	Page: 1
SAFETY DATA SHEET	Revision Date: 05.10.2022
	Print Date: 09.10.2023
	SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448	Version: 3.0

Conforms to EU Regulation 1907/2006/EC as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Performax™ PM3686 Water Treatment Chemical
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

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

Use of the Substance/Mixture : Corrosion inhibitor


1.3 Details of the supplier of the safety data sheet Solenis Pesetastraat 62 2991 XT Barendrecht Netherlands Solenis UK Industries Limited P. O. Box 38, Cleckheaton Rd, Low Moor, Bradford, BD12 0JZ, United Kingdom E-mail address of person responsible for the SDS: EHSPRODUCTSAFETYTEAM@solenis.com Product Information Contact your local Solenis representative	1.4 Emergency telephone number +1-302-502-0991 , or contact your local emergency telephone number at 112
---	---

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.

		Page: 2
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Long-term (chronic) aquatic hazard,
Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :
 H290 May be corrosive to metals.
 H314 Causes severe skin burns and eye damage.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
 P391 Collect spillage.


Hazardous components which must be listed on the label:
 zinc sulphate (anhydrous)

Additional Labelling

EUH208 Contains maleic acid, mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);. May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

 SOLENIS Strong bonds. Trusted solutions.		Page: 3
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.


Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
zinc sulphate (anhydrous)	7733-02-0 231-793-3 01-2119474684-27-xxxx	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 10 - < 15
Poly(maleic acid)	26099-09-2	Met. Corr. 1; H290 Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 5 - < 10
2-phosphonobutane-1,2,4-tricarboxylic acid	37971-36-1 253-733-5 01-2119436643-39-xxxx	Met. Corr. 1; H290 Eye Irrit. 2; H319	>= 2,5 - < 5
1H-BENZOTRIAZOLE, SULFATE	24694-40-4	Acute Tox. 4; H302 Eye Irrit. 2; H319	>= 1 - < 2,5
maleic acid	110-16-7 203-742-5 01-2119488705-25-xxxx	Acute Tox. 4; H302 Acute Tox. 4; H312 Eye Dam. 1; H318 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system) Skin Irrit. 2; H315 specific concentration limit Skin Sens. 1; H317 >= 0,1 %	>= 0,1 - < 0,5
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247-	55965-84-9	Acute Tox. 3; H301 Acute Tox. 2; H330	>= 0 - <= 0,0002

		Page: 4
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0


500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);		Acute Tox. 2; H310 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071 <hr/> M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100 <hr/> specific concentration limit Skin Corr. 1C; H314 >= 0,6 % Skin Irrit. 2; H315 0,06 - < 0,6 % Eye Irrit. 2; H319 0,06 - < 0,6 % Skin Sens. 1A; H317 >= 0,0015 % Eye Dam. 1; H318 >= 0,6 %	
---	--	--	--

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	: Move to fresh air. If breathed in, move person into fresh air. Keep patient warm and at rest. If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	: If on skin, rinse well with water. Wash contaminated clothing before re-use.

		Page: 5
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
- Risks : Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
- Causes serious eye damage.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No hazards which require special first aid measures.


SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

- Specific hazards during : Do not allow run-off from fire fighting to enter drains or water

		Page: 6
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

firefighting

courses.

Hazardous combustion
products

: zinc oxide
Sulphur oxides
Carbon monoxide
Carbon dioxide (CO₂)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Keep in suitable, closed containers for disposal.


6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.

