





MAGRABAR®

ANTIFOAMS, DEFOAMERS AND RELEASE AGENTS
FOR FOOD PROCESSING



EUROPE
PORTFOLIO

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MÜNZING CREATING ADDITIVE VALUE

MÜNZING is a highly regarded, privately owned company for specialty additives with headquarters in Abstatt, Germany. We have a global presence in over 40 countries and are a technology driven organization with an extensive staff of highly experienced R&D and technical service personnel in Europe, America and Asia.

MÜNZING's mission is CREATING ADDITIVE VALUE by solving our customers' formulation problems in various industries and applications like wood coatings, industrial coatings, printing ink, industrial fluids, food processing and specialty sectors. We offer state of the art technical service testing to all customers regardless of company size. Based on our holistic range of products, MÜNZING's technical service provides our customers best solutions in technical aspects at great value.



About MAGRABAR®

For more than 190 years, MÜNZING has been helping its customers perfect their products by creating specialty additives that are precisely right for them. Headquartered in Abstatt, Germany, our manufacturing plants in North America and Germany have broad synthesis and formulation capabilities to best serve our global customer base.

MÜNZING's additives have achieved worldwide recognition for their performance, quality and technical innovation. If you have a specific challenge, we have the technical expertise and laboratory capabilities to craft a unique solution.

In 2013, MÜNZING acquired the company MAGRABAR, thus creating synergies between its strong technical background in antifoams and defoaming with MAGRABAR's products and experience in food processing. The name of the acquired company still exists today as the registered brand name of MÜNZING's product line for applications in food processing: MAGRABAR®.

Our MAGRABAR® antifoams, defoamers and release agents product line has been developed for a wide range of applications in the food industry. We offer both liquid and powder products in a range of materials and concentrations, including options suitable for organic, non-GMO and identity preserved processing. Our organic products are certified by QAI.

Food Safety

MÜNZING produces the MAGRABAR® line of products for the food industry at the MÜNZING North America manufacturing site located in Morton Grove, Illinois, USA.

With over 40 years' experience in producing for the food industry at this site, just outside Chicago, MÜNZING's high standards for quality and safety throughout all of our operations continue to be applied.

Morton Grove, IL is a Global Food Safety Initiative (GFSI)-certified facility, operating under food GMPs and

a HACCP-based food safety plan audited to the SQF Food Safety Code by NSF. This site is dedicated to producing products for the food industry and MAGRABAR® products are allergen free, free from animal-derived ingredients and certified Kosher Pareve and Halal.



Additive Value Since 1830

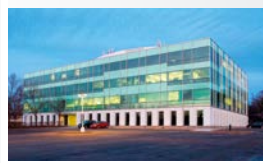
1830
Foundation of MÜNZING by Friedrich Michael Münzing, first producer of sulfuric acid in Germany



