

Silicones Simplified

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XIAMETER[®]
from **DOW CORNING**

XIAMETER[®] brand Silicones for Foam Control in the Food Processing Industry



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Foaming issues in food and beverage processing applications can negatively impact efficiency, productivity and cost. Silicone antifoaming agents from Dow Corning have been designed to safely and effectively reduce problems with foam under the numerous conditions encountered when processing foods and beverages.

And whether used as pure liquids or powders or in a compound or emulsion, silicone antifoams are more effective than organic antifoaming agents.

Dow Corning offers a range of foam-control agent types to meet the diverse needs of the food processing industry:

- Silicone fluids are used for controlling foam in nonaqueous systems.
- Compounds of finely powdered silica in silicone fluids are used for controlling foam in aqueous systems.
- Silicone emulsions are used for applications in which water is the predominant phase of the foam.
- Powdered silicones prevent foaming in dry products when liquids are added.

In Europe, all the products mentioned below can be used for processing aid applications but not as food additives. To get the food status of these antifoams, please refer to the Food Additive / Food Contact – Regulatory Information sheet, available by request to our customer service.

Subgroup	Application	Solution	Details
Drinks			
Alcoholic beverage	Vodka and wine production	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used in fermentation tanks to increase capacity, reducing foam in the resultant wastewater.
	Alcoholic drink production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during the mash processing step for alcoholic drink production and the cleaning of the processing equipment. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Beer production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used as process aids and cleaning aids during production of beer. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
Beverage	Natural juices and carbonated beverages	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during filling of containers, allowing containers to be filled to maximum weight. Typical addition level is 10 ppm.
	Soft drink production	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during mixing before bottling. Typically, antifoam is diluted prior to addition.
	Soft drink production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for keeping foam to a minimum level during filling of bottles, but their efficacy has not been tested.
	Tank cleaning	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during cleaning of tanks used for process water (e.g., at breweries). XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Fruit juice production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used as process aids and cleaning aids during production of fruit juices. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Sugar-free soft drink production	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during dilution of drinks prior to and during bottling stage, reducing spillage or loss of product.
	Tea	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during extraction process. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
Dry drink mix	Powdered protein sports supplement drink	XIAMETER® ACP-1920 Antifoam Compound	Has been used in powdered protein sports supplement drink that has a tendency to foam upon mixing with water. Powdered antifoam is required for incorporation into dry mix. The product is packed for the consumer as a dry powder that the end user mixes with water at the point of use.
	Powdered drinks	XIAMETER® ACP-1920 Antifoam Compound	Powdered antifoam can be added to powdered beverage products to prevent foaming.
	Powdered coffee	XIAMETER® ACP-1920 Antifoam Compound	Has been used during production of powdered coffee for ice creams.
Fermentation	Wheat fermentation during bioethanol production	XIAMETER® AFE-1520 Antifoam Emulsion	Has been used during wheat fermentation stage of bioethanol production. XIAMETER® AFE-1510 Antifoam Emulsion and XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but their efficacy has not been tested.
Savory			
Bread	Bread production	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used in dough during bread production. Typically added at 10 ppm.
	Cereal and bakery processing	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during cereal and bakery processing. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.

