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LUKOSAN

silicone defoaming agents

Lukosan S, E 201 and **P2** are aqueous emulsions of the active silicone component, further water-dilutable. They are designed to control unwanted foaming of many industrial processes and wastewater treatment plants, even under severe temperature and chemical conditions.

Lukosan M 07 is a non-emulsion silicone liquid defoamer used mainly in the manufacture and processing of paints, resins, oils (mainly non-aqueous systems).

Basic properties

- Defoaming effect appears quickly, almost instantaneously.
- Dosing is relatively low and does not affect production capacity.
- These agents are easy to disperse in water.
- These agents provide the defoaming of non-ionogenous, cationactive, and anionactive systems.
- They display chemical inertness to media that are being defoamed.
- Their effective substance is not volatile in the vacuum or when distilled in water steam.
- They are resistant against the oxidation effects of microorganisms.
- They are effective in neutral, acidic and weakly alkaline systems (in a strongly alkaline systems, they lose efficiency gradually due to decomposition of their active ingredient)

Application

- In order to achieve long-term, defoaming effects it is advised to use the defoaming agent continually.
- The defoaming effect is often reduced due to the coagulation of the defoaming agent, due to the adsorption of the silicone component on the surface of dispersed particle in a liquid, and due to a diminished amount of the defoaming agent in continual processes.
- Other negative factors include a higher temperature, intensity of mixing, gas supply, strongly alkaline systems, fermentation processes, etc. In such cases the more frequent refilling of the defoaming agent is necessary.

Dilution

- Emulsion silicone defoamers can be applied directly without dilution. However, due to the need for rapid and efficient dispersion, even for more accurate dosing, it is appropriate to dilute them to so-called working concentration.
  Working concentration: Defoamers are diluted with water or defoaming liquid in a ratio of 1: 3 to 1:10.
- It is recommended to process the diluted emulsions for so-called working concentration within 2 days and **mix properly before use**.

Technical parameters

Lukosan	P2	S	E 201	M 07
Characteristics	Aquaeous emulsion			Silicone paste
Silicone component content (wt. %)	20	30	20	100
Solid content (wt. %)	min. 25	min. 25	min. 20	-
Viscosity (mPa.s/20°C)	5 - 30	100 - 150	5 - 30	6.-10. 10^3
Density (kg/m^3)	980 - 1020	1000 - 1050	980 - 1020	1000
pH	4 - 6	5 - 7	3 - 6	max. 0,04
Defoaming value (g/l)	max. 1	max. 2	max. 2	-
Color	White	White	White	Translucent
Thermal stability (°C)	cold and hot water systems			150 (limit temperature 180)
Ionogenity	Non-ionogenous			-
Miscibility with water	Easy to disperse in both cold and warm water, they do not flocculate			Non-miscible

- Applications in hot or acidic solutions require the dilution of the defoaming agent with water in order to prevent the agent from possible coagulation.

- **Lukosan M 07** is applied either directly, or as a dispersion – when its defoaming effects should be accelerated – in a suitable carrying medium.

Use and Dosage

LUKOSAN P2

The formula of the Lukosan P2 defoaming agent finds its main applications mainly as an auxiliary agent in the food-processing, fermentation, and pharmaceutical industries.

- Auxiliary agent in: processing of starch; thickening and dehydrating of foodstuffs' production of jam, jelly, fruit and vegetable juices, syrup, and soft drinks; esterification of oils; production of instant foodstuffs, sauces, and soup spices; fermentation processes; sugar refining; production of antibiotics.

The guaranteed **effective dose** of defoamer (undiluted concentrate) is **1 g/l** of foaming liquid. In most cases, a **sufficient amount** of defoamer (undiluted concentrate) is **below 0.5 g/l.**

LUKOSAN S and E 201

- Both types of defoaming agents are designed to regulate undesirable foaming of water systems in a broad range of technological processes and waste management.
- Chemical processes: production of adhesives, production and processing of detergents, production of dyes, attrition of pigments, production of ink, soap, synthetic rubber, and processing of latex emulsions.
- Processing of oils, asphalts, and tars; production of bitumen emulsions, washing of gases, impregnation processes.
- The paper, textile, and tanning industries: Production, gluing, and washing of paper; coating of paper; processing of groundwood pulp, textile and textile fibers; dying of textile and textile yarns; final treatment of leather; application of later on carpets.
- Wastewater treatment (surfactant foams are removed much better and using less defoamer than biological foams.
- Various: Wastewater treatment, bottle washing, extraction, detergent solutions, and degreasing baths for the surface treatment of metals.

The guaranteed **effective dose** of defoamer (undiluted concentrate) is **2 g/l** of foaming liquid. In most cases, a **sufficient amount** of defoamer (undiluted concentrate) is **below 1 g/l.**

Recommendation for Lukosan P2, S and E 201:
Dosage should be tested on a case-by-case basis. The effective dose depends greatly on the properties of the foaming system, on the intensity of mixing, gas supply and other factors. Further, in many cases, it is not necessary to have a completely foam-free level. The concentration of ***1 g/l is a recommended*** *approximate dose that can be changed (depending on the acceptable amount of foam).*

LUKOSAN M 07

This agent is used to defoam systems containing substances with polar groups (such as glycol or glycerin), during the processing of resins and oils; in distillation, fermentation processes, etc.

A minimum effective dose must be tested. However, even a dosing ratio of $1:10^5$ (10 ppm) is highly efficient.

- This agent is applied either directly, or as a dispersion – when its defoaming effects should be accelerated – in a suitable carrying medium (hydrocarbon solvents such as benzine, xylene, or defoamed medium itself, if the defoamer is well dispersed therein).
- Mixture is then poured in a liquid or sprayed on a frothy liquid level. In some cases, the defoaming agent is applied on the walls of containers (closer to their upper edge) and its level drops immediately after foam recesses.
- Unlike the emulsion types of defoaming agents, this product is designed mainly for the defoaming of non-aqueous systems such as production of adhesives, dyes, resins, asphalts, oils, gas washing, etc. In certain cases this product is also used in an aqueous environment in which it is not advised to supply a defoamed liquid with emulsifiers represented in emulsion defoaming agents (fermentation processes).

Safety and Hygienen

The silicone defoamers **Lukosan** are not classified like dangerous according to valid legislation. They are physiologically safe and do not irritate skin.

Packaging and Storage

LUKOSAN S, E 201 and **P2** silicone defoaming agents should be stored in their original sealed packaging kept in covered storerooms at temperatures ranging from +5 up to +30 °C. They are supplied in 25 kg cans. Their storage life is 6 months. Protect from freezing!
LUKOSAN M 07 should be stored in its original sealed packaging in a dry and cool place. It is supplied in 1 kg or 20 kg tins. Its minimum storage life is 24 months.