

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product Name **MS Goldmix pH Premium**

Other means of identification

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Application Premixture

Details of the supplier of the safety data sheet

Manufacturer Address

Schippers Europe B.V.
Rond Deel 12 5531 AH Bladel
The Netherlands
Tél.: 0031 (0) 497-382017
Fax: 0031 (0) 497-382096
contact.nl@schippers.eu

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation - Category 2
Serious eye damage/eye irritation - Category 1

Label elements

Symbols/Pictograms



Signal word

Danger

Hazard statements

Causes serious eye damage
Causes skin irritation

Precautionary Statements

Wear protective gloves and eye/face protection
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 or doctor
 IF ON SKIN: Wash with plenty of water and soap
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash before reuse

Contains: Formic acid 20-30%, Lactic acid, Propionic acid 1-5%, Sorbic acid

Supplemental information

No information available

Hazards not otherwise classified (HNOC)

Other hazards

May be harmful if swallowed

Unknown Acute Toxicity

34 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Name	CAS No	Weight-%
Sodium propionate	137-40-6	20-30
Formic acid	64-18-6	20-30
Lactic acid	50-21-5	5-10
Propionic acid	79-09-4	1-5
Sorbic acid	110-44-1	<1

4. FIRST AID MEASURES

Description of first aid measures

General advice	Immediate medical attention is required. Emergency eyewash facilities must be located in the vicinity of where the product is handled.
Inhalation	Remove to fresh air. Rinse mouth with water. If irritation persists get medical advice/attention.
Skin contact	Immediately flush skin with water and rinse skin with soap and water for at least 5-10 minutes. Use lukewarm water if possible. Remove contaminated clothing and shoes. Get medical attention if redness does not disappear.
Eye contact	Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Use lukewarm water if possible. Keep eye wide open while rinsing.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink plenty of water afterwards. Never give anything by mouth to an unconscious person. If a large quantity has been ingested or you feel unwell, get medical advice/attention.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Eye contact: Causes severe irritation with flood of tears and pain and strong redness and swelling of the eye. Risk of permanent eye damage. May cause skin irritation and/or dermatitis.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Unsuitable extinguishing media

High volume water jet.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂).

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

Additional information

Cool containers with flooding quantities of water until well after fire is out. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate affected area. Remove all sources of ignition.

Environmental precautions

Minimize the area spreading and cover the drains. Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so

Small spill	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal
Large spill	Pump up the product into a spare container suitably labelled.

Methods for cleaning up

Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

Reference to other sections

See Section 7,8,13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure adequate ventilation, especially in confined areas. Use personal protection recommended in Section 8. Avoid: aerosol or mist formation.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry and cool place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Users are advised to consider national Occupational Exposure Limits or other equivalent values. (if existing).

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formic acid 64-18-6	STEL: 10 ppm TWA: 5 ppm	TWA: 5 ppm TWA: 9 mg/m ³ (vacated) TWA: 5 ppm (vacated) TWA: 9 mg/m ³	IDLH: 30 ppm TWA: 5 ppm TWA: 9 mg/m ³

Propionic acid 79-09-4	TWA: 10 ppm	(vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m ³	TWA: 10 ppm TWA: 30 mg/m ³ STEL: 15 ppm STEL: 45 mg/m ³
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Chemical Name	Alberta	British Columbia	Ontario	Quebec
Formic acid 64-18-6	TWA: 5 ppm TWA: 9.4 mg/m ³ STEL: 10 ppm STEL: 19 mg/m ³	TWA: 5 ppm STEL: 10 ppm	TWA: 5 ppm STEL: 10 ppm	TWA: 5 ppm TWA: 9.4 mg/m ³ STEL: 10 ppm STEL: 19 mg/m ³
Propionic acid 79-09-4	TWA: 10 ppm TWA: 30 mg/m ³	TWA: 10 ppm	TWA: 10 ppm	TWA: 10 ppm TWA: 30 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Eyewash stations. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles
Hand Protection	Wear protective gloves. Butyl rubber. Chloroprene rubber, CR. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
Skin and body protection	Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (in case of splashes).
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Suitable respiratory protection for lower concentrations or short-term exposure: Gas filter for gases/vapours of organic compounds (boiling point >65°C e.g. organic vapor/gas cartridge) Suitable respiratory protection for higher concentrations or long-term exposure: Self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

