CONDUCTIVE SILVER COATING 3830

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

Product Detail : 3830 Conductive Silver Coating
Application of the substance / the preparation: Surface Coating. For professional use only.
Manufacturer / supplier:

Holland Shielding Systems B.V.
Jacobus Lipsweg 124
3316 BP Dordrecht
the Netherlands
Ph: +31(0)78- 204 90 00
Fax: +31(0)78- 204 90 08
www.hollandshielding.com
info@hollandshielding.com

NVIC Netherland, National Poison Information Center, Tel: +31 (0)30 2748888
(in case of an emergency only to be reached by a medical person)

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Classification (CLP)	
Flammable liquids H225 Highly flammable liquid and vapour.	Category 2
Serious eye irritation H319 Causes serious eye irritation.	Category 2
Specific target organ toxicity - single exposure H336 May cause drowsiness or dizziness.	Category 3
Carcinogenicity H351 Suspected of causing cancer.	Category 2
Acute hazards to the aquatic environment H400 Very toxic to aquatic life.	Category 1
Chronic hazards to the aquatic environment H410 Very toxic to aquatic life with long lasting effects.	Category 1

2.2. Label elements

Hazard pictogram	
Contains	4-methylpentan-2-one
Signal word	Danger
Hazard statement	H225 Highly flammable liquid and vapor. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H410 Very toxic to aquatic life with long lasting effects.
Supplemental information	EUH066 Repeated exposure may cause skin dryness or cracking
Precautionary statement Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing mist/spray. P280 Wear eye protection/face protection.
Precautionary statement Response	P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Precautionary statement Storage	P403+P235 Store in a well-ventilated place. Keep cool.

Label elements (CLP)

2.3. Other hazards

None if used properly.

Following substances are present in a concentration ≥ the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration ≥ the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

Revision date: 31-01-2024

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4 231-131-3 01-2119555669-21	40- 60 %	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 10 M chronic = 10	EU OEL
4-methylpentan-2-one 108-10-1 203-550-1 01-2119473980-30	40- < 52 %	Acute Tox. 4, Inhalation, H332 Carc. 2, H351 Flam. Liq. 2, H225 STOT SE 3, H336 Eye Irrit. 2, H319	inhalation:ATE = 11 mg/l;vapour	EU OEL
methanol 67-56-1 200-659-6 01-2119433307-44	0,1- < 1 %	Acute Tox. 4, Inhalation, H332 Carc. 2, H351 Flam. Liq. 2, H225 STOT SE 3, H336 Eye Irrit. 2, H319	STOT SE 1; H370; C >= 10 % STOT SE 2; H371; C 3- < 10 % ===== oral:ATE = 300 mg/kg	EU OEL

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.
For full text of the H- statements and other abbreviations see section 16 "Other information".

4. FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	Fresh air, oxygen supply, warmth; seek specialist medical attention.
Skin contact	Immediately wash skin thoroughly with soap and water.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of adverse health effects seek medical advice.
Ingestion	Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

EYE: Irritation, conjunctivitis.
Vapors may cause drowsiness and dizziness.

4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:
Carbon dioxide, foam, powder.
Fine water spray.

Extinguishing media which must not be used for safety reasons:
Water jet (solvent-containing product).

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear protective equipment.
Wear self-contained breathing apparatus.

Additional information:
Cool endangered containers with water spray jet.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes.
Danger of slipping on spilled product.

6.2. Environmental precautions
Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up
Dispose of contaminated material as waste according to Section 13.
Remove with liquid-absorbing material (sand, peat, sawdust).

6.4. Reference to other sections
See advice in section 8.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling
Avoid skin and eye contact.
Ensure that workrooms are adequately ventilated.
See advice in section 8
Take measures to prevent the build-up of electrostatic charges.
Avoid open flames and sources of ignition.
Ground/bond container and receiving equipment.
Use explosion proof electric equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities
Ensure good ventilation/extraction.
Temperatures between+ 5 °C and + 30 °C.

