



## Foam Control Agents

Under our market-leading brand Bisomer<sup>®</sup>, our extensive range of chemical defoamers is designed to tackle a range of different needs and challenges.

Each product has been specifically developed to meet the various requirements of industries that use water in their processes.

**And each has been engineered to an outstanding quality.**

GEO's Paints & Coatings Division helps formulators develop new products and solutions across a wide variety of industries.

We are a strategic supplier of defoamers on a global scale, yet we combine our practical capability with a more personal level of service and attention.



## A more personal approach for your foam control needs

**At GEO, we've been providing foam control agents on every scale for more than 25 years. From formulating higher quality solutions to understanding your applications, we've found care and consideration really count.**

Our established processes, product innovation and agile UK manufacturing location mean we thrive in the small details. With GEO, you get a close relationship, a can-do attitude and our full attention, whatever the size of your order.



## Our products

- Polyalkylene Glycols
- Specialty Defoamers
- Non-ionic Defoaming Agents
- Water Dispersible Defoamers



### A personal service

Our people are committed, knowledgeable and passionate about exceeding your expectations - because we take the time to understand your applications, we can recommend the ideal solution.



### Established facilities

Our proven processes and manufacturing facilities enable us to deliver at scale all around the world. Whatever you need - and wherever you need it - we're here to help

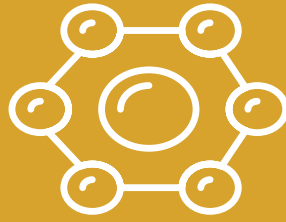


### Practical innovation

We're always looking for new ways to meet your needs. By spending time getting to know your organisation, our innovation is always driven by you - so new products, improvements and ideas deliver real value.

## Our approach





## Foam Control Agents

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# Applications

- Highly recommended

Product Name	Chemical Intermediates	Pulp & Paper	Fruit & Vegetable Processing	Sugar Beet Processing	Lubricity Additives	Fermentation	Cleaners & Detergents	Boiler Water Additives
Bisomer <sup>®</sup> FCC P18	●	●	●				●	●
Bisomer <sup>®</sup> FCC 72			●	●				
Bisomer <sup>®</sup> FCC P12	●	●	●				●	●
Bisomer <sup>®</sup> FCC P22	●	●	●					
Bisomer <sup>®</sup> FCC D21	●						●	
Bisomer <sup>®</sup> FCC F160	●	●					●	
Bisomer <sup>®</sup> FCC L8100	●				●		●	
Bisomer <sup>®</sup> FCC 30	●					●		
Bisomer <sup>®</sup> FCC 111	●			●		●		
Bisomer <sup>®</sup> FCC L9200	●				●		●	
Bisomer <sup>®</sup> FCC 102	●			●				
Bisomer <sup>®</sup> FCC F120	●						●	
Bisomer <sup>®</sup> FCC 252	●			●	●		●	
Bisomer <sup>®</sup> FCC L6200	●				●		●	
Bisomer <sup>®</sup> FCC 94	●			●				
Bisomer <sup>®</sup> FCC 172	●			●	●		●	
Bisomer <sup>®</sup> FCC 93				●				
Bisomer <sup>®</sup> FCC 92	●			●				●
Bisomer <sup>®</sup> FCC 174	●			●	●		●	
Bisomer <sup>®</sup> FCA 51					●			●

