



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

1.1	Product identifiers Trade Name or designation	DP1129C Bio pH Hard Water
1.2	Identification of Uses Uses advised against	Water conditioner No specific uses are advised against
1.3	Supplier Telephone No. Fax No. Email	Biolink Limited. Halifax Way Pocklington Ind. Est Pocklington York YO42 1NR +44 (0) 1759 303444 +44 (0) 1759 303158 info@biolinklimited.co.uk
1.4	Emergency Phone	+44 (0) 1280 738605 (office hours only)

2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 67/548/EEC or 1999/45/EEC as amended
C, N R34, R50

Classification in accordance to EC 1272/2008 as amended

PHYSICAL HAZARDS

Not Classified

HEALTH HAZARDS

Skin Corrosive	Category 1B	H314 Causes severe skin burns and eye damage
Eye Damage	Category 1	H318 Causes serious eye damage

ENVIRONMENTAL HAZARDS

Aquatic Acute Toxicity	Category 1	H400 Very toxic to aquatic life
Aquatic Chronic Toxicity	Category 2	H411 Toxic to aquatic life with long lasting effects

Hazard summary

Physical hazards

Not Classified

Health hazards

Causes severe skin burns and eye damage

Environmental hazards

Very toxic to aquatic life with long lasting effects

Specific hazards

Not applicable

Main symptoms

Burning pain and severe corrosive skin damage. Rash. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

2.2 Label elements

Label in accordance with EC 1272/2008 as amended

Contains FORMIC ACID, QUATERNARY AMMONIUM COMPOUNDS

Hazard pictograms



Signal word

Danger

Hazard statements

- H314 Causes severe skin burns and eye damage
- H400 Very toxic to aquatic life
- H411 Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin
- P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Storage

P405 Store Locked up.

Disposal

P501 Dispose of contents/container in accordance with local regulations.

Supplemental label information

Not Applicable

2.3 Other hazards

Not known

3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

FORMIC ACID	50 - 60%		
CAS-No.: 64-18-6	EC No.: 200-579-1	EC Index No.: 607-002-00-6	Reach No.: 01-2119491174-37
Classification (67/548/EEC) C, R35	Classification (EC 1272/2008) Skin Corr. 1A – H314		

QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES		2 - 5%	
CAS-No.: 68424-85-1	EC No.: 270-325-2	EC Index No.: 612-131-00-6	Reach No.:
Classification (67/548/EEC) C, Xn, N, R34, R22, R50		Classification (EC 1272/2008) Met. Corr. 1 - H290 Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1- H318 Aquatic acute 1 -H400 Aquatic chronic 1 - H410	

ACETIC ACID		1 - 4%	
CAS-No.: 64-19-7	EC No.: 200-580-7	EC Index No.:	Reach No.: 01-2119475328-30
Classification (67/548/EEC) C, R10, R35		Classification (EC 1272/2008) Flam.liq. 3 -H226 Skin Corr. 1A -H314	

PROPIONIC ACID		0.5 - 1.5%	
CAS-No.: 79-09-4	EC No.: 201-176-3	EC Index No.: 607-089-00-0	Reach No.:
Classification (67/548/EEC) C, R34		Classification (EC 1272/2008) Skin Corr. 1B – H314	

COPPER SULPHATE		< 1 %	
CAS-No.: 7758-98-7	EC No.: 201-176-3	EC Index No.: 029-004-00-0	Reach No.:
Classification (67/548/EEC) Xn, Xi, N, R22, R36/38, R50-53		Classification (EC 1272/2008) Acute Tox. 4 – H302 Skin Irrit. 2 – H315 Eye Irrit. 2 – H319 Aquatic Acute 1 – H400 Aquatic Chronic 1– H410	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

4 - FIRST AID MEASURES

General Information

First aiders should wear suitable protective clothing.

4.1 Description of first aid measures

Inhalation

Move the exposed person to fresh air at once. Get medical attention. Provide rest, warmth and fresh air. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Ingestion

Move the exposed person to fresh air at once. Get medical attention. Provide rest, warmth and fresh air. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Skin contact

Remove contaminated clothing. Wash off with plenty of water. Consult a doctor if symptoms persist.

