

SAFETY DATA SHEET

DDC Aqua Shield

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

1.1. Product identifier

Trade name

DDC Aqua Shield

Unique formula identifier (UFI)

0X90-10RJ-E00D-TNGN

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

Relevant identified uses of the substance or mixture

None known.

Restricted to professional users.

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

Company and address

Barkwith Europe Limited

Office 1, Pearse Street Dart Station

D02 PP40 Dublin

Ireland

01673885333

Manufacturer

The Fulcrum

Vantage Way

Poole

Dorset

BH12 4NU

United Kingdom

+44 (0)1202 731 555

E-mail

info@ddcdolphin.com

Revision

09/05/2025

SDS Version

1.0

1.4. Emergency telephone number

The National Poisons Information Centre (NPIC)

Public: +353 (0) 1 809 2166 (7 days a week, 8am- 10pm)

Healthcare professionals: +353 (0) 1 809 2566 (24 h service)

See also section 4 "First aid measures"

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP).

2.1. Classification of the substance or mixture

Skin Irrit. 2; H315, Causes skin irritation.

Eye Irrit. 2; H319, Causes serious eye irritation.

2.2. Label elements

Hazard pictogram(s)



Signal word

Warning

Hazard statement(s)

Causes skin irritation. (H315)

Causes serious eye irritation. (H319)

Precautionary statement(s)

General

-

Prevention

Wash hands thoroughly after handling. (P264)

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

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. (P305+P351+P338)

If eye irritation persists: Get medical advice/attention. (P337+P313)

Storage

-

Disposal

-

Hazardous substances

Does not contain any substances required to report

Additional labelling

UFI: 0X90-10RJ-E00D-TNGN

2.3. Other hazards

Additional warnings

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Tetrasodium (1-hydroxyethylidene)bisphosphonate	CAS No.: 3794-83-0 EC No.: 223-267-7 REACH: 01-2119510382-52-XXXX Index No.:	15-25%	Acute Tox. 4, H302 (ATE: 940.00 mg/kg) Eye Irrit. 2, H319 (SCL: 30.00 %)	
Sodium hydroxide; caustic soda	CAS No.: 1310-73-2 EC No.: 215-185-5 REACH: 01-2119457892-27 Index No.: 011-002-00-6	<1%	Skin Corr. 1A, H314 Skin Corr. 1B, H314 (SCL: 2.00 %) Skin Irrit. 2, H315 (SCL: 0.50 %) Eye Irrit. 2, H319 (SCL: 0.50 %)	

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

-

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact

IF ON SKIN: Wash with plenty of water and soap.

Remove contaminated clothing and shoes. Ensure to wash exposed skin thoroughly with water and soap. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

Eye contact

If in eyes: Flush eyes immediately with plenty of water or isotonic water (20-30 °C) for at least 5 minutes and continue until irritation stops. Remove contact lenses. Make sure to flush under upper and lower eyelids. If irritation continues, contact a doctor. Continue flushing during transport.

Ingestion

If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink.

In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

Burns

Not applicable.

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

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs.

Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

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

If eye irritation persists: Get medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Not applicable.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Carbon oxides (CO / CO₂)

Some metal oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the National Poisons Information Centre (NPIC) on +353 (0) 1 809 256 (24 h service) in order to obtain further advice.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.

Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material

Keep only in original packaging.

Storage conditions

Do not mix with other products.

Maximum storage period:

2 years.

Storage temperature:

0 - 30 °C

Incompatible materials

Strong acids

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No substances are listed in the "List of Chemical Agents and Occupational Exposure Limit Values" with an occupational exposure limit.

DNEL

Sodium hydroxide; caustic soda

Duration:	Route of exposure:	DNEL:
Long term – Local effects - General population	Inhalation	1 mg/m ³
Long term – Local effects - Workers	Inhalation	1 mg/m ³

Tetrasodium (1-hydroxyethylidene)bisphosphonate

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - General population	Dermal	24 mg/kg bw/day
Long term – Systemic effects - Workers	Dermal	48 mg/kg bw/day
Long term – Local effects - General population	Inhalation	10 mg/m ³
Long term – Local effects - Workers	Inhalation	10 mg/m ³
Long term – Systemic effects - General population	Inhalation	4.2 mg/m ³
Long term – Systemic effects - Workers	Inhalation	16.9 mg/m ³
Long term – Systemic effects - General population	Oral	2.4 mg/kg bw/day

PNEC

Tetrasodium (1-hydroxyethylidene)bisphosphonate

Route of exposure:	Duration of Exposure:	PNEC:
--------------------	-----------------------	-------

According to EC-Regulation 1907/2006 (REACH), annex II, including changes implemented by EC-Regulation 2020/878

Freshwater	0.096 mg/L
Freshwater sediment	193 mg/kg
Marine water	0.00963 mg/L
Marine water sediment	19.3 mg/kg
Sewage treatment plant	58 mg/kg
Soil	14 mg/kg

8.2. Exposure controls

Apply general control to prevent unnecessary exposure

General recommendations

Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Occupational exposure limits have not been defined for the substances in this product.

Appropriate technical measures

Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures

Take off contaminated clothing and wash it before reuse.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally


Use only CE marked protective equipment.