liquid
colorless, light yellow

Odor

Pungent

Odor threshold

No information available

Property

Value

Remarks • Method

pH

3.0 - 4.0

solution (5 %)

Melting point / freezing point

Not determined

Boiling point / boiling range

Not determined

Flash point

>93 °C

(based on components)

Evaporation rate

No information available

Flammability (solid, gas)

Not applicable

Explosive limits

Upper explosive limits

No information available

Lower explosive limits

No information available

Vapor pressure

No information available

Vapor density

No information available

Relative density

No information available

Water solubility

Soluble in water

Solubility(ies)

No information available

Partition coefficient

See Section 12 for additional ecological information

Autoignition temperature

No information available

Decomposition temperature

Not determined

Kinematic viscosity

No information available

Dynamic viscosity

No information available

Explosive properties

The product is not explosive. However, formation

Oxidizing properties**Density**1100-1200 kg/m³**Bulk density**

of explosive air/vapour mixtures are possible.
Not oxidizing.
@ 20 °C
No information available

Other Information

No information available

10. STABILITY AND REACTIVITY**Reactivity**

There exists no specific test data for this product. For further information, see the subsequent subsections of this chapter.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Reacts with: Strong bases, Oxidizing substances

Conditions to avoid

None under normal use conditions.

Incompatible materials

None under normal use conditions

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation. Dermal.

Symptoms related to the physical, chemical and toxicological characteristics

See Section 4 for more information.

Numerical measures of toxicity

ATEmix (oral)	2,982.00 mg/kg
ATEmix (dermal)	15,628.00 mg/kg
ATEmix (inhalation-vapor)	25.00 mg/l
Unknown Acute Toxicity	34 % of the mixture consists of ingredient(s) of unknown toxicity

Acute toxicity

Sodium propionate (137-40-6)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 401: Acute Oral Toxicity	Rat	Oral	>6500	LD50 (lethal dose) mg/kg
OECD Test No. 402: Acute Dermal Toxicity	Rabbit	Dermal	>2000	LD0 mg/kg

Formic acid (64-18-6)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 401: Acute Oral Toxicity	Rat	Oral	730	LD50 (lethal dose) mg/kg
OECD Test No. 402: Acute Dermal Toxicity	Mouse	Dermal	>2000	LD0 mg/kg
OECD Test No. 403: Acute Inhalation Toxicity	Rat	Inhalation	7.85	LC50 mg/l

Lactic acid (50-21-5)				
Method	Species	Exposure route	Effective dose	Remarks
EPA OPP 81-1	Rat	Oral	3543	LD50 (lethal dose)

				mg/kg read-across from supporting substance (structural analogue)
EPA OPP 81-2	Rabbit	Dermal	>2000	LD0 mg/kg read-across from supporting substance (structural analogue)
OECD Test No. 403: Acute Inhalation Toxicity	Rat	Inhalation	>7.94	LC50 mg/l read-across from supporting substance (structural analogue)

Propionic acid (79-09-4)

Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 401: Acute Oral Toxicity	Rat	Oral	3455	LD50 (lethal dose) mg/kg
OECD Test No. 403: Acute Inhalation Toxicity	Rat	Inhalation	>20	Inhalation LC50 - 4 hour - vapor - mg/L

Sorbic acid (110-44-1)

Method	Species	Exposure route	Effective dose	Remarks
Unknown	Rat	Oral	12500	LD50 (lethal dose) mg/kg read-across from supporting substance (structural analogue)
OECD Test No. 402: Acute Dermal Toxicity	Rat	Dermal	>5000	LD50 (lethal dose) mg/kg read-across from supporting substance (structural analogue)

Skin corrosion/irritation

Irritating to skin. Safety factor.