Eye contact

Remove contaminated clothing. Wash off with plenty of water. Consult a physician if symptoms persist.

4.2 Most important symptoms and effects, both acute and delayed

Burning and discomfort. Corrosive damage to the eyes, skin, nose, throat or gastrointestinal tract. Humans unacclimatized to acetic acid vapours experience extreme eye and nasal irritation at concentrations above 25 ppm. Air concentrations of 50 ppm are considered intolerable, causing intense lacrymation (eye weeping), nose, and throat irritation. Repeated exposures to high concentrations in man can cause eye conjunctival lesions, blackening of the hands, hyperkeratosis (thickening) of the skin, teeth erosion, congestion and edema of the pharynx, bronchial constriction, and respiratory tract irritation

4.3 Indication of any immediate medical attention and special treatment needed

Rinse eye immediately with sterile saline solution.

Seek medical attention in case of ingestion, inhalation or contact with eyes.

QUATS: If swallowed gastric irrigation with activated carbon

5 - FIRE FIGHTING MEASURES**General Fire Hazards****5.1. Extinguishing media**

SUITABLE EXTINGUISHING MEDIA

Water spray, Dry powder, foam.

UNSUITABLE EXTINGUISHING MEDIA

None

5.2. Special hazards arising from the substance or mixture

UNUSUAL FIRE & EXPLOSION HAZARDS

In case of fire toxic gases may be released. (CO_x,NO_x, HCl).

SPECIFIC HAZARDS

None noted.

5.3. Advice for fire-fighters

SPECIAL FIRE FIGHTING PROCEDURES

Collect fire extinguishing water separately, do not allow to enter drains. Exceptionally large spillages should be notified to the appropriate authorities.

PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Wear self-contained breathing apparatus.

6 - ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Keep unnecessary people away. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area.

6.2. Environmental precautions

Do not let product enter drains. Discharge into the environment must be avoided. Appropriate authorities should be notified in case of contamination of sewerage or surface water.

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. If possible contain the spillage with adsorbent material, place in a suitable container and dispose of as described in section 13 of this safety data sheet.

Quats are incompatible with anionic compounds e.g. anionic surfactants. If large quantities are released into waste water collect in an appropriate container. Adjust with sodium lauryl sulphate solution (Concentration twice as high as the active ingredient in the waste water) to a mixture ratio of 1:1. Polluted surfaces can be decontaminated with a 10% sodium lauryl sulphate solution.

6.4. Reference to other sections

Personal protection –section 8.

Disposal considerations –Section 13.

7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure good ventilation when using this product, avoid inhalation of vapours and spray, Handle with care and avoid spilling, skin and eye contact. Do not handle broken packages without protective equipment. Follow instructions and ensure correct dilution of this product before use.

