

# Product Information & Procedures

## Flocon 135 (AS-135)

### General Product Information

- Flocon 135 is a general antiscalant for reverse osmosis systems, highly effective in controlling the deposition of inorganic scale forming salts on membrane surfaces.
- Flocon 135 is an aqueous solution of a phosphinocarboxylic acid. It is compatible in use with all major reverse osmosis membranes.
- Flocon 135 will control  $\text{CaCO}_3$ ,  $\text{CaSO}_4$ ,  $\text{BaSO}_4$ ,  $\text{SrSO}_4$ , and  $\text{CaF}_2$  scale deposition
- Flocon 135 is tolerant of up to 0.5 mg/l total iron in the brine concentrate.
- Flocon 135 is certified to ANSI/NSF standard 60 for use in reverse osmosis systems producing potable water.

### Product Properties

The following are typical properties for Flocon 135 and should not be regarded as specification limits for the product.

Appearance:	Pale, yellow liquid
Odor:	Slight
pH:	3.5 to 4.5
Solids Content:	33 to 37% w/w
Specific Gravity at 20/20°C:	1.17 to 1.20
Boiling Point Range:	100 to 103 °C
Freezing Point Range:	0 to -3 °C

### Chemical Reactivity

Flocon 135 is not affected by chlorine or other oxidizing biocides under normal conditions of use. Flocon 135 may be used in membrane systems using chlorine and sodium metabisulfite. Flocon 135 is hydrolytically stable. It does not form insoluble sodium or potassium salts.

### Applications and Dose Level

Flocon 135 is an aqueous solution of an organic acid and as such is corrosive in its concentrated form. Corrosion resistant dosing equipment must therefore be used. Examples of suitable materials are 316L stainless steel, or plastics such as GRP, PVC, and PE. The recommended injection point is into the feedwater downstream of any filtration equipment and cartridge filters.

Flocon 135 is miscible with water in all proportions. It may be applied as the neat product, or as a solution in distillate. A minimum dosing solution strength of 10% w/w is recommended. Flocon 135 should be dosed continuously and proportionately to the feed water flow, to maintain the recommended dose level.

The dose level required is dependent on the quality of the feedwater and the saturation indices of the various scale forming species present in the concentrated brine. Proprietary computer software is used to calculate scaling indices and calculate optimum system recovery. Dose level projections and recommendations are available on request.

### Health and Safety

Flocon 135 is an aqueous solution containing phosphinocarboxylic acid. From results of acute studies, it is classed as non-toxic. A Material Safety Data Sheet (MSDS) is available on request.

### Regulatory

Flocon 135 is certified to ANSI/NSF Standard 60 for use in reverse osmosis systems producing potable water.

### Toxicology Data

Acute Oral LD <sub>50</sub> :	>5000 mg/kg
Eye Irritation (rabbits):	Non-irritant (EEC guidelines)
Skin Irritation (rabbits):	Non-irritant (EEC guidelines)

### Ecological Data

96-hr LC <sub>50</sub> (rainbow trout):	>1000 mg/l
96-hr LC <sub>50</sub> (zebra fish):	>1000 mg/l
96-hr LC <sub>50</sub> (brown shrimp):	>10,000 mg/l
24-hr LC <sub>50</sub> (daphnia):	>320 mg/l
72-hr LC <sub>50</sub> (algae inhibition):	>130 mg/l
COD:	780 mg oxygen/g
Biodegradability:	Not readily biodegradable (OECD 301E)

### Logistics

Classification:	Non-hazardous for conveyance; Non-irritant for supply.
Packaging:	HDPE 220L XL-rung Mauser drum 932×580mm height×dia Net weight: 230 kg; Gross Weight: 238.5 kg Flocon 135 is also available in 50-lb. containers.

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