# Features & Benefits

Product Name	
Bisomer <sup>®</sup> FCC P18	High performance foam control agent primarily designed for paper pulping and paper making industries. May also be used in low temperature vegetable processing applications. Excellent water dispersibility, effective and stable under extremes of pH.
Bisomer <sup>®</sup> FCC 72	Foam control agent designed specifically for low temperature use (5-26°C), particularly in sugar beet transport and washing.
Bisomer <sup>®</sup> FCC P12	High performance foam control agent designed specifically for low temperature use (10-30°C) in cold water applications such as vegetable and starch processing and paper manufacturing.
Bisomer <sup>®</sup> FCC P22	High performance foam control agent primarily designed for paper pulping and paper making industries, particularly tissue paper industry. Best used at temperatures above 15°C and may also be used in low temperature vegetable processing applications.
Bisomer <sup>®</sup> FCC D21	Versatile foam control agent which can be used in many applications, including cleaners and detergents formulations. Suitable for both acid and alkaline formulations.
Bisomer <sup>®</sup> FCC F160	High performance foam control agent primarily designed for paper pulping and paper making industries, particularly tissue paper industry. Best used at temperatures above 30°C and may also be used in fruit and vegetable processing applications.
Bisomer <sup>®</sup> FCC L8100	Versatile foam control agent which can be used in a variety of applications including defoamer in detergents and cleaners formulations, lubricity additive and mould release agents. Good wetting properties. Best suited for application temperatures above 20°C.
Bisomer <sup>®</sup> FCC 30	High performance foam control agent primarily designed for fermentation processes. Other advantages of this grade include very low toxicity to the fermentation microorganisms and improved yields.
Bisomer <sup>®</sup> FCC 111	High performance foam control agent designed for low temperature use (40-70°C) in sugar beet processing, particularly in the fermentation stages.
Bisomer <sup>®</sup> FCC L9200	Versatile foam control agent which can be used in a variety of applications including defoamer in detergents and cleaners formulations, lubricity additive and mould release agents. Good wetting properties. Best suited for application temperatures above 30°C.
Bisomer <sup>®</sup> FCC 102	Foam control agent ideally suited for low temperature transport systems. Esterification of this grade will promote its low temperature antifoam characteristics.
Bisomer <sup>®</sup> FCC F120	Foam control agent ideally suited to suppress foam in cleaners and detergents formulations for a variety of industries.

# Features & Benefits

Product Name	
Bisomer <sup>®</sup> FCC 252	Versatile foam control agent which can be used in a variety of applications including defoamer in detergents or cleaners formulations, lubricity additive for synthetic metal working fluids and textile lubricants or as a foam control agent for the sugar refining step.
Bisomer <sup>®</sup> FCC L6200	Versatile foam control agent which can be used in a variety of applications including defoamer in detergents and cleaners formulations, lubricity additive and mould release agents. Best suited for application temperatures above 40°C.
Bisomer <sup>®</sup> FCC 94	High performance foam control agent designed specifically for low temperature use (40-70°C) in sugar beet processing, particularly in the diffusion and fermentation stages.
Bisomer <sup>®</sup> FCC 172	Versatile foam control agent which can be used in a variety of applications including defoamer in detergents or cleaners formulations, lubricity additive for synthetic metal working fluids and textile lubricants or as a foam control agent for the sugar refining step.
Bisomer <sup>®</sup> FCC 93	High performance foam control agent designed specifically for medium temperature use (35-100°C), in the cold head diffusion stage of sugar beet processing. Particularly suitable for the DDS plant design.
Bisomer <sup>®</sup> FCC 92	High performance foam control agent designed specifically for high temperature use (50-100°C), in sugar beet processing, particularly in the tower diffusion, liming and carbonation stages. Suitable for a wide variety of plant designs.
Bisomer <sup>®</sup> FCC 174	Versatile foam control agent which can be used in a variety of applications including defoamer in detergents or cleaners formulations, lubricity additive for synthetic metal working fluids and textile lubricants or as a foam control agent for the sugar refining step.
Bisomer <sup>®</sup> FCA 51	Foam control agent designed specifically for high temperature use (above 55°C), particularly in boiler waters and desalination plants.



# Chemical & Physical Properties

Product Name	Kinematic Viscosity (at 40°C) mm <sup>2</sup> /s	Density (at 20°C) kg/m <sup>3</sup>	Cloud Point <sup>1</sup> (1% aq.) °C	Flash Point °C	Pour Point °C
Bisomer <sup>®</sup> FCC P18	87	982	20 <sup>2</sup>	> 200	-24
Bisomer <sup>®</sup> FCC 72	210	994	< 0	> 200	-30
Bisomer <sup>®</sup> FCC P12	170	1011	12	> 230	-14
Bisomer <sup>®</sup> FCC P22	350	1015	12	> 200	-32
Bisomer <sup>®</sup> FCC D21	78	1024	16 <sup>2</sup>	222	-23
Bisomer <sup>®</sup> FCC F160	435	1009	27	242	17
Bisomer <sup>®</sup> FCC L8100	205	1005	19	226	-28
Bisomer <sup>®</sup> FCC 30	232	1020	20	> 200	< -25
Bisomer <sup>®</sup> FCC 111	295	1020	21	234	-34
Bisomer <sup>®</sup> FCC L9200	304	982	21	232	-2
Bisomer <sup>®</sup> FCC 102	450	1024	27	228	< -20
Bisomer <sup>®</sup> FCC F120	100	998	28 <sup>2</sup>	> 200	-7
Bisomer <sup>®</sup> FCC 252	239	1018	28	238	-35
Bisomer <sup>®</sup> FCC L6200	189	1031	34	230	7
Bisomer <sup>®</sup> FCC 94	440	1045	36	> 220	-2
Bisomer <sup>®</sup> FCC 172	183	1025	37	240	-37
Bisomer <sup>®</sup> FCC 93	288	1049	40	> 220	-15
Bisomer <sup>®</sup> FCC 92	300	1049	43	> 220	-24
Bisomer <sup>®</sup> FCC 174	241	1046	51	242	15
Bisomer <sup>®</sup> FCA 51	1000	1060	51	230	-36