7.2 Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container

7.3 Specific end use(s)

Sanitising and adjusting pH of poultry drinking water

8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Component	CAS-No.	Value	Control Parameters	Basis
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	Austrian OEL Regulation
FORMIC ACID	64-18-6	STEL	5 ppm 9 mg/m ³	Austrian OEL Regulation
FORMIC ACID	64-18-6	TWA	5 ppm 9.5 mg/m ³	Belgium VLEP/GWBB
FORMIC ACID	64-18-6	STEL	10 ppm 19 mg/m ³	Belgium VLEP/GWBB
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	Denmark
FORMIC ACID	64-18-6	STEL	10 ppm 18 mg/m ³	Denmark
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	SCOEL
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	France INRS
FORMIC ACID	64-18-6	TWA	5 ppm 9.5 mg/m ³	Germany AGS
FORMIC ACID	64-18-6	STEL	10 ppm 10 mg/m ³	Germany AGS
FORMIC ACID	64-18-6	TWA	5 ppm 9.5 mg/m ³	Germany DFG
FORMIC ACID	64-18-6	STEL	10 ppm 19 mg/m ³	Germany DFG
FORMIC ACID	64-18-6	TWA	9 mg/m ³	Hungary Decree No. 25/2000 (IX.30)
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	Ireland
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	Italy
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	Latvia
FORMIC ACID	64-18-6	TWA	5 mg/m ³	Poland - NDS
FORMIC ACID	64-18-6	STEL	15 mg/m ³	Poland - NDS
FORMIC ACID	64-18-6	TWA	5 ppm 9 mg/m ³	Spain - Royal Decree 374/2001
FORMIC ACID	64-18-6	STEL	10 ppm 18 mg/m ³	Spain - Royal Decree 374/2001
FORMIC ACID	64-18-6	TWA	3 ppm 5 mg/m ³	Sweden
FORMIC ACID	64-18-6	STEL	3 ppm 9 mg/m ³	Sweden
FORMIC ACID	64-18-6	TWA	5 ppm 9.5 mg/m ³	Switzerland
FORMIC ACID	64-18-6	STEL	10 ppm 19 mg/m ³	Switzerland
FORMIC ACID	64-18-6	STEL	5 mg/m ³	The Netherlands
FORMIC ACID	64-18-6	TWA	5 ppm 9.6 mg/m ³	UK - EH40 WEL
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Austrian OEL Regulation
ACETIC ACID	64-19-7	STEL	20 ppm 50 mg/m ³	Austrian OEL Regulation
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Belgium VLEP/GWBB
ACETIC ACID	64-19-7	STEL	15 ppm 38 mg/m ³	Belgium VLEP/GWBB
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	SCOEL
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Denmark
ACETIC ACID	64-19-7	STEL	20 ppm 50 mg/m ³	Denmark
ACETIC ACID	64-19-7	STEL	10 ppm 25 mg/m ³	France INRS
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Germany AGS
ACETIC ACID	64-19-7	STEL	20 ppm 50 mg/m ³	Germany AGS
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Germany DFG

ACETIC ACID	64-19-7	STEL	20 ppm 50 mg/m ³	Germany DFG
ACETIC ACID	64-19-7	TWA	25 mg/m ³	Hungary Decree No. 25/2000 (IX.30)
ACETIC ACID	64-19-7	STEL	25 mg/m ³	Hungary Decree No. 25/2000 (IX.30)
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Ireland
ACETIC ACID	64-19-7	STEL	15 ppm 37 mg/m ³	Ireland
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Italy
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Latvia
ACETIC ACID	64-19-7	TWA	15 mg/m ³	Poland - NDS
ACETIC ACID	64-19-7	STEL	30 mg/m ³	Poland - NDS
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Spain - Royal Decree 374/2001
ACETIC ACID	64-19-7	STEL	15 ppm 37 mg/m ³	Spain - Royal Decree 374/2001
ACETIC ACID	64-19-7	TWA	5 ppm 13 mg/m ³	Sweden
ACETIC ACID	64-19-7	STEL	10 ppm 25 mg/m ³	Sweden
ACETIC ACID	64-19-7	TWA	10 ppm 25 mg/m ³	Switzerland
ACETIC ACID	64-19-7	STEL	20 ppm 50 mg/m ³	Switzerland
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Austrian OEL Regulation
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Austrian OEL Regulation
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Belgium VLEP/GWBB
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Belgium VLEP/GWBB
PROPIONIC ACID	79-09-4	TWA	10 ppm 30 mg/m ³	Denmark
PROPIONIC ACID	79-09-4	STEL	20 ppm 60 mg/m ³	Denmark
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	SCOEL
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	SCOEL
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	France INRS
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	France INRS
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Germany AGS
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Germany AGS
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Germany DFG
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Germany DFG
PROPIONIC ACID	79-09-4	TWA	31 mg/m ³	Hungary Decree No. 25/2000 (IX.30)
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Ireland
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Ireland
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Italy
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Italy
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Latvia
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Latvia
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Spain - Royal Decree 374/2001
PROPIONIC ACID	79-09-4	STEL	20 ppm 62 mg/m ³	Spain - Royal Decree 374/2001
PROPIONIC ACID	79-09-4	TWA	10 ppm 30 mg/m ³	Sweden
PROPIONIC ACID	79-09-4	STEL	15 ppm 45 mg/m ³	Sweden
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	Switzerland
PROPIONIC ACID	79-09-4	STEL	20 ppm 60 mg/m ³	Switzerland
PROPIONIC ACID	79-09-4	TWA	31 mg/m ³	The Netherlands
PROPIONIC ACID	79-09-4	STEL	62 mg/m ³	The Netherlands
PROPIONIC ACID	79-09-4	TWA	10 ppm 31 mg/m ³	UK - EH40 WEL
PROPIONIC ACID	79-09-4	STEL	15 ppm 46 mg/m ³	UK - EH40 WEL