Product Information

Method	Species	Exposure route	Results:
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Skin	Non-irritating to the skin Read-across from similar product

Sodium propionate (137-40-6)

Method	Species	Exposure route	Results:
OECD Test No. 439: In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method	human data	Dermal	Non-irritating to the skin No classification according to GHS criteria.

Formic acid (64-18-6)

Method	Species	Exposure route	Results:
Unknown	human data	Dermal	Corrosive

Lactic acid (50-21-5)

Method	Species	Exposure route	Results:
EPA OPP 81-5	Rabbit	Dermal	Irritating to skin read-across from supporting substance (structural analogue)

Propionic acid (79-09-4)

Method	Species	Exposure route	Results:
Unknown	Rabbit	Dermal	Corrosive

Sorbic acid (110-44-1)

Method	Species	Exposure route	Results:
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Dermal	Non-irritating to the skin

Unknown	human data	Dermal	Irritating to skin
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Serious eye damage/eye irritation

Risk of serious damage to eyes.

Product Information			
Method	Species	Exposure route	Results:
OECD 438	in vitro		Causes serious eye damage Read-across from similar product

Sodium propionate (137-40-6)

Method	Species	Exposure route	Results:
OECD 437	in vitro	Eye	Not Classifiable

Formic acid (64-18-6)

Method	Species	Exposure route	Results:
Unknown	human data	Eye	strongly corrosive

Lactic acid (50-21-5)

Method	Species	Exposure route	Results:
Unknown	Eye in vitro	Eye	strongly irritant

Propionic acid (79-09-4)

Method	Species	Exposure route	Results:
Unknown	Rabbit	Eye	Corrosive

Sorbic acid (110-44-1)

Method	Species	Exposure route	Results:
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	Eye	Irritating to eyes

Respiratory or skin sensitization

According to the data on the components: Not a skin sensitizer.

Sodium propionate (137-40-6)

Method	Species	Exposure route	Results:
OECD 442C	in vitro	Skin	Not sensitizing.

Formic acid (64-18-6)

Method	Species	Exposure route	Results:
OECD Test No. 406: Skin Sensitization	Guinea pig	Skin	Not a skin sensitizer

Lactic acid (50-21-5)

Method	Species	Exposure route	Results:
EPA OPP 81-6	Guinea pig	Skin	Not a skin sensitizer read-across from supporting substance (structural analogue)

Propionic acid (79-09-4)

Method	Species	Exposure route	Results:
OECD Test No. 406: Skin Sensitization	Guinea pig	Skin	Not a skin sensitizer

Sorbic acid (110-44-1)

Method	Species	Exposure route	Results:
Regulation (EC) No. 440/2008, Annex, B.6	Guinea pig	Skin	Not sensitizing. read-across from supporting substance (structural analogue)

Germ cell mutagenicity

According to the data on the components: Not mutagenic.

Sodium propionate (137-40-6)		
Method	Species	Results:
OECD Test No. 471: Bacterial Reverse Mutation Test	Salmonella typhimurium	Negative
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test	in vitro	Negative

Formic acid (64-18-6)		
Method	Species	Results:
OECD Test No. 471: Bacterial Reverse Mutation Test	in vitro	Negative
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test	in vitro	Negative
OECD Test No. 476: In vitro Mammalian Cell Gene Mutation Test	in vitro	Negative
OECD Test No. 479: Genetic Toxicology: In vitro Sister Chromatid Exchange Assay in Mammalian Cells	in vitro	Negative
OECD Test No. 477: Genetic Toxicology: Sex-Linked Recessive Lethal Test in <i>Drosophila melanogaster</i>	in vivo	Negative