7.3. Specific end use(s)
EMC product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational Exposure Limits
Valid for The Netherlands

Ingredients	ppm	mg/m³	Type	Category	Remarks
4-methylpentaan-2-on 108-10-1 [4-METHYLPENTAAN-2-ON]	20	83	Time Weighted Average (TWA):	Indicative	ECTLV
4-methylpentaan-2-on 108-10-1 [4-METHYLPENTAAN-2-ON]	50	208	Short Term Exposure Limit (STEL):	Indicative	ECTLV
4-methylpentaan-2-on 108-10-1 [4-METHYLPENTAAN-2-ON]	25	104	Time Weighted Average (TWA):		NL OEL
4-methylpentaan-2-on 108-10-1 [4-METHYLPENTAAN-2-ON]	50	208	Permitted short-term	15 minutes	NL OEL
Silver 7440-22-4 [SILVER, METALLIC]		0.1	Time Weighted Average (TWA):	Indicative	ECTLV

Jacobus Lipsweg 124, NL-3316 BP
Dordrecht, The Netherlands
Ph: +31(0)78 - 204 90 00
Fax: +31(0)78 - 204 90 08
info@hollandshielding.com
hollandshielding.com

Silver 7440-22-4 [SILVER, METALLIC]		0.1	Time Weighted Average (TGA):		NL OEL
Methanol 67-56-1 [METHANOL]	200	260	Time Weighted Average (TWA):	Indicative	ECTLV
Methanol 67-56-1 [METHANOL]			Skin notation:	Can be absorbed through the skin.	NL OEL
Methanol 67-56-1 [METHANOL]	100	133	Time Weighted Average (TGG):		NL OEL
methanol 67-56-1 [Methanol]			Skin notation:	Can be absorbed through the skin.	NL OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposed period	Value				Remarks
			mg/1	ppm	mg/kg	others	
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	aqua (freshwater)		0,00004 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	aqua (marine water)		0,00086 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sewage treatment plant (STP)		0,025 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sediment (freshwater)				438,13 mg/kg		
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sediment (marine water)				438,13 mg/kg		
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Air						no hazard identified
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Soil				1,41 mg/kg		
4-methylpentan-2-one 108-10-1	aqua (freshwater)		0,6 mg/l				
4-methylpentan-2-one 108-10-1	aqua (marine water)		0,6 mg/l				
4-methylpentan-2-one 108-10-1	sediment (freshwater)				8,27 mg/kg		
4-methylpentan-2-one 108-10-1	sediment (marine water)				0,83 mg/kg		
4-methylpentan-2-one 108-10-1	Soil				1,3 mg/kg		
4-methylpentan-2-one 108-10-1	sewage treatment plant (STP)		27,5 mg/l				
4-methylpentan-2-one 108-10-1	aqua (intermittent releases)		1,5 mg/l				
methanol 67-56-1	aqua (freshwater)						no hazard identified
methanol 67-56-1	sediment (freshwater)						no hazard identified
methanol 67-56-1	aqua (marine water)						no hazard identified

methanol 67-56-1	Soil					no hazard identified
methanol 67-56-1	sewage treatment plant (STP)					no hazard identified
methanol 67-56-1	aqua (intermittent releases)					no hazard identified
methanol 67-56-1	sediment (marine water)					no hazard identified

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Workers	inhalation	Long term exposure- systemic effects		0,1 mg/m3	no hazard identified
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	General population	inhalation	Long term exposure- systemic effects		0,04 mg/m3	no hazard identified
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	General population	oral	Long term exposure- systemic effects		1,2 mg/kg	no hazard identified
4-methylpentan-2-one 108-10-1	Workers	inhalation	Acute/short term exposure- systemic effects		208 mg/m3	
4-methylpentan-2-one 108-10-1	Workers	inhalation	Acute/short term exposure- local effects		208 mg/m3	
4-methylpentan-2-one 108-10-1	Workers	inhalation	Long term exposure- systemic effects		83 mg/m3	
4-methylpentan-2-one 108-10-1	Workers	inhalation	Long term exposure- local effects		83 mg/m3	
4-methylpentan-2-one 108-10-1	Workers	dermal	Long term exposure- systemic effects		11,8 mg/kg	
4-methylpentan-2-one 108-10-1	General population	inhalation	Acute/short term exposure- systemic effects		155,2 mg/m3	
4-methylpentan-2-one 108-10-1	General population	inhalation	Acute/short term exposure- local effects		155,2 mg/m3	
4-methylpentan-2-one 108-10-1	General population	inhalation	Long term exposure- systemic effects		14,7 mg/m3	
4-methylpentan-2-one 108-10-1	General population	inhalation	Long term exposure- local effects		14,7 mg/m3	
4-methylpentan-2-one 108-10-1	General population	dermal	Long term exposure- systemic effects		4,2 mg/kg	
4-methylpentan-2-one 108-10-1	General population	oral	Long term exposure- systemic effects		4,2 mg/kg	
methanol 67-56-1	Workers	inhalation	Long term exposure- systemic effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	inhalation	Acute/short term exposure- systemic effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	inhalation	Long term exposure- local effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	inhalation	Acute/short term exposure- local effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	dermal	Long term exposure- systemic effects		40 mg/kg	no hazard identified
methanol 67-56-1	Workers	dermal	Acute/short term exposure- systemic effects		40 mg/kg	no hazard identified
methanol 67-56-1	General population	inhalation	Long term exposure- systemic effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	inhalation	Acute/short term exposure- systemic effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	inhalation	Long term exposure- local effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	inhalation	Acute/short term exposure- local effects		50 mg/m3	no hazard identified