Biological limit values

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no-effect level (DNEL)

FORMIC ACID

Route	Use	Effect	Time	Value
Inhalation	Consumer	Acute - local		9.5 mg/m ³
	Consumer	Acute - Systemic		9.5 mg/m ³
	Worker	Acute - Systemic		19 mg/m ³
	Worker	Acute - local		19 mg/m ³
	Consumer	Local	Long-Term	3 mg/m ³
	Worker	Local	Long Term	9.5 mg/m ³
	Consumer	Systemic	Long Term	3 mg/m ³
	Worker	Systemic	Long Term	9.5 mg/m ³

ACETIC ACID

Route	Use	Effect	Time	Value
Inhalation	Worker	Local	Short Term	25mg/m ³
Inhalation	Worker	Local	Long Term	25mg/m ³
Inhalation	Consumer	Local	Short Term	25mg/m ³
Inhalation	Consumer	Local	Long Term	25mg/m ³

Predicted no effect concentrations (PNECs)

FORMIC ACID

Route	Value
Freshwater	2 mg/l
Freshwater sediment	13.4 mg/kg
Intermittent release	1 mg/l
Marine sediment	1.34 mg/kg
Marine water	0.2 mg/l
STP	7.2 mg/l
Soil	1.5 mg/kg

ACETIC ACID

Route	Value
Freshwater sediment	11.36 mg/kg (DW)
Marine sediment	1.136 mg/kg (DW)
Marine	0.3058 mg/l
Freshwater	3.058 mg/l
Intermittent release	30.58 mg/l
Soil	0.478 mg/kg (DW)
Sewage treatment	85 mg/l

8.2 Exposure controls



Appropriate Engineering controls

No specific engineering measures are noted except that this product should be used in a well ventilated area.

Individual protection measures, such as personal protective equipment

In case of splashing where suitable protective equipment.

General information

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday

Respiratory equipment

Where risk assessment shows air-purifying respirators are appropriate use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator.

Hand protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.6 mm

Break through time: >480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: >35 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection

In case of splashing, wear safety goggles or face shield.

Other protection

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly with soap & water if skin becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke

Environmental exposure controls

Do not discharge into the watercourse or drains

9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

Physical State:

Liquid

Form:

Suspension

Colour:

Blue

pH

2.5-3.5

BP/BP Range

N/A

MP/MP Range

N/A

Relative Density

1.1-1.2

Solubility

Completely miscible in water

9.2. Other information

Not known

10 - STABILITY AND REACTIVITY

10.1 Reactivity

Not expected under normal conditions of use

10.2 Chemical stability

Stable under normal temperature conditions

- 10.3 Possibility of hazardous reactions**
Not expected under normal conditions of use
- 10.4 Conditions to avoid**
Avoid exposure to high temperatures or direct sunlight
- 10.5 Incompatible materials**
Materials to avoid -strong acids or alkalis. Oxidising agents.
Anionic compounds
- 10.6 Hazardous decomposition products**
None, see section 5 for decomposition products under fire conditions

11 - TOXICOLOGICAL INFORMATION

General information

Information on likely routes of exposure

Inhalation

Irritation, Burning pain and severe corrosive damage

Skin contact

Burning pain and severe corrosive skin damage. Rash.

