1. Identification

Product identifier

Product name FLOCON® 135
Chemical name Phosphinocarboxylic acid
Product number 100496, 100497, 100498, 100499, 100500, 100501, 100502, 100503, 101305, 101306, 101423, 101550

Recommended use of the chemical and restrictions on use

Application Antiscalant

Details of the supplier of the safety data sheet

Supplier BWA Water Additives US LLC
1979 Lakeside Parkway, Suite 925
Tucker, GA 30084 USA
T: +1 800-600-4523
(Technical/commercial enquiries)
F: +1 678-802-3050
E: msds@wateradditives.com

Emergency telephone number

Emergency telephone Chemtrec Phone: 1-800-424-9300
National emergency telephone For Medical Emergency: 1-303-623-5716
number For Transport Emergency: 1-800-424-9300 (CHEMTREC)

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified
Health hazards Not Classified
Environmental hazards Not Classified

Label elements

Hazard statements NC Not Classified

3. Composition/information on ingredients

Mixtures

Composition comments Aqueous solution of phosphinocarboxylic acid

4. First-aid measures

Description of first aid measures
FLOCON® 135

Inhalation
Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

Ingestion
Never give anything by mouth to an unconscious person. Do not induce vomiting. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.

Skin Contact
Immediately remove contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

Eye contact
Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

Most important symptoms and effects, both acute and delayed

Inhalation
No specific symptoms known.

Ingestion
No specific symptoms known. May cause discomfort if swallowed.

Skin contact
No specific symptoms known. May cause skin irritation/eczema.

Eye contact
No specific symptoms known. May cause temporary eye irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
The product is non-combustible. Extinguish with the following media: Water spray, fog or mist. Foam, carbon dioxide or dry powder.

Special hazards arising from the substance or mixture

Specific hazards
The product is non-combustible. Irritating gases or vapors. No unusual fire or explosion hazards noted.

Hazardous combustion products
Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. Oxides of: Phosphorus.

Advice for firefighters

Protective actions during firefighting
Move containers from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters
Leave danger zone immediately.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions
Follow precautions for safe handling described in this safety data sheet.

Environmental precautions
Avoid release to the environment. To prevent release, place container with damaged side up.

Methods and material for containment and cleaning up
FLOCON® 135

Methods for cleaning up

Avoid the spillage or runoff entering drains, sewers or watercourses. Absorb in vermiculite, dry sand or earth and place into containers. Collect spillage for reclamation or disposal in sealed containers via a licensed waste contractor. Containers with collected spillage must be properly labeled with correct contents and hazard symbol.

Reference to other sections

For waste disposal, see section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions

Good personal hygiene procedures should be implemented. Avoid spilling. Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities

Storage precautions

Store in tightly-closed, original container in a dry and cool place. Store at temperatures not exceeding «Value in °C»°C/«Value in °F»°F. Do not store for extended periods below freezing point or in direct sunlight. IF FROZEN: once fully thawed, agitate container vigorously to ensure the product is homogeneous. Store away from the following materials: Alkalis. Oxidizing materials. Reducing agents. Keep separate from food, feedstuffs, fertilizers and other sensitive material.

Storage class

Unspecified storage.

Specific end uses(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

The following protection should be worn: Chemical splash goggles.

Hand protection

Selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Wear protective gloves made of the following material: Neoprene. Nitrile rubber. Polyethylene. Polyvinyl chloride (PVC). It should be noted that liquid may penetrate the gloves. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear apron or protective clothing in case of contact.

Hygiene measures

No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products.

Respiratory protection

No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance

Liquid.
FLOCON® 135

Color
Colorless.

Odor
Slight.

Odor threshold
Not available. Not available.

pH
pH (concentrated solution): 3.5-4.5

Melting point
Not available.

Initial boiling point and range
101 - 103 @°C @ 760 mm Hg

Flash point
> 93°C PMCC (Pensky-Martens closed cup).

Freezing Point:

Evaporation rate
Not available.

Upper/lower flammability or explosive limits
Not applicable.

Vapor pressure
Not available.

Relative density
1.17-1.20 @ 20c

Solubility(ies)
Miscible with water.

Partition coefficient
log Pow: < 0

Auto-ignition temperature
Not available.

Decomposition Temperature
Not available.

Viscosity
35 - 60 cSt @ 25°C

Oxidizing properties
Does not meet the criteria for classification as oxidizing.

Other information
Not available.

10. Stability and reactivity

Reactivity
Reacts with alkalis and generates heat.

Stability
Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous reactions
Will not polymerize.