<sup>1</sup> Cloud point measured as 1wt.% Aq. Solution (ASTM D2024/DIN EN1890 Method A)

<sup>2</sup> Cloud point measured as 16.6 wt.% in 25% BDG aq. solution (DIN EN1890 Method E)

# Chemical Inventory Registrations

- Listed

Product Name	REACH*	TSCA	DSL	ENCS	KECL	IECSC	PICCS	AICS	NZIOC	TCSCA
	EU	USA	Canada	Japan	Korea	China	Philippines	Australia	New Zealand	Taiwan
Bisomer® FCC P18	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 72	●	●						●	●	
Bisomer® FCC P12	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC P22	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC D21	●	●	●		●	●	●	●	●	●
Bisomer® FCC F160	●	●			●	●	●	●	●	●
Bisomer® FCC L8100	●		●	●	●	●	●	●	●	●
Bisomer® FCC 30	●		●	●	●	●	●	●	●	●
Bisomer® FCC 111	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC L9200	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 102	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC F120	●	●			●	●	●	●	●	●
Bisomer® FCC 252	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC L6200	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 94	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 172	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 93	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 92	●	●	●	●	●	●	●	●	●	●
Bisomer® FCC 174	●	●	●	●	●	●	●	●	●	●
Bisomer® FCA 51	●	●	●	●	●	●	●	●	●	●

\* REACH Registration: the product may be traded inside Europe; i.e. the ingredients are either pre-registered, registered, exempted or there is no obligation to register due to small volume. Customers are advised to contact GEO prior to import and for uses not covered by the Safety Data Sheet.

# Classification and Labelling

EC No. 1272/2008

Product Name	GHS Pictogram	Hazard Statements	Precautionary Statements
Bisomer <sup>®</sup> FCC P18	None	None	None
Bisomer <sup>®</sup> FCC 72	None	None	None
Bisomer <sup>®</sup> FCC P12	None	H412	P273, P501
Bisomer <sup>®</sup> FCC P22	None	None	None
Bisomer <sup>®</sup> FCC D21	None	None	None
Bisomer <sup>®</sup> FCC F160	GHS07	H315	P280, P264, P302+P352, P332+P313, P362
Bisomer <sup>®</sup> FCC L8100	None	None	None
Bisomer <sup>®</sup> FCC 30	None	None	None
Bisomer <sup>®</sup> FCC 111	None	None	None
Bisomer <sup>®</sup> FCC L9200	None	None	None
Bisomer <sup>®</sup> FCC 102	None	None	None
Bisomer <sup>®</sup> FCC F120	GHS07	H315	P280, P264, P302+P352, P332+P313, P362
Bisomer <sup>®</sup> FCC 252	None	None	None
Bisomer <sup>®</sup> FCC L6200	None	None	None
Bisomer <sup>®</sup> FCC 94	None	None	None
Bisomer <sup>®</sup> FCC 172	None	None	None
Bisomer <sup>®</sup> FCC 93	None	None	None
Bisomer <sup>®</sup> FCC 92	None	None	None
Bisomer <sup>®</sup> FCC 174	None	None	None
Bisomer <sup>®</sup> FCA 51	GHS06	H330	P260, P271, P284, P310, P304+P340, P403+P233

