Xiamen Rickman Chemical Technology Co., Ltd

Tel: +86 18750669524

Fax: 0595-82003557

Website: www.rickmanchemical.com

Email: info@rickmanchemical.com

Head office

Add: 1267-8 Qianpu South Road, Siming Distriet, Xiamen City Fujian China

Quanzhou Branch office

Add: Hengdali Building, Quanan North Road,Quanzhou , China

Factory

Add: Qitian Industrial Zone, Fujian, China

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 andservice of defoamer. The comprehensive annual capacity can reach 30,000 tons. These productsare 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

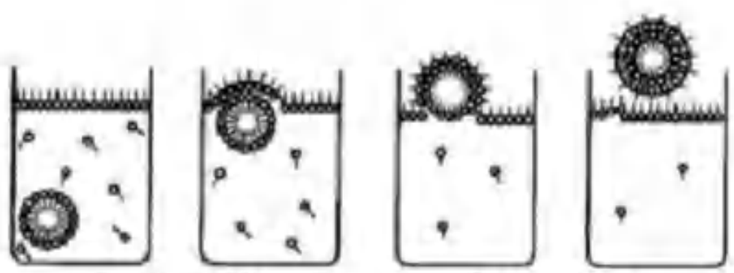
Mission

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 ;

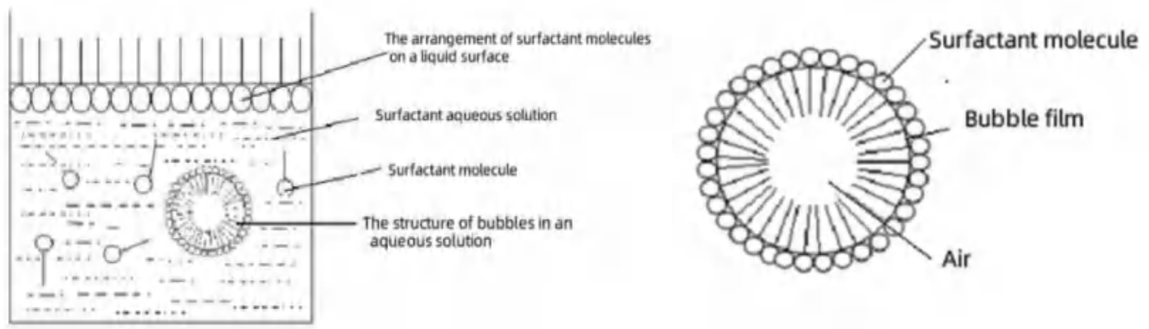
(2) Concentration of surfactants.

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.

ANTIFOAM SOLUTION FOR PULP & PAPER

Foam Is a Problem –
Foam Control Is the Solution
Excess foam can create a variety of challenges, all detrimental to pulp processing, paper making white water, sizing&coating: increased maintenance costs, lost capacity, reduced efficiency and longer processing time.

The solution: Defoamer products from Rickman

Pulp Washing Black Liquid:
Pulp preparation or pulp washing is one of the main process which forms foaming in paper making industry.Anionic surfactants are formed by chemical reaction between alkali and wood or Straw grass during cooking process.

Recommendation: Silicone defoamer or non-silicone defoamer are usually used for pulp preparation. Silicone and non-silicone defoamer has it's own focus according to different raw materials. Silicone defoamer series are more efficient in pulp washing with hard wood and soft wood as raw materials. Silicone based defoamer series are usually continuously added to the filtered black liquor during pulp washing process.
Defoamer dosage is 0.1～0.5kg per dry pulp ton.
Generally, dosage of non-silicone defoamer is usually higher than that of silicone defoamer series, while it won't cause silica residual during alkali recovery of black liquor, which is the advantage of non-silicone defoamer.

Non-silicone defoamer is more suitable for straw pulp and it has similar usage as that of silicone based. It's suggested that non-silicone defoamer should not be diluted to use.

RK-50P is a polyether antifoaming agent and good for eliminating bubbles in paper machines, paper sizing and coating and landfill leachate etc.

Rk-0010 is 100% silicone free antifoaming agent with eliminating air performance which is used in paper making, water treatment and powder plant desulfurization.

RK-10S is a stable silicone antifoam emulsion with resistance to the extremely conditions in pulp washing black liquor, waste water treatment etc.

RK-20S as a formulated defoamer, is good for all kinds of pulping , effluent treatment, and oil and gas etc

RK-5DS is a polydimethylsiloxane antifoam used to eliminating foam problem in pulp and paper, textile, industrial cleaning, waste water treatment.

RK-8455S is high concentrated silicone defoamer, which acts excellent defoaming performance in pulp mill and water treatment.

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-F0090 is a silicone free foam control agent, and used in paper making white water wet end, fermentation,and water treatment, etc.

Paper Sizing:
Because agent itself is also a surfactant, which is mixed with air during operation. Paper Sizing defoamer is usually added at the sizing press out the section.
Recommendation: In internal sizing& surface sizing, we can consider the fatty alcohol and polyether defoamer.

Paper Coating:
Paper coating defoamer is usually added during the formulation of coatings. Styrene-butadiene latex is the latex to make coated art paper coating and can easily cause foam when dispersing pigments or fillers at high speed.

Recommendation: Mineral oil based Defoamer dosage is 0.1～0.5％ of the total amount of coatings.

For coating defoamer, compatibility of defoamer and wetting agent or dispersing agent should be considered. Otherwise it can easily cause shrinkage or fish eyes and affect the appearance of paper.

Therefore, lab test is necessary to ensure that defoamer won't have negative performance on finished paper.

Paper Machine:
Paper making process is an important process for paper forming. A lot of additives, such as sizing agent, retention agent, filter aid,wet strength agent,dry strength agent etc are to be used to form paper with certain performance. These additives are added in different dosing points. And it's easy to form foaming during white water circulation in closed system.
Silicone defoamer, fatty alcohol defoamer, mineral oil defoamer and polyether defoamer are used on site. Fatty alcohol defoamer is widely used in applications and Like, production processes of cardboard paper, newsprint paper,paper board,corrugated paper. Generally, silicone defoamer has relatively lower performance and easily causes silicone spots in paper sheets and form fourdrinier pit.

Recommendation:Fatty alcohol defoamer or modified fatty alcohol defoamer.
Paper machine defoamer is usually added in the points with a lot foam, for instance underwire white water chest or white water tank. Defoamer will be added continuously in several dosing points to give full play of defoamer performance.It will not only achieve good performance but also save cost. For defoamer with good dispersion, it can be used by pre-dilution; For defoamer with common dispersion, it's suggested that defoamer can be used without dilution or dilution on line near dosing points in order to ensure the amount and concentration of defoamer particles.

Defoamer is a kind of functional chemical instead of general chemical.And it will be chosen based on mill trial specific to certain paper product.

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

RK-203 is a non silicone defoaming agent and used in textile industry, water based paint and paper coating.