1947
Build up of a new factory; production of additives for leather and paper industry



2000
Opening of office and technical service center in Bloomfield North America



2005
Opening of office and technical service center in Shanghai, China



2009 – 2011
Expansion into Wax business through acquisition of new technologies



2013
Acquisition of Magrabar, Morton Grove (IL), USA, manufacturer of additives for the food industry



2014
Opening the new technology and administration center in Abstatt, Germany



2018
Acquisition of subsidiaries in Malaysia and Australia



2022
Plant expansion in Eastern Germany for production of additives and waxes



2023
Plant expansion with R&D enhancement in Malaysia



Product Overview: Processing Aids *

Product	Formulation Type	Percentage of Active	Physical Condition	Percentage of Renewable and Water Content	Processing Aid *	Food Additive **	Non-GMO	Silicone Content	Fruits, Vegetables & Starch	Protein & Collagen	Dairy	Eggs, Meat & Seafood	Beverages, Broths & Soups	Bakery	Fermentation	Powder Mixes	Jams, Jellies & Syrups	Sweeteners	Clean in Place & Waste Water Treatment
ANTIFOAMS & DEFOAMERS																			
MAGRABAR® PD-602	Vegetable Oil		Liquid					< 1%											
MAGRABAR® PD-3500	Vegetable Oil		Liquid					0%											
MAGRABAR® SPI-244	Vegetable Oil Emulsion		Liquid					0%											
MAGRABAR® 10-SN	Silicone Emulsion		Liquid					10%											
MAGRABAR® 20-SN	Silicone Emulsion		Liquid					20%											
MAGRABAR® 30-SN	Silicone Emulsion		Liquid					30%											
MAGRABAR® PD-1414	Polyoxyalkylene Glycol		Liquid					< 1%											
MAGRABAR® PD-4447	Polyoxyalkylene Glycol		Liquid					0%											
MAGRABAR® PD-4483	Polyoxyalkylene Glycol		Liquid					0%											
MAGRABAR® MD-3500	Vegetable Oil on Solid Support		Powder					0%											
MAGRABAR® MD-20-S FG	Silicone on Solid Support		Powder					20%											
MAGRABAR® IP-661	Vegetable Oil		Liquid					< 1%											
MAGRABAR® IP-3500	Vegetable Oil		Liquid					0%											
MAGRABAR® 544	Vegetable Oil Emulsion		Liquid					0%											
RELEASE AGENTS																			
MAGRABAR® SE-1435N FG	Silicone Emulsion		Liquid					35%											
MAGRABAR® SE-1435N FG RTU	Silicone Emulsion		Liquid					15%											

All MAGRABAR® products which are available in EMEA are Kosher and Halal certified, suitable for vegetarian and vegan diets, and gluten free.

* = All MAGRABAR® products which are available in EMEA may be appropriately used as a food processing aid in the EU, as defined in Regulation (EC) No. 1333/2008.

** = These products consist of ingredients with an E number or that are considered a food and as such may be appropriately used as a food additive in the EU, subject to certain use limitations; refer to the EU statement. Additional national regulations may apply.

... further MAGRABAR® products on Page 9-11 ▶

= Polyoxyalkylene Glycol
 = NSF H1 and 3H

= Silica Free
 = Silicone

= Vegetable Oil based

Product Overview: Processing Aids* and Food Additives**

Product	Formulation Type	Percentage of Active	Physical Condition	Percentage of Renewable and Water Content	Processing Aid *	Food Additive **	Organic	Non-GMO	Silicone Content	Fruits, Vegetables & Starch	Protein & Collagen	Dairy	Eggs, Meat & Seafood	Beverages, Broths & Soups	Fermentation	Powder Mixes	Jams, Jellies & Syrups	Sweeteners	
ANTIFOAMS & DEFOAMERS																			
MAGRABAR® J-405 IP	Mono- and Diglycerides (E471)		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® MD-4925	Vegetable Oil on Solid Support		Powder		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® PD-920	Mono- and Diglycerides (E471)		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 2000	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 2010	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
ANTIFOAMS & DEFOAMERS: MADE WITH ORGANIC CERTIFIED INGREDIENTS																			
MAGRABAR® 3001	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 3202	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 3303	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
ANTIFOAMS & DEFOAMERS: ORGANIC CERTIFIED US/EU RECIPROCITY (95%)																			
MAGRABAR® MD-3000	Vegetable Oil on Solid Support		Powder		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 4000	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 4010	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										
MAGRABAR® 4020	Vegetable Oil		Liquid		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	0%										

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= Food Grade Glycerides

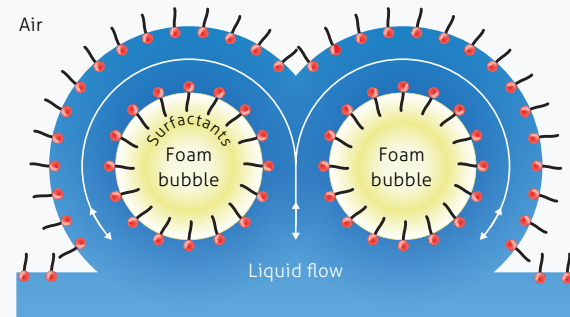
= Silica Free

= Vegetable Oil based

= Certified ingredients: Contains > 90% ingredients of agricultural origin. 100% of these agricultural ingredients are certified organic. These formulations have been verified by Quality Assurance International (QAI), are registered with the Washington State Department of Agriculture (WSDA) Organic Program and have been prepared without ingredients and methods which are excluded by Regulation (EC) No 834/2007 and Regulation (EC) No 889/2008.

