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# **At RICKMAN**

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

# RICKMAN

Rickman was found in 2013, engaged in production, research and development, sales and service of defoamer. The comprehensive annual capacity can reach 30,000 tons. These products are widely used in pulp and paper, textile, industrial water treatment, paint and ink, oil and gas, agriculture, food, fermentation, industrial cleaning, metal processing and other fields.



At RICKMAN, we create defoamer chemistry for a better and more sustainable future. We believe that our mission is to work closely with our customers, providing them with antifoaming agent solutions enable them to deliver their potential.

**01**

## **Our Purpose**

To solve foam problem and improve efficiency through antifoam solutions.

**02**

## **Our Vision**

To be the global leader in antifoam innovation and build a safer, healthier, more sustainable world.

**03**

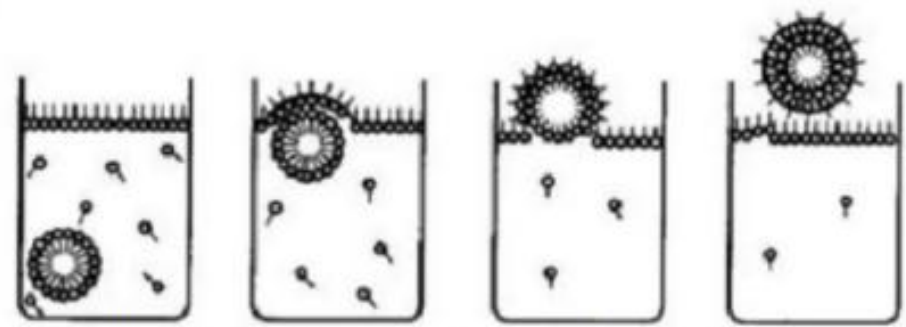
## **Mission**

We strive to build a better and more sustainable world with our partners by solving chemistry problems with the right technology, experience and team.

# 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 ;

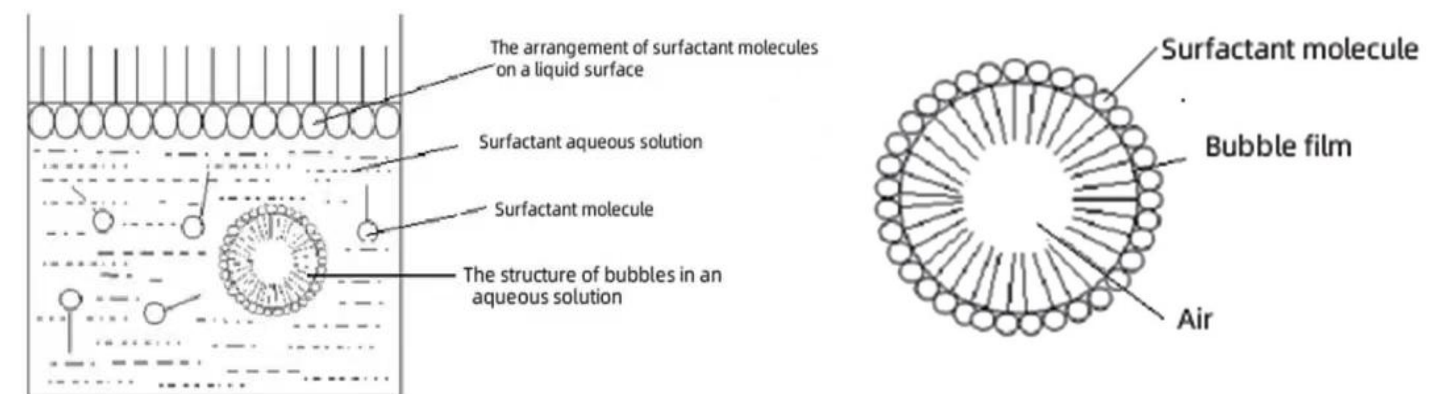
(2) Concentration of surfactants.

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  $T=K/D^2$ , 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?

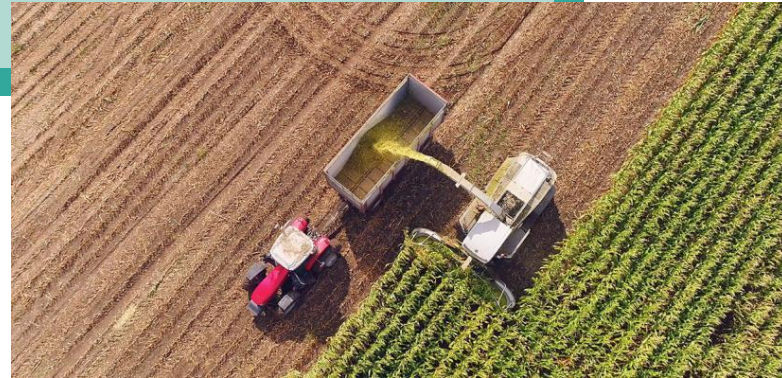
Bubbles and foams are generated by surface action.

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.



# RICKMAN DEFOAMER SOLUTIONS FOR AGRICULTURE



In agriculture, fertilizers and pesticides, etc are the basic necessary to feed the every growing population. In the process of pesticides and fertilizers based on the phosphoric acid, sulphur bentonite, diammonium phosphate , because of temperature, stirring speed and equipment etc conditions, the air is contributed during production. Those unwanted foams can affect the productive capacity and products' quality.

That focus has led Rickman to develop an extensive ranges defoamers for agriculture.

Key futures and typical benefits:

- Fast knock down the foams for a broad range of formulation
- Long -lasting foam control
- Excellent dispersibility and compatibility
- Increased capacity
- Widely applications



**RK-35T** is a silicone free defoamer made by hydroxyl compound. It's widely used in fertilizer, agriculture.

**RK-400s** is a highly efficient defoamer for mining, oil and gas, industrial cleaning, and pesticide etc.

**RK-63B** is a silicone compound defoamer as internal additive, and works in household detergent, pesticide, PCB cleaning, electronic cleaning and metal surface cleaning.

**RK-30N** is an effective defoamer emulsion with long-term antifoaming performance in textile, oil field, detergent, internal additive of pesticide, and construction.

**RK-900N** is a high concentrated defoamer emulsion with productivity, and quality, including excellent break foam quickly.

