BREOX FCC-RANGE FOR SUGAR PROCESSING

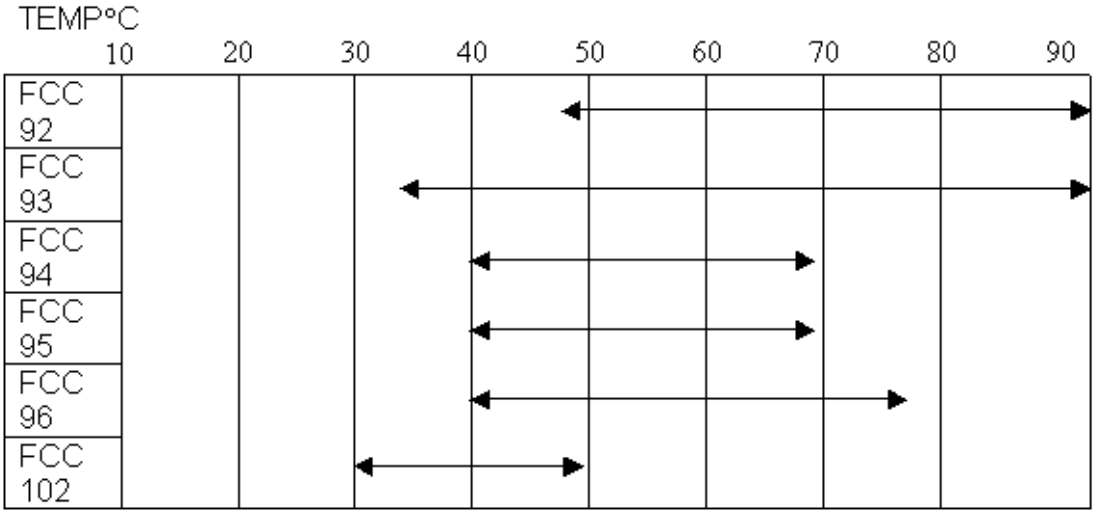
INTRODUCTION

The **BREOX** Sugar Processing range of foam control agents consists of 100% active polyalkylene glycols that have been specifically developed for the suppression of foam in the sugar-beet processing industry.

APPLICATION

BREOX FCC's demonstrate excellent stability over a wide pH range, ensuring their effectiveness throughout various stages of sugar beet processing such as, diffusion, liming and carbonation. The components of the polyalkylene glycols are of low polarity and as such, they are also suitable for use in refineries operating the Quentin process.

BREOX FCC's are individually designed to operate over specific temperature ranges, thus enabling effective foam control during the cooler transportation and washing stages, in process areas where localised temperature variation is a problem and at normal diffusion temperatures. Typical operating ranges are as follows:



FCC 92:	A well-established antifoam for use in the sugar industry. FCC 92 is commonly used in formulations for aqueous systems above 50ºC and has proved to be an effective antifoam in a range of diffusion systems such as, BMA, DDS, RT, Buckau-Walther and De Smet.
FCC 93:	FCC 93 has been introduced into the BREOX range as a fully-formulated product operating over a wide temperature range. It may be easily blended with water to create low-cost formulations and will offer full protection against foam formation at all normal diffusion temperatures above 40ºC.
FCC 94:	A lower temperature range foam control agent, FCC 94 complements the higher temperature performance of FCC 92 and may be esterified to further improve lower temperature antifoam performance.
FCC 95:	Closely related to FCC 94 in structure however, slightly higher optimum operating temperature characteristics are observed with FCC 95.
FCC 96:	Exhibiting excellent antifoam performance as a concentrate, FCC 96 is commonly formulated and esterified to further optimise its use.
FCC 102:	Ideally suited to low temperature transport systems, esterification of FCC 102 will promote its' low temperature antifoam characteristics.

TYPICAL PROPERTIES

The typical values presented here are believed to be accurate, they should not however be considered to constitute a specification.

Physical Attribute	**Analysis Method**	**Value**					
		FCC 92	**FCC 93**	**FCC 94**	**FCC 95**	**FCC 96**	**FCC 102**
Viscosity @40°C (cSt)	ASTM D 445	300	288	440	425	260	121
Density @20°C (kgm^{-3})	ASTM D 1298	1049	1040	1045	1050	1060	1024
Flash Point (°C) (COC)	ASTM D 92	>220	>220	>220	>200	>250	>220
Cloud Point (°C) (1% aqueous)	ASTM D2500	43	40	36	41	40	27
Pour Point (°C)	ASTM D 97	-24	-15	-2	-2	-2	-24
Operating range (°C)	-	46-100	34-100	40-70	40-70	40-76	30-50

DOSING & FORMULATION

BREOX FCC's may be either dosed directly into the system, typically at concentrations in the region of 25-100ppm, by using a micro-metering pump or alternatively can be formulated or further esterified, whilst maintaining high levels of performance. Formulations with water or fatty acids can create lower cost antifoams, with the resultant lower viscosities allowing easier dosing to the system. Such formulations require only simple agitation prior to use and can allow considerable savings to be made by the formulator.

Examples of typical **BREOX** foam control agent formulations are as follows:

Component	Blend A	Blend B	Blend C
	% w/w		
BREOX FCC 93	50.00		
BREOX FCC 92		35.00	91.00
BREOX 50-A-380		15.00	
Fatty Acid	5.00		9.00
Deionised Water	45.00	45.00	
Isopropanol		5.00	

PRODUCT COMPLIANCE

BREOX FCC 92, 93, 94, 95, 96 and 102 may be used as antifoams in sugar beet processing up to a maximum dosage level of 150 ppm, in full compliance with the Food and Drug Administration (FDA) Federal Food, Drug and Cosmetic Act and all applicable food additive regulations including 21 CFR § 173.340.

BREOX FCC 92, 93, 94, and 102 are Kosher Pareve (including Passover) certified.

Remarks

Handling & Safety: A material Safety Data Sheet (MSDS) has been issued describing the health, safety and environmental characteristics of the BREOX FCC range of products together with handling precautions and emergency procedures. This must be consulted and fully understood before storage, handling and use.

Storage:

Revision-No. 1.3-08.2004 Effective August 17, 2004

The product can be stored for at least 2 years at ambient storage conditions and temperature without any deterioration.

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