure 260 mg/m3 ; workers inhalation systemic effects acute/short term exposure 442 mg/m3 ; workers inhalation local effects acute/short term exposure 442 mg/m3
(CAS 7440-22-4) general population inhalation systemic effects long term exposure 0.04 mg/m3; workers inhalation systemic effects long term exposure 0.1 mg/m3 ; general population oral systemic effects long term exposure 1.2 mg/kg bw/day
Predicted No Effect Concentration (PNEC):

(CAS 7440-50-8) 7.8 µg/L (freshwater); 5.2 µg/L (marine water; 87 mg/kg (sediment (freshwater);676 mg/kg (sediment (marine water); 230 µg/L (sewage treatment); 65 mg/kg (soil)

(CAS 1330-20-7) 0.327 mg/L (freshwater); 0.327 mg/L (marine water, 215-535-7); 0.327 mg/L (freshwater (intermittent releases); 12.46 mg/kg (sediment (freshwater), ; 12.46 mg/kg (sediment (marine water) ; 6.58 mg/L (sewage treatment); 2.31 mg/kg (soil)
(CAS 7440-22-4)0.04 µg/L (freshwater); 0.86 µg/L (marine water); 438.13 mg/kg (sediment (freshwater)); 438.13 mg/kg (sediment (marine water); 0.025 mg/L (sewage treatment); 1.41 mg/kg (soil)

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8.2 Exposure controls

Ventilation and engineering measures

: 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. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use explosion-proof electrical and ventilating equipment. In case of insufficient ventilation wear suitable respiratory equipment.

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Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Advice should be sought from respiratory protection specialists.

Skin protection : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Wear suitable protective clothing. Depending on conditions of use, an impervious apron should be worn.

Eye / face protection : Wear eye/face protection. Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles. A full face shield may also be necessary. See also EN 166.

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.

8.3 Environmental exposure controls

: Avoid release to the environment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state : Brownish, copper coloured liquid.
Colour : Copper
Odour : Solvent odor.
Odour threshold : No information available.
pH : No information available.
Flash point : 28.9°C (based on ingredients)
Flashpoint (Method) : closed cup
Lower flammable limit (% by vol.)

: No information available.

Upper flammable limit (% by vol.)

: No information available.

Auto-ignition temperature

: No information available.

Decomposition temperature

: No information available.
Oxidizing properties : Not applicable
Explosive properties : Not explosive
Initial boiling point and boiling range

: No information available.
Melting/Freezing point : No information available.
Relative density : 2.78
Solubility in water : insoluble

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Other solubility(ies) : No information available.
Vapour pressure : No information available.
Vapour density : > 1 (Air = 1.0)
Partition coefficient: n-octanol/water
: No information available.
Viscosity : No information available.
Evaporation rate (BuAe = 1)
: No information available.
Particle characteristics : Not applicable.

9.2 Other Information

Volatiles (% by weight) : 11.8%
Volatile organic Compounds (VOC's)
: 329 g/L
Other physical/chemical comments
: No additional information.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity : Not normally reactive.
10.2 Chemical stability : Stable under normal conditions. After prolonged storage, may release explosive peroxides in the presence of air. Rate of peroxide formation is not known.
10.3 Possibility of hazardous reactions
: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
10.4 Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
10.5 Incompatible materials
: Strong oxidizing agents; Strong acids; Strong bases
10.6 Hazardous decomposition products
: None known.
Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; Metal oxides; Aldehydes; Hydrogen fluoride; Carbonyl halides; Other irritating fumes and smoke.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects:

Acute toxicity : According to the classification criteria of the European Union, this product is not considered as being an acutely toxic chemical.
Skin corrosion/Irritation : Causes skin irritation. Symptoms may include redness, itching and swelling.
Serious eye damage/irritation
: Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Respiratory or skin sensitisation
: According to the classification criteria of the European Union, this product is not considered as being an allergic respiratory sensitiser.
According to the classification criteria of the European Union, this product is not considered as being an allergic skin sensitiser.