Jacobus Lipsweg 124, NL-3316 BP
Dordrecht, The Netherlands
Ph: +31(0)78 - 204 90 00
Fax: +31(0)78 - 204 90 08
info@hollandshielding.com
hollandshielding.com

methanol 67-56-1	General population	dermal	Long term exposure- systemic effects	8 mg/kg	no hazard identified
methanol 67-56-1	General population	dermal	Acute/short term exposure- systemic effects	8 mg/kg	no hazard identified
methanol 67-56-1	General population	oral	Acute/short term exposure- systemic effects	8 mg/kg	no hazard identified
methanol 67-56-1	General population	oral	Acute/short term exposure- systemic effects	8 mg/kg	no hazard identified

Biological exposure indices:
None

8.2. Exposure controls

Engineering controls	Ensure good ventilation/extraction.
Respiratory protection	In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387). This recommendation should be matched to local conditions.
Hand protection	Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Fluorinated rubber (FKM; >= 0.7 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Fluorinated rubber (FKM; >= 0.7 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.
Eye protection	Protective eye equipment should conform to EN166. Protective goggles
Skin protection	Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts. Suitable protective clothing
Advices to personal protection equipment	The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Delivery form	liquid
Colour	silver
Odor	Solvent
Physical state	liquid
Melting point	Not applicable, Product is a liquid
Solidification temperature	< 0 °C (< 32 °F)
Initial boiling point	116 °C (240.8 °F)
Flammability	Flammable liquid
Explosive limits	
lower	1,2 %(V);
upper	8,0 %(V);
Flash point	14 °C (57.2 °F); no method / method unknown
Auto-ignition temperature	> 200 °C (> 392 °F)
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH	Not applicable, Product is non-soluble (in water).
Viscosity (kinematic) (20 °C (68 °F);)	> 20,5 mm2/s
Viscosity, dynamic (Brookfield; Instrument: RVT; 20 °C (68 °F); speed of rotation: 20 min-1)	600- 1.200 mPa.s no method / method unknown
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Not applicable Mixture
Vapour pressure (20 °C (68 °F))	< 20 hPa
Vapour pressure (50 °C (122 °F))	< 100 hPa
Density (20 °C (68 °F))	1,34 g/cm3 no method / method unknown

Relative vapour density: (20 °C)	> 1
Particle characteristics	Not applicable Product is a liquid

9.2. Other information
Other information not applicable for this product

10. STABILITY AND REACTIVITY

10.1. Reactivity
Reaction with strong oxidants.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity.

10.4. Conditions to avoid
No decomposition if used according to specifications.

10.5. Incompatible materials
See section reactivity.

10.6. Hazardous decomposition products
None if used for intended purpose.
In case of fire toxic gases can be released.

11. TOXICOLOGICAL INFORMATION

Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	Rat	OECD Guideline 401 (Acute Oral Toxcity)
4-methylpentan-2-one 108-10-1	LD50	2.080 mg/kg	Rat	Equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Methanol 67-56-1	Acute toxicity estimate (ATE)	300 mg/kg		Expert judgement

Acute dermal toxicity:
The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	Rat	OECD Guideline 402 (Acute Dermal Toxicity)
4-methylpentan-2-one 108-10-1	LD50	> 2.000 mg/kg	Rat	OECD Guideline 402 (Acute Dermal Toxicity)
4-methylpentan-2-one 108-10-1	LD0	>= 2.000 mg/kg	Rat	OECD Guideline 402 (Acute Dermal Toxicity)

Jacobus Lipsweg 124, NL-3316 BP
Dordrecht, The Netherlands
Ph: +31(0)78 - 204 90 00
Fax: +31(0)78 - 204 90 08
info@hollandshielding.com
hollandshielding.com

