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# At RICKMAN

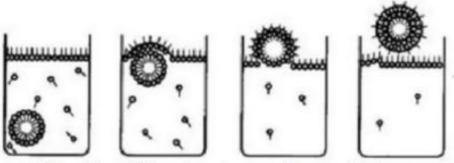
We create defoamer chemistry for a better and more sustainable future.



### **Defoamers and Antifoams**

#### Classifications of foam

- According to the life of the foam, it can be divided into "short foam" with a life span of a few seconds and "durable foam" that can maintain a few days without breaking under the condition of no interference;
- According to the balance between the force of foam generation and foam breaking, it can be divided into "unstable foam" that is constantly approaching the equilibrium state and "stable foam" that is hindered in the equilibrium process;
- According to the aggregation, it can be divided into "bubble dispersion system" with more liquid and less gas and "foam" with more gas and less liquid.



The rise of foaming in a surface activator

Generation Mechanism and Stability of Foam

Analysis of factors affecting the stability of foam:

(1)Low surface tension.

The lower the surface tension, the easier it is to form foam;

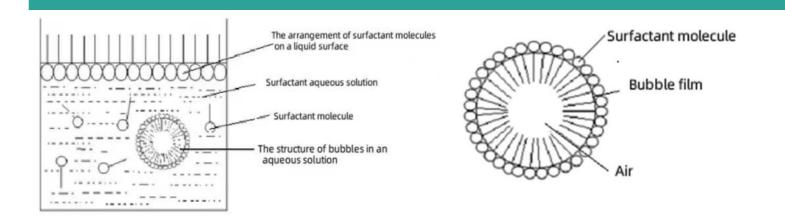
(2) Concentration of surfactants.

The higher concentration of surfactants, the more it accumulates on the surface of the foam, and the stronger the membrane;

(3) Size of foam itself.

According to the formula T=K/D<sup>2</sup>, T is the life of foam; D is the average diameter of foam; K is the correction coefficient.

As can be seen from the formula, the smaller the foam, the longer the life of the foam, the higher the stability.



#### What is foam?

Bubbles and foams are generated by surface action.

Due to the action of surface tension.

The membrane contracts into a ball, forming a bubble. Because of the lifting force, bubbles rise to the liquid surface. When a large amount of bubbles gather on the surface, a foam layer is formed.

# Water

## treatment

**ANTIFOAM SOLUTIONS** FOR WATER TREATMENT



In water and wastewater treatment industries, the fluids contain bacteria, chemicals, and other compounds hazardous to human health.

The causes of foam in different water treatment plants are varied. Foam can be caused by biological activity, mechanical action, chemical contamination, surfactants or some polymer.

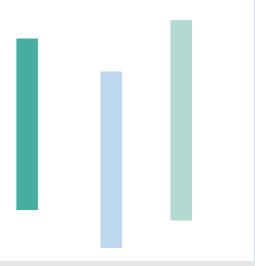
Regardless of the cause, excessive foams are unacceptable and often interfere with operations.

#### Rickman manufacture defoamers and antifoams for following water treatments:

- Sea water desalination
- Industrial wastewater treatment
- Industrial circulation water treatment Landfill leachate
- Municipal sewage treatment

- Biological water treatment
- Reverse Osmosis water treatment
- Membrane system





RK-F0080 is a fatty alcohol defoamer with excellent air removal's performance and used in paper mill, sea water desalination and other water treatment.

**RK-30S** is 30% active silicone antifoaming agent. It's highly efficiently antifoaming in textile printing, construction, industrial effluent treatment and emulsion polymerization.

RK-0036 is a high antifoaming defoamer with 30% content. Low dosage can achieve optimized result in textile printing, general industrial, cooling water treatment, PCB cleaning, adhesive, glove production etc.

**RK-400P** is a 100% active silicone free antifoam with great defoaming and foam control performance in wastewater treatment and desulfurization etc.

**RK-500P** is a water based antifoam, specially used in industrial effluent treatment and reverse osmosis RO membrane, landfill leachate.

**RK-700P** is a silicone free based defoamer with breaking foam quickly in many industries.

**RK-800P** is designed by special polyether material to used in concrete, gypsum, asbestos tile, concrete admixture additives and reverse osmosis RO membrane and landfill leachate etc.

**RK-8636** is a innovative silicone defoamer, which is ready to used in widely applications, such as textile, water treatment, fermentation, PCB cleaning.

**RK-300P** is a silicone defoamer liquid and used in pulp and paper, industrial water treatment.

RK-833 is a non silicone defoamer emulsion used in processes that can not use silicone product, such as RO membrane system.