Propionic acid (79-09-4)		
Method	Species	Results:
OECD Test No. 471: Bacterial Reverse Mutation Test	in vitro	Negative
OECD Test No. 476: In vitro Mammalian Cell Gene Mutation Test	in vitro	Negative read-across from supporting substance (structural analogue)
OECD Test No. 479: Genetic Toxicology: In vitro Sister Chromatid Exchange Assay in Mammalian Cells	in vitro	Negative
OECD Test No. 474: Mammalian Erythrocyte Micronucleus Test	in vivo	Negative

Sorbic acid (110-44-1)		
Method	Species	Results:
Regulation (EC) No. 440/2008, Annex, B.18	in vitro	Negative read-across from supporting substance (structural analogue)
Regulation (EC) No. 440/2008, Annex, B.13/14 (Ames test)	in vitro	Negative read-across from supporting substance (structural analogue)
OECD Test No. 474: Mammalian Erythrocyte Micronucleus Test	in vivo	Negative read-across from supporting substance (structural analogue)

Carcinogenicity

Formic acid (64-18-6)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Oral	2000	NOAEL mg/kg bw/day No carcinogenic effects have been observed. read-across from supporting substance (structural analogue)

Propionic acid (79-09-4)				
Method	Species	Exposure route	Effective dose	Remarks
Unknown	Rat	Oral	4000	NOAEL ppm Animal studies have not shown any carcinogenic potential.

Sorbic acid (110-44-1)				
Method	Species	Exposure route	Effective dose	Remarks
Unknown	Mouse	Oral	1400	NOAEL mg/kg bw/day Not considered to be carcinogen. read-across from supporting substance (structural analogue)
Unknown	Rat	Oral	750	NOAEL mg/kg bw/day Not considered to be carcinogen. read-across from supporting substance (structural analogue)

Reproductive toxicity

According to the data on the components: No impairment of fertility has been observed. No embryotoxic or teratogenic effects have been observed.

Formic acid (64-18-6)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 414: Prenatal Development Toxicity Study	Rabbit	Oral	667	NOAEL mg/kg bw/day No embryotoxic or teratogenic effects have been observed. read-across from supporting substance (structural analogue)
OECD Test No. 416: Two-Generation Reproduction Toxicity	Rat	Oral	650	NOAEL mg/kg bw/day A two-generation reproduction toxicity study performed with a read-across substance did not indicate any potential for reproductive or developmental toxicity.

Propionic acid (79-09-4)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 414: Prenatal Development Toxicity Study	Rat	Oral	300	NOAEL mg/kg bw/day read-across from supporting substance (structural analogue)

Sorbic acid (110-44-1)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 416: Two-Generation Reproduction Toxicity	Rat	Oral	3000	NOAEL mg/kg bw/day read-across from supporting substance (structural analogue)
OECD Test No. 414: Prenatal Development Toxicity Study	Rabbit	Oral	1000	NOAEL mg/kg bw/day read-across from supporting substance (structural analogue) No embryotoxic or teratogenic effects have been observed.

STOT - single exposure

Target organ effects: Irritating to respiratory system.

Formic acid (64-18-6)				
Method	Species	Exposure route	Effective dose	Remarks
Unknown	human data	Inhalation		May give smarting pain

				in nose and throat, headache, tiredness, dizziness and coughing. High concentration can give difficulties in breathing.
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Propionic acid (79-09-4)				
Method	Species	Exposure route	Effective dose	Remarks
		Inhalation		Irritating to respiratory system

STOT - repeated exposure

Sodium propionate (137-40-6)				
Method	Species	Exposure route	Effective dose	Remarks
Unknown	Dog	Oral	1282.5	NOAEL mg/kg bw/day 104 weeks