CONDUCTIVE SILVER COATING 3830

Acute inhalative toxicity:
The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
4-methylpentan-2-one 108-10-1	Acute toxicity estimate (ATE)	11 mg/l	vapour			Expert judgement
4-methylpentan-2-one 108-10-1	LD50	8,2 - 16,4 mg/l	vapour	4 h	Rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation:
The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Exposure time	Species	Method
4-methylpentan-2-one 108-10-1	not irritating	4 h	Rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
methanol 67-56-1	not irritating	20 h	Rabbit	BASF Test

Serious eye damage/irritation:
The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Exposure time	Species	Method
4-methylpentan-2-one 108-10-1	slightly irritating		Rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
methanol 67-56-1	not irritating		Rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:
The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Test type	Species	Method
4-methylpentan-2-one 108-10-1	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
methanol 67-56-1	not sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:
The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	negative	in vitro mammalian cell micronucleus test	with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
4-methylpentan-2-one 108-10-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
4-methylpentan-2-one 108-10-1	negative	in vitro mammalian chromosome aberration test	without		equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
4-methylpentan-2-one 108-10-1	ambiguous without metabolic activation	mammalian cell gene mutation assay	with and without		equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

methanol 67-56-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
methanol 67-56-1	negative	in vitro mammalian cell micronucleus test	without		not specified
methanol 67-56-1	negative	mammalian cell gene mutation assay	with and without		equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
4-methylpentan-2-one 108-10-1	negative	intraperitoneal		mouse	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
methanol 67-56-1	negative	intraperitoneal		mouse	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Carcinogenicity
The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
4-methylpentan-2-one 108-10-1		inhalation: vapour	2 y 6 h/d, 5 d/w	rat	**male/female**	OECD Guideline 451 (Carcinogenicity Studies)
methanol 67-56-1	not carcinogenic	inhalation: vapour	18 m 19 h/d	mouse	**male/female**	equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Reproductive toxicity:
The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result / Value	Test type	Route of application	Species	Method
4-methylpentan-2-one 108-10-1		Screening	oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
4-methylpentan-2-one 108-10-1		One generation study	oral: gavage	rat	OECD Guideline 415 (One-Generation Reproduction Toxicity Study)
4-methylpentan-2-one 108-10-1		Two generation study	oral: gavage	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
methanol 67-56-1	NOAEL P 1,3 mg/l NOAEL F1 0,13 mg/l NOAEL F2 0,13 mg/l	Two generation study	inhalation	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:
May cause respiratory irritation.
No substance data available.

STOT-repeated exposure::
The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
4-methylpentan-2-one 108-10-1	NOAEL 250 mg/kg	oral: gavage	13 w daily	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
methanol 67-56-1	NOAEL 6,63 mg/l	inhalation: vapour	4 weeks 6 h/d, 5 d/w	rat	equivalent or similar to OECD Guideline 412 (Repeated Dose Inhalation Toxicity: 28/14-Day)
methanol 67-56-1	NOAEL 0,13 mg/l	inhalation: vapour	12 m 20 h/d	rat	equivalent or similar to OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Jacobus Lipsweg 124, NL-3316 BP
Dordrecht, The Netherlands
Ph: +31(0)78 - 204 90 00
Fax: +31(0)78 - 204 90 08
info@hollandshielding.com
hollandshielding.com

Aspiration hazard:
No data available.

11.2 Information on other hazards
not applicable

12. ECOLOGICAL INFORMATION

General ecological information
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.
Do not empty into drains / surface water / ground water.

12.1. Toxicity

Toxicity (Fish):
The mixture is classified based on calculation method referring to the classified substances present in the mixture.
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Exposure time	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LC50	0,0012 mg/l	96 h	Pimephales promelas	other guideline:
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00019 mg/l	217 d	Salmo trutta	OECD Guideline 210 (fish early lite stage toxicity test)
4-methylpentan-2-one 108-10-1	LC50	600 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
methanol 67-56-1	LC50	15.400 mg/l	96 h	Lepomis macrochirus	EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians)
methanol 67-56-1	NOEC	7.900 mg/l	200 h	Oryzias latipes	OECD Guideline 210 (fish early lite stage toxicity test)

Toxicity (aquatic invertebrates):
The mixture is classified based on calculation method referring to the classified substances present in the mixture.
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Exposure time	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC50	0,00022 mg/l	48 h	Daphnia magna	other guideline:
4-methylpentan-2-one 108-10-1	EC50	170 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
methanol 67-56-1	EC50	18.260 mg/l	96 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Exposure time	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	NOEC	0,00032 mg/l	21 d	Daphnia magna	EPA OPPTS 850.1300 (Daphnid Chronic Toxicity Test)