Subgroup	Application	Solution	Details
Brine	Pickling	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used in pickling brine to increase speed of pickle packing. Antifoam added at 10 ppm can increase packing speed from 10 to 160 jars per minute.
	Pickling	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for use in pickling brine to allow for higher-speed packing, but their efficacy has not been tested.
Meat, poultry and seafood	Rendering step of meat processing	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during the high-temperature rendering process. Typical addition level is 10-20 ppm.
	Gelatin production	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during the cooking of animal fat to produce gelatin. Effective in the harsh conditions experienced during this process. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Seafood processing	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for use during brine freezing of crab and lobster to control foam that results from high salt and protein that is leached from the seafood, thus extending the life of the brine solution before it needs to be replaced. However, their efficacy has not been tested.
	Poultry processing	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during rendering of poultry. During rendering of inedible poultry by-products, poultry fat is added to increase possible cooking temperatures. Antifoam is added to control the resulting foam and to reduce the fouling of equipment. Typically, 100 g of antifoam is added to 2,500 kg of poultry.
	Meat processing	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during meat processing. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Shrimp cleaning treatment	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during washing of shrimps. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Pasta	Spinach pasta ready meals	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion
Soup	Powdered soup	XIAMETER® ACP-1920 Antifoam Compound	Has been used in powdered soup.
	Powdered soup	XIAMETER® AFE-1520 Antifoam Emulsion	Has been used during production of powdered soup. XIAMETER® AFE-1510 Antifoam Emulsion and XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but their efficacy has not been tested.
Soybeans/tofu	Cooking of soybeans during soybean processing	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used in cookers during soybean processing, allowing full utilization of vessel.
	Soy sauce	DOW CORNING TORAY SM 5571 Emulsion	Has been used during processing of soy sauce.
	Soybean protein	DOW CORNING TORAY SM 5571 Emulsion	Has been used during processing of soybean protein.
	Powdered soy	XIAMETER® ACP-1920 Antifoam Compound	Has been used in powdered soy.

Subgroup	Application	Solution	Details
Starch/potatoes	Manufacture of potato flakes, chips and french fries	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used in a caustic bath during potato washing and peeling processes. The natural surfactants and starch present create foaming problems. Typically, antifoam is diluted with water (one part antifoam to three parts water) prior to addition. Diluted antifoam should be used within 8 hours.
	Manufacture of potato flakes, chips and french fries	XIAMETER® AFE-1510 Antifoam Emulsion	Has been used in protein-based foam caused during potato washing. Typical usage level is 1-10 ppm of XIAMETER® AFE-1510 Antifoam Emulsion as supplied. XIAMETER® AFE-1520 Antifoam Emulsion and XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but their efficacy has not been tested.
	Cornstarch processing	DOW CORNING TORAY SM 5571 Emulsion	Has been used during processing of cornstarch from sweet potatoes.
Vegetable oil	Sunflower oil	XIAMETER® ACP-1500 Antifoam Compound	Has been used in sunflower oil used for cooking and frying.
	Margarine production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used as process aids and cleaning aids during production of margarine. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Margarine production	XIAMETER® ACP-1920 Antifoam Compound	Has been used in margarine and canola oil plants.
Sweet/Savory			
Dairy products	Whey processing	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during whey production and processing. Whey is forced through an electric dialysis machine to extract minerals, and this typically is part of a continuous process. Addition of antifoam facilitates this continuous operation.
	Powdered egg	XIAMETER® ACP-1920 Antifoam Compound	Has been used in powdered eggs.
	Pudding manufacturing	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for use during production of puddings to prevent foam-over, but their efficacy has not been tested.
	Dairy and cheese products	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during production and bottle filling (e.g., in yogurt drinks). Effective over wide temperature range and under agitation. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
Flavors and spices	Vacuum packing of food products and seasonings	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during vacuum-packing process used to package foodstuffs and seasonings, reducing clogging in the vacuum line. Typical addition level is 1-10 ppm of antifoam.
	Processing of flavors and fragrances	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during processing of flavors and fragrances. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Powdered flavorings	XIAMETER® ACP-1920 Antifoam Compound	Has been used in powdered flavorings.
	Powdered seasonings	XIAMETER® ACP-1920 Antifoam Compound	Has been used in powdered seasonings.
	Liquid seasonings	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for use during blending of liquid seasonings, but their efficacy has not been tested. Typical addition level is 5 ppm of antifoam.
	Food colorant	DOW CORNING TORAY SM 5571 Emulsion	Has been used during manufacture of food colorant.