Formic acid (64-18-6)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Oral	2000	LOAEL mg/kg bw/day read-across from supporting substance (structural analogue)
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Oral	400	NOAEL mg/kg bw/day read-across from supporting substance (structural analogue)
OECD Test No. 413: Subchronic Inhalation Toxicity: 90-day Study	Rat	Inhalation	0.244	LOAEL mg/l read-across from supporting substance (structural analogue)
OECD Test No. 413: Subchronic Inhalation Toxicity: 90-day Study	Rat	Inhalation	0.122	NOAEL mg/l read-across from supporting substance (structural analogue)
OECD Test No. 413: Subchronic Inhalation Toxicity: 90-day Study	Rat	Inhalation	0.244	NOAEL mg/l systemic toxicity read-across from supporting substance (structural analogue)

Propionic acid (79-09-4)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 408: Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	Oral	6200	NOAEL Chronic effects, local ppm
OECD Test No. 408: Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	Oral	50000	NOAEL systemic toxicity ppm
OECD Test No. 411: Subchronic Dermal Toxicity: 90-day Study	Mouse	Dermal	136.9	LOAEL Subchronic toxicity mg/kg bw/day

Sorbic acid (110-44-1)				
Method	Species	Exposure route	Effective dose	Remarks
Regulation (EC) No. 440/2008, Annex, B.27	Dog	Oral	40000	NOAEL ppm read-across from supporting substance (structural analogue)
OECD Test No. 408: Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	Oral	6800-7200	NOAEL mg/kg bw/day read-across from supporting substance (structural analogue)

Aspiration hazard

No information available.

12. ECOLOGICAL INFORMATION**Toxicity**

Low toxicity to aquatic organisms.

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Sodium propionate (137-40-6)

Method	Species	Exposure route	Effective dose	Exposure time	Remarks
Unknown	Fish	Freshwater	>10000	96h	LC50 (lethal concentration) mg/l
Unknown OECD Test No. 202: Daphnia sp. Acute Immobilization Test	Daphnia magna	Freshwater	>100	48h	EC50 (effective concentration) mg/l
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	Freshwater	>80.6	72h	EC50 (effective concentration) mg/l

Formic acid (64-18-6)

Method	Species	Exposure route	Effective dose	Exposure time	Remarks
OECD Test No. 203: Fish, Acute Toxicity Test	Brachydanio rerio	Freshwater	130	96h	LC50 (lethal concentration) mg/l read-across from supporting substance (structural analogue)
OECD Test No. 202: Daphnia sp. Acute Immobilization Test	Daphnia magna	Freshwater	365	48h	EC50 (effective concentration) mg/l read-across from supporting substance (structural analogue)
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	Freshwater	1240	72h	EC50 (effective concentration) mg/l read-across from supporting substance (structural analogue)
OECD Test No. 203: Fish, Acute Toxicity Test	Brachydanio rerio	Freshwater	90	96h	NOEC mg/l read-across from supporting substance (structural analogue)
OECD Test No. 202: Daphnia sp. Acute Immobilization Test	Daphnia magna	Freshwater	180	48h	NOEC mg/l read-across from supporting substance (structural analogue)
OECD Test No. 211: Daphnia magna Reproduction Test	Daphnia magna	Freshwater	>=100	21d	NOEC mg/l
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	Freshwater	<76.8	72h	NOEC mg/l read-across from supporting substance (structural analogue)

					analogue)
Regulation (EC) No. 440/2008, Annex, C.3	Bacteria toxicity	Freshwater	72	13d	NOEC mg/l

Lactic acid (50-21-5)

Method	Species	Exposure route	Effective dose	Exposure time	Remarks
EPA-669/3-75-009	Oncorhynchus mykiss (rainbow trout)	Freshwater	130	96h	LC50 (lethal concentration) mg/l read-across from supporting substance (structural analogue)
OECD Test No. 202: Daphnia sp. Acute Immobilization Test	Daphnia magna	Freshwater	130	48h	EC50 (effective concentration) mg/l read-across from supporting substance (structural analogue)
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	Freshwater	3500	72h	EC50 (effective concentration) mg/l read-across from supporting substance (structural analogue)