Conditions to avoid
Avoid excessive heat for prolonged periods of time.

Materials to avoid
Strong alkalis. Strong oxidizing agents.

Hazardous decomposition products
Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. Oxides of the following substances: Phosphorus.

11. Toxicological information

Information on toxicological effects

Supplemental Toxicological Information
A 90-day oral toxicity study in rats indicated bone damage and kidney effects at high doses. The effect for humans is unknown.
FLOCON® 135

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0
Species Rat

Inhalation No specific health hazards known.
Ingestion May cause discomfort if swallowed. May cause stomach pain or vomiting.
Skin Contact Non Irritant. Not a Skin Sensitiser
Eye contact Non irritant.

12. Ecological Information

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

Acute toxicity - fish LC₅₀, 96 hours: > 1000 , 
LC₅₀, 96 hours: >1000 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 320 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: 130 mg/l, Marinewater algae
IC₅₀, 72 hours: 130 mg/l, Algae

Persistence and degradability Not readily biodegradable
Chemical oxygen demand 370 g O₂/l

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Partition coefficient log Pow: < 0

Mobility in soil The product is miscible with water. May spread in water systems.

Other adverse effects Not available.

13. Disposal considerations

Waste treatment methods
General information When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

Rail transport notes Not classified.

Sea transport notes Not classified.
FLOCON® 135

Air transport notes Not classified.

UN proper shipping name

Packing group

Environmental hazards

Environmentally Hazardous Substance
No.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed.

SARA 313 Emission Reporting
None of the ingredients are listed.

CAA Accidental Release Prevention
None of the ingredients are listed.

FDA - Essential Chemical
None of the ingredients are listed.

FDA - Precursor Chemical
None of the ingredients are listed.

SARA (311/312) Hazard Categories
Threshold Planning Quantity 10,000lbs.

OSHA Highly Hazardous Chemicals
None of the ingredients are listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-I)
None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed.

Massachusetts "Right To Know" List
None of the ingredients are listed.

Rhode Island "Right To Know" List
None of the ingredients are listed.
FLOCON® 135

Minnesota "Right To Know" List
None of the ingredients are listed.

New Jersey "Right To Know" List
None of the ingredients are listed.

Pennsylvania "Right To Know" List
None of the ingredients are listed.

Inventories
EU - EINECS/ELINCS
All the ingredients are listed or exempt.

Canada - DSL/NDSL
All the ingredients are listed or exempt.

US - TSCA
All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification
None of the ingredients are listed.

Australia - AICS
All the ingredients are listed or exempt.

Japan - MITI
All the ingredients are listed or exempt.

Japan- IHSL

Korea - KECI
All the ingredients are listed or exempt.

China - IECSC
All the ingredients are listed or exempt.

Philippines - PICCS
All the ingredients are listed or exempt.

New Zealand - NZIOC
All the ingredients are listed or exempt.

Taiwan -TCSI

16. Other information

General information
Flocon 135 is certified by NSF International for use as an antiscalant in reverse osmosis plants. The maximum approved dose level is 10 mg/l in the feedwater. For advice on chemical emergencies, spillages, fires or first aid in relation to this product please contact the relevant emergency number below : EU/English Speakers - +44 (0) 1235 239 670 (NCEC) Arabic Speakers - +44 (0) 1235 239 671 Asia/Pacific countries - +65 3158 1074 For emergencies within China - +86 10 5100 3039

Revision comments
4.2 KIWA certification added

Issued by
BWA Water Additives Regulatory Group, +44(0)1618646699

Revision date
6/22/2017
## FLOCON® 135

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<td>10251</td>
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<tr>
<td>NFPA - instability hazard</td>
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<td>NFPA - special hazard</td>
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<td>NFPA - health hazard</td>
<td>No health hazards specifically noted for fire situations. (0)</td>
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<tr>
<td>NFPA - flammability hazard</td>
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<td>Plant#1 Taiwan Maximum Dose 10mg/L Plant at Manchester, UK  Maximum dose: 10 mg/L</td>
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<td>ACA HMIS Physical hazard rating.</td>
<td>Normally stable. (0)</td>
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<tr>
<td>ACA HMIS Personal protection rating.</td>
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### For safety reasons it is IMPERATIVE that customers:

1. Ensure that all those within their control who use the products are supplied with all relevant information contained within the Safety Data Sheet and Technical Bulletin concerning the applications for which the product is designed and any instructions and warnings contained therein.

2. Consult BWA Water Additives before using or supplying the product for any other applications. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.