# Classification and Labelling Legend

Reference	Description
<b>HAZARD PHRASES</b>	
H315	Causes skin irritation
H330	Fatal if inhaled
H412	Harmful to aquatic life with long lasting effects
<b>PRECAUTIONARY STATEMENTS</b>	
P260	Do not breathe dust/fumes/gas/mist/vapours/spray
P271	Use only outdoors or in a well ventilated area
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P284	Wear respiratory protection
P310	Immediately call a POISON CENTER or doctor/physician
P302+P352	IF ON SKIN: wash with plenty of water
P304+P340	IF INHALED: remove person to fresh air and keep comfortable for breathing
P332+P313	If skin irritation occurs: get medical advice/attention
P403+P233	Store in a well ventilated place. Keep container tightly closed
P303+P361+P353	IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower
P362	Take off contaminated clothing
P501	Dispose of contents/container to...

## GHS PICTOGRAMS



GHS06



GHS07

# Classification and Labelling Legend

Reference	Description
<b>PRECAUTIONARY STATEMENTS</b>	
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat/sparks/open flames/hot surfaces - No smoking
P233	Keep container tightly closed
P261	Avoid breathing dust/fumes/gas/mist/vapours/spray
P262	Do not get in eyes, on skin or on clothing
P264	Wash face, hands and any exposed skin thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+P310	IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
P304+P340	May cause respiratory irritation
P301+P312	Very toxic to aquatic life
P301+P330+P331	Very toxic to aquatic life with long lasting effects
P302+P352	Toxic to aquatic life with long lasting effect
P305+P351+P338	Harmful to aquatic life with long lasting effects
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P303+P361+P353	IF ON SKIN (or hair): remove/take off all contaminated clothing immediately. Rinse skin with water/shower
P332+P313	If skin irritation occurs: get medical advice/attention
P337+P313	If eye irritation persists: get medical advice/attention
P362+P364	Take off contaminated clothing and wash it before reuse
P405	Store locked up
P501	Dispose of contents/container at an approved waste disposal plant

# Food Contact Approvals

Product Name	Boiler Water Additives	Sugar Beet Processing	Vegetables & Fruit Processing	173.310	173.340	175.105	176.180	176.200	176.210	177.1200	177.1210	177.1680	178.3570	178.3910
Bisomer® FCC P18	•	•	•											
Bisomer® FCC 72	•	•	•											
Bisomer® FCC P12	•	•	•								✓			
Bisomer® FCC P22	•	•	•											
Bisomer® FCC D21	•	•	•											
Bisomer® FCC F160	•	•	•											
Bisomer® FCC L8100					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCC 30					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCC 111	•	•	•					✓*		✓*	✓*	✓		
Bisomer® FCC L9200					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCC 102	•	•	•					✓*		✓*	✓*	✓		
Bisomer® FCC F120	•	•	•											
Bisomer® FCC 252					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCC L6200					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCC 94	•	•	•					✓*		✓*	✓*	✓		
Bisomer® FCC 172					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCC 93	•	•	•											
Bisomer® FCC 92	•	•	•					✓*		✓*	✓*	✓		
Bisomer® FCC 174					✓	✓	✓	✓	✓	✓	✓	✓		
Bisomer® FCA 51	✓			✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

- ✓ Meets FDA CFR 21 requirements for specified sections
- Steptoe & Johnson opinion that product can be used in specific applications (Steptoe & Johnson LLP, 1330 Connecticut Avenue NW, Washington, DC 20036-1795)
- \* When used as specified in CFR 21 177.1680

# FDA CFR 21 Approvals Legend

Part Number	Description
<b>173</b>	<b>Secondary Direct Food Additives permitted in food for human consumption</b>
<b>Subpart D</b>	<b>Specific usage additives</b>
173.310	Boiler water additives
173.340	Defoaming agents
<b>175</b>	<b>Indirect Food Additives: Adhesives and components of coatings</b>
<b>Subpart B</b>	<b>Substances for us only as components of adhesives</b>
175.105	Adhesives
<b>176</b>	<b>Indirect Food Additives: Paper and paperboard components</b>
<b>Subpart B</b>	<b>Substances for use only as components of paper &amp; paperboard</b>
176.180	Components of paper and paperboard in contact with dry food
176.200	Defoaming agents used in coatings
176.210	Defoaming agents used in the manufacture of paper and paperboard
<b>177</b>	<b>Indirect Food Additives: Polymers</b>
<b>Subpart B</b>	<b>Substances for use as basis components of single and repeated use food contact surfaces</b>
177.1200	Cellophane
177.1210	Closures for sealing gaskets for food containers
177.1680	Polyurethane resins
<b>178</b>	<b>Indirect Food Additives: Adjuvants, production aids and sanitizers</b>
<b>Subpart D</b>	<b>Certain adjuvants and production aids</b>
178.3570	Lubricants with incidental food contact
178.3910	Surface lubricants used in the manufacture of metallic articles