Propionic acid (79-09-4)

Method	Species	Exposure route	Effective dose	Exposure time	Remarks
DIN 38412	Leuciscus idus	Freshwater	>10000	96h	LC50 (lethal concentration) mg/l
Regulation (EC) No. 440/2008, Annex, C.2	Daphnia magna	Freshwater	>500	48h	EC50 (effective concentration) mg/l
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Scenedesmus subspicatus	Freshwater	>500	72h	EC50 (effective concentration) mg/l
DIN 38412	Leuciscus idus	Freshwater	>5000	96h	NOEC mg/l
Regulation (EC) No. 440/2008, Annex, C.2	Daphnia magna	Freshwater	250	48h	NOEC mg/l

Sorbic acid (110-44-1)

Method	Species	Exposure route	Effective dose	Exposure time	Remarks
OECD Test No. 203: Fish, Acute Toxicity Test	Oryzias latipes (Ricefish)	Freshwater	75	96h	LC50 (lethal concentration) mg/l
OECD Test No. 202: Daphnia sp. Acute Immobilization Test	Daphnia magna	Freshwater	70	48h	EC50 (effective concentration) mg/l
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	Freshwater	77	72h	EC50 (effective concentration) mg/l
OECD Test No. 211: Daphnia magna Reproduction Test	Daphnia magna	Freshwater	50	21d	NOEC mg/l

Persistence and degradability

Based on the degradability studies on the ingredients, the product is expected to be readily biodegradable.

Sodium propionate (137-40-6)

Method	Value	Exposure time	Results:
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)	92.9%	28d	Readily biodegradable

Formic acid (64-18-6)			
Method	Value	Exposure time	Results:
OECD Test No. 301C: Ready Biodegradability: Modified MITI Test (I) (TG 301 C)	100%	28d	Readily biodegradable
EU Method C.4-B	99%	11d	Readily biodegradable
EU Method C.4-B	98%	14d	Readily biodegradable

Lactic acid (50-21-5)			
Method	Value	Exposure time	Results:
EU Method C.5	67%	20d	Readily biodegradable, failing 10-d window

Propionic acid (79-09-4)			
Method	Value	Exposure time	Results:
Regulation (EC) No. 440/2008, Annex, C.5 (BOD)	93%	20d	Readily biodegradable
OECD Test No. 302B: Inherent Biodegradability: Zahn-Wellens/ EVPA Test	95%	10d	Readily biodegradable
Unknown	74%	30d	Readily biodegradable

Sorbic acid (110-44-1)			
Method	Value	Exposure time	Results:
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)	74.9%	28d	Readily biodegradable

Bioaccumulative potential

Based on the partition coefficients of the ingredients the product is not expected to bioaccumulate in organisms.

Chemical Name	Partition coefficient	Bioconcentration factor (BCF)
Sodium propionate	0.3	
Formic acid	-2.1	
Lactic acid	-0.6	
Propionic acid	0.33	
Sorbic acid	1.32	

Mobility in soil

No information available.

Other adverse effects

Emissions to water lowers the pH. This may cause local damage to fish and aquatic organisms in the discharge area.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container

14. TRANSPORT INFORMATION

TDG Road transport	Not regulated
RID Rail transport	Not regulated
IMDG Sea transport	Not regulated
Transport in bulk according to	No information available

**Annex II of MARPOL 73/78 and
the IBC Code****IATA Air transport** Not regulated**15. REGULATORY INFORMATION****International Regulations**

Not applicable.

National regulations**Canada**

See section 8 for national exposure control parameters.

16. OTHER INFORMATION**Key or legend to abbreviations and acronyms used in the safety data sheet****Issue Date** 21-Jun-2018**Revision Date** 20-Jun-2018**Revision Note** No information available**Disclaimer**

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End of Safety Data Sheet