		Page: 7
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Avoid contact with skin and eyes.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
 Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. Ensure that eyewash stations and safety showers are close to the workstation location. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)


Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);	55965-84-9	TWA	0,076 mg/m3	SUPLR EXP
		STEL	0,23 mg/m3	SUPLR EXP
Further information: 5-chloro-2-methyl-2H-isothiazolin-3-one				
		TWA	1,5 mg/m3	SUPLR EXP

	Page: 8
SAFETY DATA SHEET	Revision Date: 05.10.2022
	Print Date: 09.10.2023
	SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448	Version: 3.0

	STEL	4,5 mg/m3	SUPLR EXP
Further information: 2-methyl-2H-isothiazolin-3-one			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
2-phosphonobutane-1,2,4-tricarboxylic acid	Workers	Inhalation	Long-term systemic effects	15 mg/m3
Remarks:	Repeated dose toxicity			
	Workers	Inhalation	Systemic, short-term	158 mg/m3
Remarks:	Acute toxicity			
	Workers	Dermal	Long-term systemic effects	4,2 mg/kg
Remarks:	Repeated dose toxicity			
	Workers	Dermal	Systemic, short-term	80 mg/kg
Remarks:	Acute toxicity			
	General population	Inhalation	Long-term systemic effects	3,7 mg/m3
Remarks:	Repeated dose toxicity			
	General population	Inhalation	Systemic, short-term	79 mg/m3
Remarks:	Acute toxicity			
	General population	Dermal	Long-term systemic effects	2,1 mg/kg
Remarks:	Repeated dose toxicity			
	General population	Dermal	Systemic, short-term	40 mg/kg
Remarks:	Acute toxicity			
	General population	Oral	Long-term systemic effects	2,1 mg/kg
Remarks:	Repeated dose toxicity			
	General population	Oral	Systemic, short-term	65 mg/kg
Remarks:	Acute toxicity			


8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

		Page: 9
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
 Impervious clothing
 Chemical resistant apron
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Wear resistant gloves (consult your safety equipment supplier).
 Discard gloves that show tears, pinholes, or signs of wear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : yellow
clear

Odour : No data available

Odour Threshold : No data available

Melting point/freezing point : No data available

Boiling point/boiling range : 100 °C

Flammability : No data available

Upper explosion limit / Upper flammability limit : No data available


Lower explosion limit / Lower flammability limit : No data available

Flash point : No data available

Decomposition temperature : No data available

pH : 1,7

Viscosity
Viscosity, dynamic : 50 mPa.s (25 °C)

		Page: 10
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Viscosity, kinematic : No data available

Solubility(ies)
Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Vapour pressure : No data available

Relative density : 1,24 (25 °C)

Density : 1,240 g/cm³ (20 °C)

Relative vapour density : No data available

9.2 Other information

Oxidizing properties : No data available

Self-ignition : No data available

Evaporation rate : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions


Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : calcium salts
lead salts
nitrites
steel
strong alkalis

	Page: 11
SAFETY DATA SHEET	Revision Date: 05.10.2022
	Print Date: 09.10.2023
	SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448	Version: 3.0

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Sulphur oxides
Zinc oxide fumes.
Carbon monoxide
Carbon dioxide (CO₂)
Oxides of phosphorus

SECTION 11: Toxicological information

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

Acute toxicity

Not classified based on available information.

Components:

zinc sulphate (anhydrous):

Acute oral toxicity : LD50 (Rat): 1.710 mg/kg
Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Poly(maleic acid):


Acute oral toxicity : LD50 (Rat): 12.500 mg/kg

2-phosphonobutane-1,2,4-tricarboxylic acid:

Acute oral toxicity : LD50 (Rat): > 6.500 mg/kg
Acute inhalation toxicity : LC 50 (Rat): > 1.979 mg/m³
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.
Acute dermal toxicity : LD50 (Rat): > 4.000 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.
Remarks: Based on similar product.

maleic acid:

Acute oral toxicity : LD50 (Rat): 708 mg/kg
Acute inhalation toxicity : LC 50 (Rat): > 0,72 mg/l
Exposure time: 1 h

		Page: 12
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation under GHS.

Acute dermal toxicity : LD50 (Rabbit): 1.560 mg/kg

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Acute oral toxicity : LD50 (Rat): > 66 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 0,33 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Remarks: Aerosol

Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 141 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.