## EU 10/2011 Regulation Compliance

Product Name	EU Regulation No10/2011 on plastic materials and articles intended to come into contact with food
Bisomer <sup>®</sup> FCC L8100	✓
Bisomer <sup>®</sup> FCC 30	✓
Bisomer <sup>®</sup> FCC L9200	✓
Bisomer <sup>®</sup> FCC 252	✓
Bisomer <sup>®</sup> FCC L6200	✓
Bisomer <sup>®</sup> FCC 172	✓
Bisomer <sup>®</sup> FCC 174	✓
Bisomer <sup>®</sup> FCA 51	✓

## BfR<sup>a</sup> Recommendations on Food Contact Materials

Product Name	BfR XIV - Polymer dispersions	BfR XXXVI - Paper & Board for Food Contact
Bisomer <sup>®</sup> FCC P18	✓ <sup>b</sup>	
Bisomer <sup>®</sup> FCC P12	✓ <sup>b</sup>	
Bisomer <sup>®</sup> FCC L8100	✓	✓
Bisomer <sup>®</sup> FCC 30	✓	✓
Bisomer <sup>®</sup> FCC L9200	✓	✓
Bisomer <sup>®</sup> FCC 252	✓	✓
Bisomer <sup>®</sup> FCC L6200	✓	✓
Bisomer <sup>®</sup> FCC 172	✓	✓
Bisomer <sup>®</sup> FCC 174	✓	✓
Bisomer <sup>®</sup> FCA 51	✓ <sup>b</sup>	

<sup>a</sup> Bundesinstitut für Risikobewertung

<sup>b</sup> When reacted with polysiloxane

Customers are advised to check BfR website to ensure the product is listed for their intended application



## Kosher / Halal Certifications

Product Name	Kosher (Pareve Passover)	Halal
Bisomer <sup>®</sup> FCC P18	✓	✓
Bisomer <sup>®</sup> FCC 72	✓	✓
Bisomer <sup>®</sup> FCC P12	✓	✓
Bisomer <sup>®</sup> FCC P22	✓	✓
Bisomer <sup>®</sup> FCC D21	✓	✓
Bisomer <sup>®</sup> FCC F160	✓	✓
Bisomer <sup>®</sup> FCC L8100	✓	✓
Bisomer <sup>®</sup> FCC 30	✓	✓
Bisomer <sup>®</sup> FCC 111	✓	✓
Bisomer <sup>®</sup> FCC L9200	✓	✓
Bisomer <sup>®</sup> FCC 102	✓	✓
Bisomer <sup>®</sup> FCC F120	✓	✓
Bisomer <sup>®</sup> FCC 252	✓	✓
Bisomer <sup>®</sup> FCC L6200	✓	✓
Bisomer <sup>®</sup> FCC 94	✓	✓
Bisomer <sup>®</sup> FCC 172	✓	✓
Bisomer <sup>®</sup> FCC 93	✓	✓
Bisomer <sup>®</sup> FCC 92	✓	✓
Bisomer <sup>®</sup> FCC 174	✓	✓
Bisomer <sup>®</sup> FCA 51	✓	✓

# Notes

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Disclaimer:

All information and data, including the formulations and procedures discussed herein, are believed to be correct. However, this should not be accepted as a guarantee of their accuracy, and confirming tests should be run in your laboratory or plant. No statement should be construed as a recommendation for any use which would violate any patent rights. Sales of all products are pursuant to terms and conditions included in GEO Specialty Chemicals sales documents.

Nothing contained therein shall constitute a guarantee or warranty with respect to the products described or their use. Safety information regarding these products is contained in their Safety Data Sheets.

Users of these products are urged to review and use this information.

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Talk to us about your  
challenges and see how we  
can overcome them together.

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