Toxicity (Algae):
The mixture is classified based on calculation method referring to the classified substances present in the mixture.
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Exposure time	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00016 mg/l	15 d	other:	other guideline:
4-methylpentan-2-one 108-10-1	EC50	400 mg/l	96 h	Selenastrum capricornutum (new name: Pseudokirch-neriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
methanol 67-56-1	EC50	22.000 mg/l	96 h	Selenastrum capricornutum (new name: Pseudokirch-neriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity (microorganisms):
The mixture is classified based on calculation method referring to the classified substances present in the mixture.
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Value type	Value	Exposure time	Species	Method
4-methylpentan-2-one 108-10-1	EC0	275 mg/l	16 h		not specified
methanol 67-56-1	EC50	> 1.000 mg/l	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Degradability	Exposure time	Method
Methylisobutylketon 108-10-1	Readily biodegradable	Aerobic	99%	7 day	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Methanol 67-56-1	Readily biodegradable	Aerobic	82 - 92%	30 day	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)

12.3. Bioaccumulative potential
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	70	42 d	20 °C	Cyprinus carpio	other guideline:
methanol 67-56-1	< 10	72 h		Leuciscus idus melanotus	not specified

12.4. Mobility in soil
The table below presents the data of the classified substances present in the mixture.

Hazardous components CAS-No.	LogPow	Temperature	Method
4-methylpentan-2-one 108-10-1	1,31	20 °C	not specified
methanol 67-56-1	-0,77		other guideline:

Jacobus Lipsweg 124, NL-3316 BP
Dordrecht, The Netherlands
Ph: +31(0)78 - 204 90 00
Fax: +31(0)78 - 204 90 08
info@hollandshielding.com
hollandshielding.com

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
4-methylpentan-2-one 108-10-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Methanol 67-56-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties
not applicable

12.7. Other adverse effects
The product contains organic solvents which are insoluble in water. According to the requirements of the ATV regulations for the dis charge of wastewater from commercial and industrial plant, organic solvents which are immiscible with water can only be dis charged to an extent which corresponds to their solubility in water. The local discharge regulations take precedence.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Product disposal
In consultation with the responsible local authority, must be subjected to special treatment.

Waste code
080111
The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

14. TRANSPORT INFORMATION

14.1. UN number

ADR	1263
RID	1263
ADN	1263
IMDG	1263
IATA	1263

14.2. UN proper shipping name

ADR	PAINT
RID	PAINT
ADN	PAINT
IMDG	PAINT (Silver)
IATA	PAINT

14.3 Transport hazard class(es)

ADR	3
RID	3
ADN	3
IMDG	3
IATA	3

14.4 Packaging group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

14.5 Environmental hazards

ADR	Environmentally Hazardous
RID	Environmentally Hazardous
ADN	Environmentally Hazardous
IMDG	Marine pollutant
IATA	Not applicable

14.6 Special precautions for user

ADR	Special provision 640D Tunnelcode: (D/E)
RID	Special provision 640D
ADN	Special provision 640D
IMDG	Not applicable
IATA	Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009): Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021): Not applicable
VOC content 52.6 %
(2010/75/EU)

15.2 Chemical safety assessment
A chemical safety assessment has not been carried out.

Remarks	Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, e.g COSHH Essentials. EH40 Occupational Exposure Limits Chemicals (Hazard Information & Packaging for Supply) Regulations. The Personnel Protective Equipment at Work Regulations. The Carriage of Dangerous Goods by Road Regulations. The Health & Safety at Work Act 1974. (Note: Use latest editions/amendments of above referenced documents.)

16. OTHER INFORMATION
The labeling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H311	Toxic in contact with skin
H319	Causes serious eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H370	Causes damage to organs
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Jacobus Lipsweg 124, NL-3316 BP
Dordrecht, The Netherlands
Ph: +31(0)78 - 204 90 00
Fax: +31(0)78 - 204 90 08
info@hollandshielding.com
hollandshielding.com

CONDUCTIVE SILVER COATING 3830

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information

This Safety Data Sheet has been produced for Holland Shielding Systems to parties purchasing from Holland Shielding Systems , is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult the respective safety data sheet for the relevant territory to ensure compliance or contact us at info@hollandshielding.com before exporting to territories other than the European Union.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.