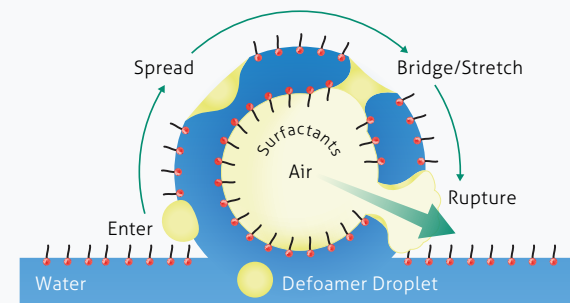
= Organic Certified US/EU Reciprocity (95%) by Quality Assurance International (QAI) US-ORG-050. Imported into the EU and distributed by MÜNZING CHEMIE GmbH, certified by Lacon (DE-ÖKO-003).

How Defoamers Work



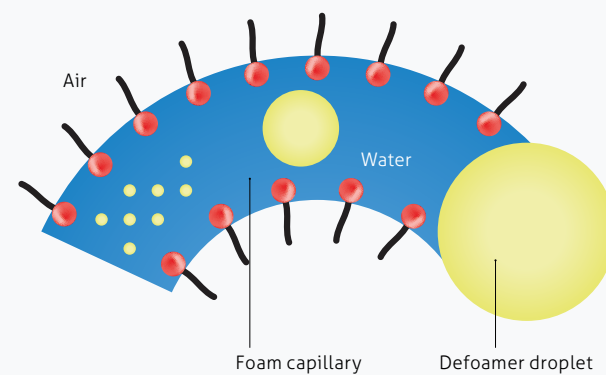
Foam stabilization mechanism

- » Foam is naturally unstable
- » Bubbles must rise to the surface to break
- » Drainage of the liquid surrounding the foam bubbles leads to rupture
- » Stability of foam comes from surfactants that hinder drainage



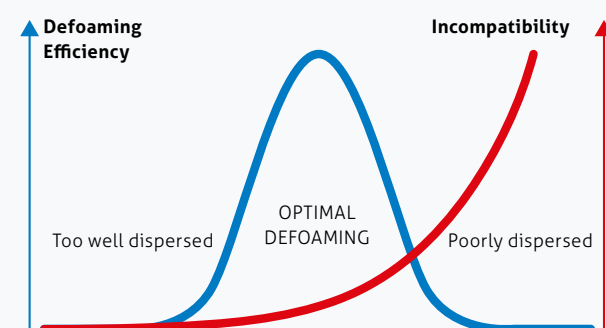
Defoamer mode of action

- » Defoamers exist as droplets in the liquid and act to destabilize foam by:
 - » Entering the foam bubble surface
 - » Spreading along that surface and thinning the liquid layer by forcing drainage
 - » Bridging the liquid layer to rupture the bubble
- » The defoaming process is governed by surface and interfacial tensions
- » The surface tension of the defoamer droplets must be lower than that of the liquid



Defoamer droplet size

- » The defoamer droplets need to be the right size
- » If the defoamer droplets are too small, there is an insufficient amount to produce an overall impact
- » Defoamer droplets that are too large will result in poor compatibility
- » More defoamer droplets of the optimal size will increase the rate of foam breakdown



MAGRABAR® Product Features

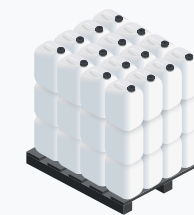
- » Exceptional initial and long-lasting defoaming
- » High performance across a range of industries and applications
- » Products derived from a range of materials and formulations to provide choice in determining best cost in use for each application
- » May be appropriately used as food processing aids in the EU. Some products may be appropriately used as food additives
- » Options for organic, non-GMO and identity preserved processing available

Packing units

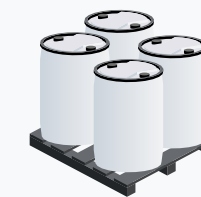
MAGRABAR® products are available in a range of packaging options to support our customers' needs. With a nominal capacity of 208l, plastic drums are the primary packaging for our liquid products. Product net weights range from 195 kg to 204 kg. Our largest liquid packaging is an Intermediate Bulk Container (IBC), nominal capacity 1040l, holding 998 kg. The smallest liquid packaging is an 18l square container with a handle. These pails hold 18 kg.