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Germ cell mutagenicity : Contains no ingredient listed as a mutagen.

Carcinogenicity : According to the classification criteria of the European Union, the product is not considered as being a carcinogen.

Reproductive toxicity : According to the classification criteria of the European Union, this product is not considered as being toxic to reproduction.

STOT-single exposure : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through a single exposure.

STOT-repeated exposure : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through repeated exposures.

Aspiration hazard : According to the classification criteria of the European Union, this product is not considered as being an aspiration hazard to humans.

Routes of exposure : Inhalation; Eye contact; Skin contact; Skin Absorption; Ingestion

Effects of acute exposure : 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.

Skin contact: Causes skin irritation. May cause redness and pain. Can be absorbed through skin.

Eye contact: Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling and blurred vision.

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

Potential Chronic Health Effects

: Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.
Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

11.1.1 Acute Toxicity

Toxicological data : No data is available on the product itself. The calculated ATE values for this mixture are:
ATE dermal = 14 825 mg/kg
ATE inhalation (vapours) = 104.1 mg/L/4H

See below for individual ingredient acute toxicity data.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Copper	> 5.11 mg/L (dust) (No mortality)	> 2500 mg/kg	> 2000 mg/kg
Fluoropolymer	N/Av	N/Av	N/Av
Xylene	6350 ppm (27.6 mg/L) (vapour)	3253 mg/kg	12 180 mg/kg
Ethylbenzene	4000 ppm (17.4 mg/L) (vapour)	3500 mg/kg	15 380 mg/kg
2-Methoxy-1-methylethyl acetate	> 5320 ppm (28.7 mg/L) (vapour)	8532 mg/kg	> 19 200 mg/kg
silver	> 5.16 mg/L (dust) (No mortality)	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)

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11.2 Information on other Hazards

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

11.2.1 Endocrine disrupting properties :Not applicable
11.2.2 Other hazards Not applicable

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity : No data is available on the product itself. The product contains the following substances which are hazardous for the environment: Xylene; Ethylbenzene. Copper. Silver. Should not be released into the environment.
See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Copper	7440-50-8	0,0068mg/L	N/Av	None.
Fluoropolymer	88795-12-4	N/Av	N/Av	None.
Xylene	1330-20-7	8.2 mg/L (Rainbow trout)	No information available.	None.
Ethylbenzene	100-41-4	4.2 mg/L (Rainbow trout)	1.13 mg/L (30 days) (QSAR)	None.
2-Methoxy-1-methylethyl acetate	108-65-6	> 100 mg/L (Japanese ricefish)	No information available.	None.
silver	7440-22-4	0.00155mg/L	N/Av	10

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Copper	7440-50-8	0.03mg/L	N/Av	None.
Fluoropolymer	88795-12-4	N/Av	N/Av	None.
Xylene	1330-20-7	3.2 - 9.56 mg/L (Daphnia magna)	No information available.	None.
Ethylbenzene	100-41-4	1.81 mg/L (Daphnia magna)	No information available.	None.
2-Methoxy-1-methylethyl acetate	108-65-6	373 mg/L (Daphnia magna)	> 100 mg/L	None.
silver	7440-22-4	0.00024mg/L	N/Av	10

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Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Copper	7440-50-8	0.0426mg/L	N/Av	None.
Fluoropolymer	88795-12-4	N/Av	N/Av	None.
Xylene	1330-20-7	3.2 - 4.9 mg/L/72hr (Green algae)	No information available.	None.
Ethylbenzene	100-41-4	3.6 mg/L/96hr (Green algae)	3.4 mg/L/96hr	None.
2-Methoxy-1-methylethyl acetate	108-65-6	> 1000 mg/L/72hr (Green algae)	No information available.	None.
silver	7440-22-4	N/Av	N/Av	None.

12.2 Persistence and degradability

: The product itself has not been tested.
The following ingredients are considered to be readily biodegradable:
2-Methoxy-1-methylethyl acetate.
Contains the following chemicals which are considered to be inherently biodegradable:
Xylene; Ethylbenzene.
Contains the following chemicals which are not readily biodegradable: silver; Copper.