Respiratory Equipment

Type	Class	Colour	Standards
Respiratory protection is not needed in the event of adequate ventilation.			


Skin protection

Recommended	Type/Category	Standards
Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product.	-	-




Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards
Gloves	-	-	EN374



Eye protection

Type	Standards
Safety glasses	EN ISO 16321-1



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Clear, Pale yellow

Odour / Odour threshold

None

pH

10.5 - 11.4

Density (g/cm³)

-

Relative density

1.2 - 1.3

Kinematic viscosity

No data available.

Particle characteristics

Does not apply to liquids.

Phase changes

Melting point/Freezing point (°C)

-10 to -5

Softening point/range (°C)

Does not apply to liquids.

Boiling point (°C)

No data available.

Vapour pressure

No data available.

Relative vapour density

No data available.

Decomposition temperature (°C)

No data available.

Data on fire and explosion hazards

Flash point (°C)

No data available.

Flammability (°C)

No data available.

Auto-ignition temperature (°C)

No data available.

Lower and upper explosion limit (% v/v)

No data available.

Solubility

Solubility in water

No data available.

n-octanol/water coefficient (LogKow)

No data available.

Solubility in fat (g/L)

No data available.

9.2. Other information

Other physical and chemical parameters

No data available.

Oxidizing properties

No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid formation of vapours.

10.5. Incompatible materials

Strong acids

Reducing agents

Strong oxidizing agents

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	940.0 mg/kg

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
Species:	Rabbit
Route of exposure:	Dermal
Test:	LD50
Result:	>5000 mg/kg

Product/substance	Sodium hydroxide; caustic soda
Species:	Rat
Route of exposure:	Oral
Test:	LC50
Result:	> 2000 mg/kg

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Long term effects

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs.
Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to

health.

Other information

None known.

SECTION 12: Ecological information

12.1. Toxicity

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
Species:	Fish, <i>Oncorhynchus mykiss</i>
Duration:	96 hours
Test:	LC50
Result:	278 mg/L

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
Species:	Daphnia, <i>Daphnia magna</i>
Duration:	48 hours
Test:	EC50
Result:	754 mg/L

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
Species:	Daphnia, <i>Daphnia magna</i>
Duration:	28 days
Test:	NOEC
Result:	9.63 mg/L

Product/substance	Sodium hydroxide; caustic soda
Species:	Fish
Duration:	96 hours
Test:	LC50
Result:	33 - 189 mg/L

Product/substance	Sodium hydroxide; caustic soda
Species:	Fish, <i>Oncorhynchus mykiss</i>
Duration:	96 hours
Test:	LC50
Result:	45.5 mg/L

Product/substance	Sodium hydroxide; caustic soda
Species:	Fish, <i>Gambusia affinis</i>
Duration:	96 hours
Test:	LC50
Result:	125 mg/L

Product/substance	Sodium hydroxide; caustic soda
Species:	Daphnia, <i>Daphnia magna</i>
Duration:	48 hours
Test:	EC50
Result:	40 - 240 mg/L

Based on available data, the classification criteria are not met.

12.2. Persistence and degradability

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
Conclusion:	Not biodegradable

Product/substance	Sodium hydroxide; caustic soda
Conclusion:	Not biodegradable

12.3. Bioaccumulative potential

Product/substance	Tetrasodium (1-hydroxyethylidene)bisphosphonate
LogKow:	< -3.0
Conclusion:	Potential for bioaccumulation is very low

Product/substance Sodium hydroxide; caustic soda
Conclusion: Bioaccumulation is not expected

12.4. Mobility in soil

Tetrasodium (1-hydroxyethylidene)bisphosphonate
LogKoc = 4.2, Low mobility potential.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties

Product/substance Tetrasodium (1-hydroxyethylidene)bisphosphonate
Conclusion: No adverse effect observed

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product is not covered by regulations on dangerous waste.
Dispose of contents/container to an approved waste disposal plant.
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code

Not applicable.

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group

** Environmental hazards

Additional information

Not dangerous goods according to ADR, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Restrictions for application

Restricted to professional users.

Demands for specific education

No specific requirements.

SEVESO - Categories / dangerous substances

Not applicable.

Additional information

Not applicable.

Sources

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H302, Harmful if swallowed.

H314, Causes severe skin burns and eye damage.

H315, Causes skin irritation.

H319, Causes serious eye irritation.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CE = Conformité Européenne (European conformity)

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment

CSR = Chemical Safety Report

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

EINECS = European Inventory of Existing Commercial chemical Substances

ES = Exposure Scenario

EUH statement = CLP-specific Hazard statement

EuPCS = European Product Categorisation System

EWC = European Waste Catalogue

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

GWP = Global warming potential

IARC = International Agency for Research on Cancer (IARC)

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

OECD = Organisation for Economic Co-operation and Development

PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

RRN = REACH Registration Number

SCL = A specific concentration limit

SVHC = Substances of Very High Concern

STOT-RE = Specific Target Organ Toxicity - Repeated Exposure

STOT-SE = Specific Target Organ Toxicity - Single Exposure

TWA = Time weighted average

UN = United Nations

UVBC = Unknown or variable composition, complex reaction products or of biological materials

VOC = Volatile Organic Compound

vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The safety data sheet is validated by

SVR

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: IE-en