Eye contact

Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Ingestion

Burning pain and severe corrosive damage

Symptoms

Burning pain and severe corrosive skin damage. Rash. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

11.1 Information on toxicological effects

Acute toxicity

FORMIC ACID	Oral	LD50	730 mg/kg (Rat)
	Inhalation	LC50	7.4 mg/l (Rat) 4h
ACETIC ACID	Oral	LD50	4960 mg/kg (Mouse)
	Oral	LD50	3530 mg/kg (Rat)
	Oral	LD50	3310 mg/kg
	Inhalation	LC50 4 h	>16000 ppm (Rat) Vapour
	Inhalation	LC50 1 h	5620 ppm (Mouse) Vapour
	Inhalation	LC50 1 h	277 ppm (Mouse) Vapour
QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES	Oral	LD50	795 mg/kg (Rat)
	Dermal	ATEmix	> 5000 mg/kg (calculated)
COPPER SULPHATE	Oral	LD50	750-1000 mg/kg (Rat)
	Dermal	LD50	>1000mg/kg
PROPIONIC ACID	Oral	LD50	4920 mg/kg (Rat)
	Inhalation	LC50 4h	>4.9 mg/l
	8h IRT		No mortality within 8 hours, animal studies
	Dermal	LD50	4960-9930 mg/kg (Guinea pig)

Skin corrosion/irritation

FORMIC ACID	Strong caustic effect on the skin and mucous membranes	
ACETIC ACID	OECD 404 3.3% Conc.	Slightly Irritating (Rabbit)
	OECD 404 10% Conc.	Slightly Irritating (Rabbit)
QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES		
	OECD 404	Corrosive (Rabbit)
PROPIONIC ACID		Corrosive (Rabbit)

Serious eye damage/eye irritation

FORMIC ACID		Strong caustic effect
ACETIC ACID	OECD 405 0.1 ml 10% Conc.	Irritant (Rabbit)
	OECD 405 0.01ml 10% Conc.	Severe Irritant (Rabbit)
	EPA OPP 81-4 0.1ml 5% Conc.	Cornea opacity
PROPIONIC ACID	Primary irritation of the mucous membrane	Corrosive

Respiratory sensitisation

Based on the available data not classified as a respiratory sensitiser

Skin sensitisation

QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES	OECD 406	Not sensitising (Guinea pig)
PROPIONIC ACID	OECD 406	Not Sensitising

Germ cell mutagenicity

Based on the available data not classified as a mutagen

Carcinogenicity

Based on the available data not classified as a carcinogen

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed

Reproductive toxicity

Based on the available data not classified as a reproductive toxicant

Specific target organ toxicity - single exposure

Based on the available data not classified as a STOT SE

Specific target organ toxicity - repeated exposure

Based on the available data not classified as a STOT RE

Aspiration hazard

Based on the available data not classified as an aspiration hazard

Mixture versus substance information

Not data available

Other information

FORMIC ACID	Swallowing will lead to a strong caustic effect on the mouth and throat, danger of perforation of the oesophagus and stomach.
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12 - ECOLOGICAL INFORMATION**12.1 Toxicity**

ACETIC ACID	Toxicity to fish	LC50 96 h	>300.82 Freshwater fish
	Toxicity to aquatic invertebrates	EC50 48 h	>300.82 <i>Daphnia magna</i>
	Toxicity to Algae	EC50 72 h	>300.82
	Toxicity to Bacteria	NOEC 16 h	850 mg/l
QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES	Toxicity to fish	LC50 96 h	0.085 mg/l (rainbow trout)
	Toxicity to aquatic invertebrates	EC50 48 h	0.016 mg/l <i>Daphnia magna</i> .
	Toxicity to Algae	EC50 72 h	0.025 mg/l <i>Selenastrum capricornutum</i>
FORMIC ACID	Toxicity to fish	LC50 96 hour	130 mg/l <i>Brachydanio rerio</i>
	Toxicity to aquatic invertebrates	EC50 48 hour	365 mg/l <i>Daphnia magna</i> .
		NOEC	≥ 100 mg/l <i>Daphnia magna</i> .
	Toxicity to Algae	EC50 72 hour	1240 mg/l <i>Selenastrum capricornutum</i>
PROPIONIC ACID	Toxicity to fish	LC50 96 hour	67.1 mg/l <i>Oncorhynchus mykiss</i>
	Toxicity to aquatic invertebrates	EC50 48 hour	22.7 mg/l <i>Daphnia magna</i> .
	Toxicity to Bacteria	EC10 17 h	44.6 mg/l <i>Pseudomonas putida</i>
		EC20	>100 mg/l Activated Sludge