12.3 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
Ethylbenzene (CAS 100-41-4)	3.15	1.1 - 1.5
2-Methoxy-1-methylethyl acetate (CAS 108-65-6)	0.36	No information available.

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

12.5 Results of PBT and vPvB assessment

: This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6 Endocrine disrupting properties

: Not applicable

12.7 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.

12.8 Additional information : Not applicable

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended. This safety data sheet complies with the requirements of UK REACH Regulation.

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Methods of Disposal : Dispose of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	**14.1 UN Number**	**14.2 UN proper shipping name**	**14.3 Transport hazard class(es)**	**14.4 Packing Group**	*Label*
IMDG	UN1866	RESIN SOLUTION	3	III	
IMDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. EmS No.F-E, S-E				
ADR/RID	UN1866	RESIN SOLUTION	3	III	
EU ADR/RID Classification Code	F1 - Flammable liquids having a flash-point of or below 60 °C				
EU ADR / RID Hazard Identification Number	30 - flammable liquid (flash-point between 23 °C and 60 °C, inclusive) or flammable liquid or solid in the molten state with a flash-point above 60 °C, heated to a temperature equal to or above its flash-point, or self-heating liquid.				
ADR/RID Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Tunnel Code:3(E)				
ICAO/IATA	UN1866	Resin solution	3	III	
ICAO/IATA Additional information	Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.				

14.5 Environmental hazards : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See Section 12 for more environmental information.

14.6 Special precautions for user

: Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame - No smoking.

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

: Not applicable.

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SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

: Classification according to Regulation (EC) No. 1272/2008 on the classification of hazardous substances and mixtures.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended:
None of the components are specifically listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended Refer to restrictions found in REACH Annex XVII item 75. :

Directive 2012/18/EU (Seveso III) on the control of major-accident hazards involving dangerous substances:
P5c FLAMMABLE LIQUIDS

Directive 98/24/EC on the protection of the health and safety of workers from risks related to chemical agents at work:
Xylene (CAS # 1330-20-7)
Ethylbenzene (CAS # 100-41-4)
2-Methoxy-1-methylethyl acetate (CAS # 108-65-6)

Directive 94/33/EC on the protection of young people at work:
Ethylbenzene (CAS # 100-41-4)
Xylene (CAS # 1330-20-7)
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended [including Regulation (EU) 2020/878].

Follow national regulation for work with chemical agents.

German legislation on water endangering substances AWSV: Water contaminating class (Germany): 3 (self classified)

15.2 Chemical safety assessment

: A chemical safety assessment has not been carried out by the Manufacturer of this product.

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SECTION 16. OTHER INFORMATION

Legend : ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstract Services
CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
EC: European Community
EC50: Effective Concentration 50%
EEC: European Economic Community
EN: European Standard
EU: European Union
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
IMDG: International Maritime Dangerous Goods
LC: Lethal Concentration
LD: Lethal Dose
NOEC: No observable effect concentration
OECD: Organisation for Economic Co-operation and Development
OEL: National occupational exposure limits
PEL: Permissible exposure limit
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
STEL: Short Term Exposure Limit
TWA: Time Weighted Average

Information Source : 1. Material Safety Data Sheet from manufacturer.
2. Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases
3. European Chemicals Agency, Classification Legislation
4. OECD - The Global Portal to Information on Chemical Substances

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Regulation and Procedure :

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Based on expert judgement:
Flammable.
Skin irritation
Eye irritation
Aquatic toxicity

H-phrases (full-text)

EUH066 - Repeated exposure may cause skin dryness or cracking.
H225 - Highly flammable liquid and vapour.
H226 - Flammable liquid and vapour.
H304 - May be fatal if swallowed and enters airways.
H312 - Harmful in contact with skin.
H315 - Causes skin irritation.
H332 - Harmful if inhaled.
H373 - May cause damage to organs (a,b,c) through prolonged or repeated exposure.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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