

Belite® M8 Antifoam for Seawater Distillation Plants

General Product Information

Belite M8 antifoam is a highly effective liquid product formulated to control foaming and priming in seawater distillation plants.

Belite M8 has proven effectiveness during many years use in distillation plants throughout the world.

Low dose levels, typically in the range 0.05 to 0.1 mg/l in the seawater feed stream, depending on feed water quality.

Activity is not dependent on temperature. No need to alter dose level if top brine temperature (TBT) changes.

Negligible steam volatility and carry over into the distillate.

All components of the Belite M8 formulation are approved for use as food additives by US FDA.

Product Properties

The following are typical properties for Belite M8 and should not be regarded as specification limits for the product. A product specification is available on request.

Appearance liquid	Clear to pale yellow
Odour	Slight
Saponification value	11.9 - 14.2 mg KOH/g
Water content	3.5% w/w maximum
Specific gravity at 20/20°C	0.95 to 1.00
Aqueous emulsion at 20°C	Readily dispersible white-milky emulsion at 5% w/w
Aqueous emulsion at 20°C solution	Blue translucent

Chemical Reactivity

Belite M8 is readily broken down by oxidising agents and typically has a COD value of 2.36 g O₂/g. Belite M8 is compatible in use with most antiscalants.

Application and Dose Level

The foaming tendency of seawater in distillation plants is unpredictable. It is generally thought that foam is formed when organic compounds are concentrated in the brine, giving rise to surface active effects which increase the liquid film strength at phase interfaces. Belite M8 is not soluble in water. At use concentrations (0.05 - 0.1 mg/l) Belite M8 forms a micro-emulsion and during evaporation is incorporated into the surface liquid film of bubbles where it acts as a surfactant and reduces the film strength. The result is that the film readily ruptures and a stable foam does not form. In this way a uniform boiling or flashing action is achieved and carry-over is minimised.

Belite M8 can be used to control foaming in all types of seawater distillation plant and is particularly suitable for use in multi-stage flash plants. Belite M8 is a formulated product containing ethylene oxide / propylene oxide block copolymer.

As such it is not soluble in water but readily forms a stable emulsion at concentrations up to 1% w/w in distillate.

Belite M8 is typically dosed as a 1% w/w emulsion in distillate prepared as follows:

- Add 50% - 70% of required distillate volume into dosing tank;
- Start the dosing tank agitator/mixer;
- Add the required Belite M8 volume into the dosing tank;
- Add the remaining volume of distillate to give the required concentration of Belite M8 solution;
- Continue agitation for a further 10 - 15 minutes;
- The resulting emulsion will be stable and will not normally separate

The dose level required will depend on the quality of the seawater feed (e.g. dissolved organics, suspended solids) but is typically found to be in the range 0.05 to 0.1 mg/l and is subject to optimisation as operating experience is gained. Dose level is not dependent on operating temperature of the distillation plant.

Recommended injection points are either into the seawater make-up line after any external de-aeration and decarbonation equipment, or into the recycle brine stream at a suitable point after the blowdown and typically into the discharge of the recycle brine pump.

Health and Safety

Belite M8 is a formulated liquid product containing ethylene oxide /propylene oxide copolymers and emulsifying agent.. Belite M8 is considered to present no known hazards under normal conditions of use. Full details of safety and handling procedures are given in the Material Safety Data Sheet for the product which is available on request.

Regulatory

All components of the Belite M8 formulation are approved for use as food additives by the US FDA.

Logistics

Packaging	210L (nominal volume) mild steel drum 890 x 580 mm height x diameter Net weight 200 kg Gross weight 217 kg
-----------	---

Patents

BWA Water Additives (BWA) owns or is the licensee of patents and patent applications, which may cover the products and/or uses described in this brochure.

The following are registered trademarks of BWA
Belite, Drop and Swirl logo.

® Registered US Patent and Trademark Office.

© 2006 BWA, All rights reserved.

V0606

BWA Water Additives
Europe and Middle East Region
2 Brightgate Way, Cobra Court
Stretford, Manchester M32 0TB
United Kingdom
Telephone + 44 161 875 3875
Fax + 44 161 875 3175

BWA Water Additives
Americas Region
1979 Lakeside Parkway, Suite 925
Tucker, GA 30084
USA
Telephone + 1 678 802 3050
Or 800 600 4523
Fax + 1 678 802 3024

BWA Water Additives
Asia Pacific Region
Telok Blangah East Post Office
PO Box 129
Singapore 910901
Telephone + 65 9758 0554
Fax + 65 6234 3606

Visit our website at: www.wateradditives.com

The information contained in this product sheet is based on data available to BWA Water Additives and is thought to be correct. Since BWA, has no control over the use of this information by others, BWA does not guarantee the same results described herein will be obtained, and makes no warranty of merchantability or fitness for a particular purpose or any express or implied warranty. This information is intended for use by technically trained personnel at their discretion and risk. BWA Water Additives UK Limited is a private limited company registered in England and Wales at 2 Brightgate Way, Manchester M32 0TB, Registered No. 5657343