For powder products we offer two sizes of fiber drums, each with a plastic liner. The larger 208l drum holds from 91 kg to 136 kg, depending on the product. The smaller 49l fiber drum is filled to 18 kg for all powder products. All packaging includes tamper evident closures and numbered seals when appropriate.

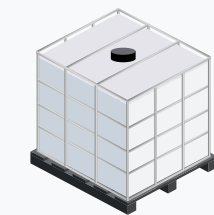
Packaging units for our liquid products



- » Pail: 18l
- » Weight: 18 kg net
- » Units per pallet: 48 pcs. (3 layers à 16 pcs.)



- » Plastic Drum: 208l
- » Weight: 195–204 kg net
- » Units per pallet: 4 pcs.

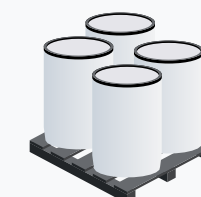


- » IBC: 1m³ / 1040l
- » Weight: 998 kg net
- » Units per pallet: 1 pcs.

Packaging units for our powder products



- » Fiber Drum small: 49l
- » Weight: 18 kg net
- » Units per pallet: 18 pcs. (2 layers à 9 pcs.)



- » Fiber Drum: 208l
- » Weight: 91–136 kg net
- » Units per pallet: 4 pcs.



Contact

MUNZING CHEMIE GmbH

Münzingstrasse 2
74232 Abstatt
GERMANY
Phone +49 7131 987-0
Fax +49 7131 987-125
E-Mail info@munzing.com

MUNZING CHEMIE Iberia S.A.U.

Carrer Temple, 15 1° derecha
ES08911 Badalona (Barcelona)
SPAIN
Phone +34 93 5722075
Fax +34 93 5722683
E-Mail iberia@munzing.com

MUNZING Malaysia SDN BHD

Lot 12 & 13, Lebuhr Perkasa,
Kawasan Perindustrian Bukit
Selambau
08010 Bukit Selambau, Kedah
MALAYSIA
Phone +604 42 33 388
E-Mail malaysia@munzing.com

MUNZING do Brasil

Rua Cyro Correira Pereira, 2.400
Cidade Industrial
81460-050 Curitiba/PR
BRAZIL
Phone +55 41 2104 3869
E-Mail contatobrasil@munzing.com

MUNZING

Micro Technologies GmbH

Dr.-Bergius-Strasse 16-24
06729 Elsteraue
GERMANY
Phone +49 3441 829 10-22
E-Mail ceretan@munzing.com

MUNZING North America

1455 Broad Street, 3rd floor
Bloomfield
NJ 07003-3003
USA
Phone +1 973 279-1306
Toll Free +1 800 524-0055
Fax +1 973 338-0420
E-Mail info@munzing.com

MUNZING Mumbai Pvt. Ltd.

502, Arcadia Building
NCPA Marg
Nariman Point
Mumbai 400021
INDIA
Phone +91 (22) 6856 2301
E-Mail india@munzing.com

MUNZING

International S.a.r.l.

23, rue Aldringen
L-1118 LUXEMBOURG
Phone +352 2627 1520
Fax +352 2627 1530
E-Mail benelux@munzing.com

MUNZING

Emulsions-Chemie GmbH

Dr.-Bergius-Strasse 16-24
06729 Elsteraue
GERMANY
Phone +49 3441 829 10-22
E-Mail ceretan@munzing.com

MUNZING Shanghai Co.Ltd.

Rm 1701B-1703A
No. 20, Lane 1228, Jiangchang Rd.
Shanghai 200072
P.R. CHINA
Phone +86 21 6149 1561
Fax +86 21 6149 1563
E-Mail info@munzing.cn

MUNZING Australia Pty. Ltd.

3 Warringah Close
2250 Somersby
NSW
AUSTRALIA
Phone +61 2 4340 7800
E-Mail australia@munzing.com

MUNZING Poland Sp. z o.o.

ul. Wojciecha 26
PL 40-474 Katowice
POLAND
Phone +48 32 209 76 78
Fax +48 32 209 32 22
E-Mail poland@munzing.com

Visit our website for more information

www.munzing.com