12.2 Persistence and degradability

ACETIC ACID	Degradation 20 d	96%
	Phototransformation Air 26.7 d	50%
	Biodegradation in soil 2 d	50%

QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES

OECD 301 D	70% Activated Sludge
COD	1130 mg/g

PROPIONIC ACID Readily Biodegradable

30d	74% Aerobic, Activated Sludge
COD	1520 mg/g
BOD 5d	1300 mg/g

FORMIC ACID

OECD 301 E	Readily Biodegradable
COD	100% 9d Bacteria
BOD 5d	348 mg/g
	86 mg/g

12.3 Bioaccumulative potential

ACETIC ACID	BCF	3.16
	Potential	Low

Partition coefficient n-octanol/water (log Kow)

ACETIC ACID	LogPow -	0.17
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QUATERNARY AMMONIUM COMPOUNDS, BENZYL-C12-16-ALKYLDIMETHYL, CHLORIDES

n-octanol/water	OECD 107	2.88
PROPIONIC ACID n-octanol/water @ 23°C	OECD 107	-2.1 log Pow (pH 7.0)
FORMIC ACID n-octanol/water @ 23°C	OECD 107	-2.1 log Pow (pH 7.0)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Not known

13 - DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Dispose of waste and residues in accordance with local authority requirements

Residual waste

Dispose of waste and residues in accordance with local authority requirements

Contaminated packaging

Dispose of as unused product.

EU Waste Code

02-01-09

Disposal methods/information

Wear protective equipment as outlined in section 8 of this safety data sheet when handling this product contaminated materials and packaging.

Special precautions

Not noted.

14 - TRANSPORT INFORMATION

Road Transport Notes

14.1 UN-number

ADR/RID: 3412

IMDG: 3412

IATA: 3412

14.2 UN proper shipping name

ADR/RID: FORMIC ACID

IMDG: FORMIC ACID

IATA: FORMIC ACID

14.3	Transport hazard class (es) ADR/RID: 8 (C3)	IMDG: 8	IATA: 8
14.4	Packaging group ADR/RID: II	IMDG: II	IATA: II
14.5	Environmental hazards IMDG: Marine pollutant: Yes		
14.6	Special precautions for users Danger: Corrosive		
14.7	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A		

Further information

Limited quantities:	1L
Expected quantities:	E2
Transport Category (Tunnel Restriction Code):	3 (E)
Hazard Identification Number:	80

15 - REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I as amended

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Directive 94/33/EC on the protection of young people at work

Other regulations The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

15.2 Chemical Safety Assessment

National regulations Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work. Follow national regulation for work with chemical agents.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out.

16 - OTHER INFORMATION

List of abbreviations

CO Carbon Monoxide
NO Nitrogen Oxide
HCL Hydrochloric acid
TWA Time weighted average
STEL Short Term exposure limit
DW Dry weight

References

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

C Corrosive
Xn Harmful
Xi Irritant
N Dangerous to the environment
R10 Flammable
R22 Harmful if swallowed
R34 Causes burns
R35 Causes severe burns
R36/38 Irritating to eyes and skin
R50 Very toxic to aquatic organisms
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

H226 Flammable liquid and vapour
H290 May be corrosive to metals
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H315 Causes skin irritation
H318 Causes serious eye damage
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P405 Store Locked up.
P501 Dispose of contents/container in accordance with local regulations.

Training information Follow training instructions when handling this material.

Disclaimer

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