Components:

zinc sulphate (anhydrous):

Result : Slightly irritating to skin

Poly(maleic acid):

Result : Irritating to skin

2-phosphonobutane-1,2,4-tricarboxylic acid:


Species : Rabbit
 Method : OECD Test Guideline 404
 Result : Not irritating to skin

1H-BENZOTRIAZOLE, SULFATE:

Result : Possibly irritating to skin

maleic acid:

Result : Severely irritating to skin

		Page: 13
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Species : Rabbit
 Result : Corrosive to skin

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:

zinc sulphate (anhydrous):

Species : Rabbit
 Method : OECD Test Guideline 405
 Result : Corrosive to eyes

Poly(maleic acid):

Result : Irritating to eyes

2-phosphonobutane-1,2,4-tricarboxylic acid:

Result : Irritating to eyes

1H-BENZOTRIAZOLE, SULFATE:

Result : Irritating to eyes
 Remarks : Based on similar product.

maleic acid:

Result : Corrosive to eyes

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Species : Rabbit
 Result : Corrosive to eyes


Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

		Page: 14
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Product:

Result : Does not cause skin sensitisation.

Components:

1H-BENZOTRIAZOLE, SULFATE:

Assessment : Harmful if swallowed.

maleic acid:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : May cause sensitisation by skin contact.
GLP : yes

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Result : Probability or evidence of high skin sensitisation rate in humans

Germ cell mutagenicity

Not classified based on available information.


Components:

2-phosphonobutane-1,2,4-tricarboxylic acid:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

		Page: 15
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

Components:

maleic acid:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Components:

1H-BENZOTRIAZOLE, SULFATE:

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available


SECTION 12: Ecological information

12.1 Toxicity

Components:

zinc sulphate (anhydrous):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,28 - 0,48 mg/l
 Exposure time: 48 h
 Method: Flow through

	Page: 16
SAFETY DATA SHEET	Revision Date: 05.10.2022
	Print Date: 09.10.2023
	SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448	Version: 3.0

Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,89 - 1,4 mg/l
Exposure time: 48 h
Method: Static
Remarks: Intoxication

EC50 (Daphnia magna (Water flea)): 0,538 - 0,908 mg/l
Exposure time: 48 h
Method: Static
Remarks: Intoxication

Toxicity to algae/aquatic plants : (Green algae (Chlorella vulgaris)): 3 - 45 mg/l
End point: LC 50
Exposure time: 24 h
Method: Static
Remarks: Mortality

Poly(maleic acid):

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1.060 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 530 mg/l
Exposure time: 48 h


2-phosphonobutane-1,2,4-tricarboxylic acid:

Toxicity to fish : (Danio rerio (zebra fish)): > 1.042 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.071 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : (Desmodesmus subspicatus (green algae)): 140 mg/l
End point: EC 50
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Test Type: Static
Method: OECD Test Guideline 209

		Page: 17
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC: > 1.042 mg/l
 Exposure time: 14 d
 Species: Danio rerio (zebra fish)
 Test Type: semi-static test
 Method: OECD Test Guideline 204
 GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 104 mg/l
 End point: Reproduction Test
 Exposure time: 21 d
 Species: Daphnia (water flea)
 Test Type: semi-static test
 Method: OECD Test Guideline 211
 GLP: yes

maleic acid:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 106 mg/l
 Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 42,81 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 74,35 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:


Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,19 mg/l
 Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,28 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,16 mg/l
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,027 mg/l
 Exposure time: 72 h

M-Factor (Acute aquatic) : 100

	Page: 18
SAFETY DATA SHEET	Revision Date: 05.10.2022
	Print Date: 09.10.2023
	SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448	Version: 3.0

toxicity)

Toxicity to microorganisms : EC50 (activated sludge): 4,5 mg/l
Test Type: Respiration inhibition

M-Factor (Chronic aquatic toxicity) : 100

12.2 Persistence and degradability

Components:

2-phosphonobutane-1,2,4-tricarboxylic acid:

Biodegradability : Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Biodegradation: 17 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

maleic acid:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 97 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Biodegradability : Biodegradation: 30 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Not readily biodegradable.

