



Foam control agent for water treatment

Description

HYDRAFOAM[®] HF-6401 is a 100% active, fast acting foam control agent for use in industrial and municipal water treatment. It can be used as both an antifoam and a defoamer. HF-6401 is characterised as being a blend of anionic and nonionic surface active agents in white oil. HF-6401 is a food grade formulation meaning it can also be used in the processing of foods and in the manufacture of food packaging materials.

Product Benefits

- » Liquid formula ideal for metering and dilution
- » Effective over a wide pH range (4–11)
- » Anionic/nonionic agents for fast foam destabilisation
- » Long lasting for lower overall consumption
- » Compliant to parts of 21 CFR (see next page)

Foam

In water treatment, foam usually occurs due to chemical contamination or bacterial activity, combined with mechanical action. Thus when air or gases are introduced into a process stream at a point of turbulence, foam may be produced.

If not controlled, the foam generated can build a stable froth and leave a scum deposit. This foam layer can entrap process solids, contaminants, silt and sludge.

Foam can lower vessel operating volumes, inhibit level control, create process separation problems and restrict process flows. Uncontrolled foam can be unsightly, it may increase product loss, create environment problems through loss of containment, and become a safety hazard.

In activated sludge plants unwanted foam can trap heat as well as hold large quantities of bacteria making them less available for waste degradation. Sometimes foam can overflow the activated sludge basin and thus contribute to the uncontrolled loss of active bacteria leading to operational problems and lower overall plant efficiency.

Mode of Action

HF-6401 can act as an antifoam to prevent foam from forming, and as a defoamer to rapidly knock down existing foam that has formed.

HF-6401 is designed to promote water drainage from the foam or bubble wall which in turn increases the rate of bubble film thinning. This reduces bubble stability allowing rupturing and/or coalescence with other bubbles. This action inhibits the formation of a stable foam and helps destroy already formed foams.

Properties

Form:	Liquid
Colour:	Light tan to yellow
SG:	0.90 ± 0.02
Viscosity:	900 cP @ 25 °C

Product Application

For efficient and economic use of HF-6401, the selection of a suitable addition point and/or method of application are important factors.

HF-6401 is best fed to the surface of the process or liquid stream to help prevent and suppress foam formation. This may become important for solids laden waters (i.e. for slurries in manufacturing processes, or RAS lines in activated sludge plants) as when dosed in-line HF-6401 may coat the solids rather than migrate to the surface where it can prevent and eliminate foam.

The dose rate of HF-6401 is dependent on the extent of foaming, the process water quality, the foam bubble size and the amount of agitation. As these process variables change the most economic dose may also change.

As an antifoam, HF-6401 should be dosed on a continuous basis upstream of the foam generation point. Utilising a peristaltic type metering pump directly from the container will ensure a continuous and controlled low addition of product and the most economic use.

When used as an antifoam HF-6401 is usually dosed in a range from 20–200 mg/L; laboratory and field trials are recommended to determine a narrower dose range.

As a defoamer, HF-6401 can be diluted with water (up to 1:100) and sprayed directly on the foam. A spray system is ideal for quickly spreading defoamer across the surface and is well suited to eliminate already accumulated foam. When sprayed directly to the foam surface, a short large dose will destabilise existing foam. This can be followed by a much lower maintenance dose to help minimise further foam production and lower overall product use.

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Storage

HF-6401 has a shelf life of 12 months from the date of delivery in its original sealed drum. Storage temperature should be within the range of 5–30°C. If the product drum has been opened for use then the drum should be well sealed when not in use to help maximise shelf life.

The Code of Federal Regulations

The ingredients used in HydraFoam HF-6401 meet the requirements of the following sections of the Code of Federal Regulations (CFR) Title 21 - Food and Drugs, as administered by the Food And Drug Administration, Department Of Health And Human Services, United States of America.

- 21 CFR 173 Secondary Direct Food Additives Permitted in Food For Human Consumption
 - 21 CFR 173.340 Defoaming agents.

- 21 CFR 175 Indirect Food Additives: Adhesives and Components of Coatings
 - 21 CFR 175.105 Adhesives.
 - 21 CFR 175.300 Resinous and polymeric coatings.

- 21 CFR 176 Indirect Food Additives: Paper and Paperboard Components
 - 21 CFR 176.170 Components of paper and paper board in contact with aqueous and fatty foods.
 - 21 CFR 176.180 Components of paper and paperboard in contact with dry foods.
 - 21 CFR 176.200 Defoaming agents used in coatings.
 - 21 CFR 176.210 Defoaming agents used in the manufacture of paper and paperboard.