Subgroup	Application	Solution	Details
Fruits and vegetables	Processing of maraschino cherries	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for use during pumping of sugar solutions, but their efficacy has not been tested.
	Fruit processing	XIAMETER® ACP-1500 Antifoam Compound XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during production of pineapple purée. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Fruit processing	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used during cooking processes. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
	Vegetable water bath	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	The solutions listed are suitable for use in water bath used for vegetables, but their efficacy has not been tested. Processing of vegetables containing wheat gluten tends to generate foam. Antifoam is added to keep this foaming action to a minimum.
Sweet			
Confectionery	Sweets production	XIAMETER® ACP-1500 Antifoam Compound	Has been used during production of sweets.
	Toffee and soft ice production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used as process aids and cleaning aids during production of toffees and soft ices. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
Desserts	Manufacture of flavored dessert and pudding toppings	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during preparation of flavored pudding and dessert toppings, resulting in full utilization of manufacturing equipment and preventing spillage.
Jam	Production of jam (boiling stage)	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used during the boiling of fruit-and-sugar mixture, preventing spillage.
	Marmalade production	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion	Have been used as process aids and cleaning aids during production of marmalade. XIAMETER® AFE-1530 Antifoam Emulsion also may be suitable for this application, but its efficacy has not been tested.
Sugar	Manufacture of sugar from sugar beets	XIAMETER® AFE-0010 Antifoam Emulsion	Has been used in many processes during sugar production, such as washing, sugar extraction and sugar purification. Can be used undiluted or diluted with at least 4 parts of water. Antifoam typically is added just upstream from the raw juice, either in or after the carbonator.
	Maple syrup processing	XIAMETER® AFE-1510 Antifoam Emulsion XIAMETER® AFE-1520 Antifoam Emulsion XIAMETER® AFE-1530 Antifoam Emulsion	Solutions listed are suitable for use during bottling of maple syrup to speed up the bottling process, but their efficacy has not been tested. Typical addition level is 10 ppm of antifoam.
Animal			
Animal feed	Mixed fodder	XIAMETER® ACP-1500 Antifoam Compound	Has been used in mixed fodder.

Products listed under "Solution" have been shown to be beneficial in the application listed. Other products also may be effective in the listed applications but have not been tested. NOTE: A preservative to guard against microbial growth is included in most XIAMETER® antifoam emulsions. Dilution will substantially diminish the effectiveness of the preservative. If diluted material is to be stored for more than several days, additional preservative may be required. Please contact a XIAMETER® technical representative for more information.

Product	Geographic Availability	Product Type
XIAMETER® ACP-1500 Antifoam Compound	Asia, Americas and Europe	Compound
XIAMETER® AFE-0010 Antifoam Emulsion	Asia (Except Japan) and Americas (This product does not meet Japan's food grade requirements.)	Emulsion
XIAMETER® AFE-1530 Antifoam Emulsion	Global (This product does not meet food grade requirements in China or Japan.)	Emulsion
XIAMETER® AFE-1520 Antifoam Emulsion	Global (Except Japan) (This product does not meet Japan's food grade requirements.)	Emulsion
XIAMETER® AFE-1510 Antifoam Emulsion	Global (Except Japan) (This product does not meet Japan's food grade requirements.)	Emulsion
DOW CORNING TORAY SM 5571 Emulsion	Japan only	Emulsion
XIAMETER® ACP-1920 Antifoam Compound	Global (Except Japan) (This product does not meet Japan's food grade requirements.)	Powder

Antifoam agents that are added to food intentionally to have a technological effect in the final product fall under the definition of food additives.* As such, they are highly regulated in Europe. Regulation (EC) 1333/2008 of 16 December 2008 on food additives harmonizes the use of food additives in foods (Annex II amended by Regulation (EU) 1129/2011), and the use of food additives in food additives and food enzymes (Annex III amended by Regulation (EU) 1130/2011).

*Definition of food additives and of processing aids is provided in Article 3 of Regulation (EC) 1333/2008.

(continued)

Additional Information on Indirect Food Additives (US)

- Code of Federal Regulations 40 CFR concerning “Tolerances and Exemption from Tolerances for Pesticide Chemicals in or on Raw Agricultural Commodities” under Section 180.910: “Inert ingredients used pre- and post-harvest; exemptions from the requirement of a tolerance.”

Contact Us

Visit www.xiameter.com to learn more about the many product options available to you from the XIAMETER® brand.

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HANDLING PRECAUTIONS

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