12.3 Bioaccumulative potential


Product:

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

Components:

zinc sulphate (anhydrous):

Bioaccumulation : Species: Green algae (Chlorella vulgaris)
Exposure time: 21 d
Concentration: 35,5 mg/l
Bioconcentration factor (BCF): 1.921

		Page: 19
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Method: Static

2-phosphonobutane-1,2,4-tricarboxylic acid:

Partition coefficient: n-octanol/water : log Pow: -1,36 (25 °C)

maleic acid:

Partition coefficient: n-octanol/water : log Pow: -0,48

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Partition coefficient: n-octanol/water : log Pow: <= 0,71
Method: OECD Test Guideline 117

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.


12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

		Page: 20
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

- Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADR: UN3265

ADN: UN3265

RID: UN3265

IMDG-Code: UN3265

IATA-DGR: UN3265

14.2 UN proper shipping name

ADR: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (POLY(MALEIC ACID))

ADN: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (POLY(MALEIC ACID))

RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (POLY(MALEIC ACID))

IMDG-Code: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (POLY(MALEIC ACID))

IATA-DGR: Corrosive liquid, acidic, organic, n.o.s. (POLY(MALEIC ACID))

14.3 Transport hazard class(es)

ADR: 8

ADN: 8

RID: 8

IMDG-Code: 8

IATA-DGR: 8


14.4 Packing group

ADR: III

ADN: III

RID: III

IMDG-Code: III

		Page: 21
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

IATA-DGR: III

14.5 Environmental hazards

ADR: Environmentally hazardous

ADN: Environmentally hazardous

RID: Environmentally hazardous

IMDG-Code: Marine pollutant

IATA-DGR: Environmentally hazardous

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments


Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	: Conditions of restriction for the following entries should be considered:
	Number on list 3
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	: Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	: Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	: Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	: Not applicable
UK REACH List of substances subject to authorisation (Annex XIV)	: Not applicable
Regulation (EC) No 649/2012 of the European	: Not applicable

		Page: 22
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

Parliament and the Council concerning the export and import of dangerous chemicals

Seveso III: Directive 2012/18/EU of the E2 ENVIRONMENTAL HAZARDS
 European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
AIIC	: On the inventory, or in compliance with the inventory
DSL	: This product contains one or more components that are not on the Canadian DSL and have annual quantity limits.
ENCS	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information


Revision Date: 05.10.2022

Classification of the mixture:

Met. Corr. 1	H290
Skin Corr. 1	H314
Eye Dam. 1	H318

Classification procedure:

Calculation method
Based on product data or assessment
Based on product data or assessment

	Page: 23
SAFETY DATA SHEET	Revision Date: 05.10.2022
	Print Date: 09.10.2023
	SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448	Version: 3.0

Aquatic Chronic 2

H411

Calculation method


Full text of H-Statements

H290	: May be corrosive to metals.
H301	: Toxic if swallowed.
H302	: Harmful if swallowed.
H310	: Fatal in contact with skin.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H330	: Fatal if inhaled.
H335	: May cause respiratory irritation.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Met. Corr.	: Corrosive to metals
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure
SUPLR EXP	: Supplier-recommended exposure guidelines
SUPLR EXP / STEL	: Short term exposure limit
SUPLR EXP / TWA	: Time weighted average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50

		Page: 24
SAFETY DATA SHEET		Revision Date: 05.10.2022
		Print Date: 09.10.2023
		SDS Number: 000000262051
Performax™ PM3686 Water Treatment Chemical ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 882448		Version: 3.0

- Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

GB / EN