



SIXIN® Defoamers for Oil/Gas Separation and Cementing

For more than 27 years, SIXIN has helped its customers by perfecting their products and processes through the formulation of defoamers and antifoams that meet their specific needs. SIXIN was founded in 1992 by Dr. William Tsao in the city of Nanjing, China, with a focus on research and development, production and sales of defoamers and antifoams. In order to gain a global reach, the International Sales Offices was opened in Oregon in the United States.

SIXIN has a worldwide presence with more than 2000 clients around the world (China, Europe, Africa, Southeast Asia, Australia, India, Russia, the Middle East and the Americas). Within its staff, it has more than 30 professionals of the Chemical Sciences and Engineering, collaborating with universities with the aim of providing the latest technology in defoamers and antifoams.

If your company has a specific challenge for foam destruction, we have the experience and laboratory capabilities to formulate a unique solution. SIXIN seeks to provide you with a professional, focused and specific service, assuring you that our products offer optimal performance and competitive prices.

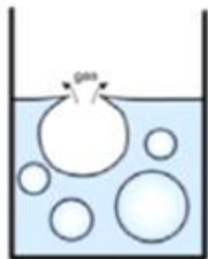


Content	Page
Foam generation	1
Oil/gas separation foam control	2
SIXIN products	3

Foam Generation

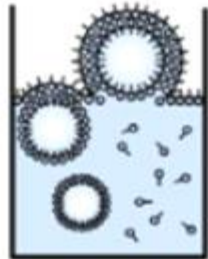
Pure liquid vs. foam

- A pure liquid does not foam.
- The foam is a dispersion of gas bubbles in a continuous matrix (liquid or solid) stabilized by the action of a surfactant or by the viscosity of the matrix.
- The foam forms structures of defined geometries by unions that repeat their arrangement and morphology in different directions and sizes. These joints are contours of thin films of surfactant through which the continuous matrix circulates.



PURE LIQUID

A pure liquid does not foam.

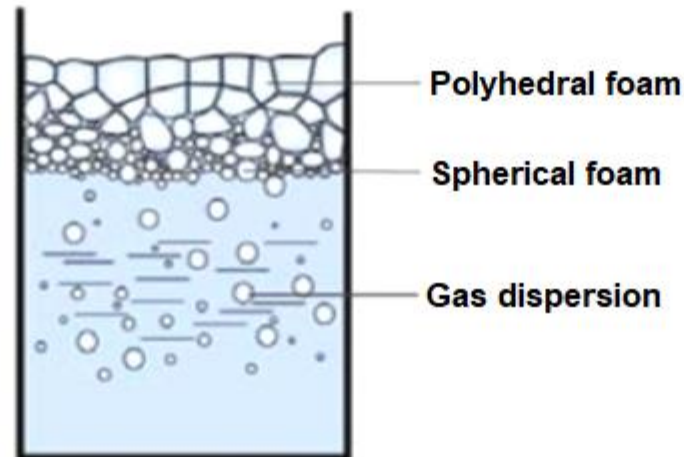


LIQUID WITH SURFACTANT

Stable foam.

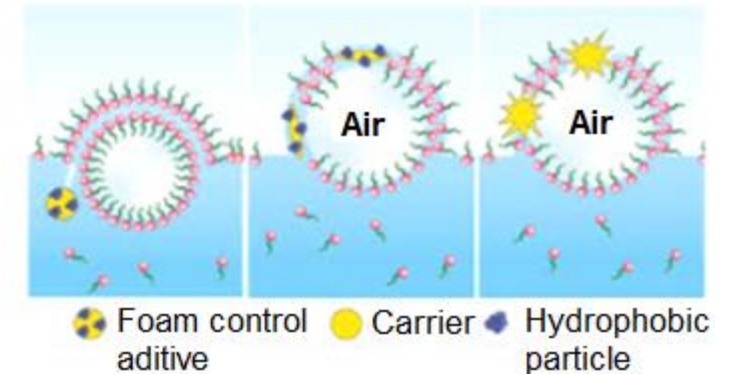
Foam stabilization mechanisms

- The bubbles must migrate to the surface to break.
- The drainage of the continuous matrix surrounding the foam bubbles leads to their rupture.
- Foam stability comes from a surfactant or surfactant films that prevent drainage, causing foam stabilization. It is at this point where the addition of foam control additives is required.



Defoamers' action

- Defoamers destabilize the foam by the following means:
 - They enter the surface of the foam bubble.
 - They extend along this surface and they thin the liquid film forcing the drainage of the matrix.
 - And finally, they join the liquid layers to break the bubble.
- This process is governed by surface tension.
- The surface tension of the defoamer drops should be lower than that of the continuous matrix.



Oil/Gas separation foam control

Foam can cause major problems in the production and refining of oil, specially during:

- Wellhead
- Refining and processing
- Shipment
- Drilling mud
- Cementation

Drilling Mud

These vital fluids are extremely surface active and prone to foam. Mechanical degassing equipment is commonly used along with defoamer.

Storage tank foaming

It can be prevented in the event of steam line rupture, water-bottom turnover or the inadvertent injection of water.

Gas-Oil Separation

Certain crudes tend to foam while undergoing depressurization to release entrapped gas. This tendency can severely limit output and is specially severe on offshore rigs where foaming problems occur. Antifoam can help maintain maximum separator capacity and well output.



SIXIN defoamers

Defoamers for drilling muds

- A chemical additive used to prevent the formation of foam during the preparation of a treatment fluid or slurries at surface.
- Excess foam created during the mixing process may cause handling and pumping difficulties and may interfere with the performance or quality control of the mixed fluid. Antifoam agents may also be used to break foams returned from the wellbore, following treatment, in preparation for disposal of the fluids.
- Recommendation: CS-1817.

Defoamers for coking and oil/gas separation

- Coking is a process in which heavy cracked oil is heated to undergo deep cracking and condensation reactions to obtain gas, gasoline, diesel, wax oil and coke.
- Silicone base products diluted with solvents and aromatic compounds are generally used as defoaming agents.
- Recommendations: X-101AT & X-102A.

Defoamers for well cementation

- Cementing is vital to protect and support the casing and deliver the necessary zonal isolation for the life of the well.
- The properties of cement such as viscosity, thickening time, and strength are of prime consideration when engineering for the highest probability of a successful primary cementing operation.
- Recommendations: G-20 Series & 995020SG.



SIXIN defoamers benefits



Extraction systems are prone to foaming problems and a well selected defoamer can enhance production and reduce contamination significantly for the refinery.

Our defoamers meet the criteria of cost efficiency, easy of handling, specificity of action, absence of adverse effect on refining and are environmentally safe.

Backed up by our research in surface active materials, well targeted products are available for these applications individually.



SIXIN defoamers the oil/gas industries

	CS-1817	G-20 Series	995018S	X-101AT	X-102A
Chemistry	Fatty alcohol polyether	Fatty alcohol polyether	Mineral oil and polyether	PDMS	PDMS
Appearance	Colorless transparent liquid	White to off-white powder	White powder	Colorless transparent liquid	Colorless transparent liquid
Viscosity (25 °C, mPa·s)	300-600	NA	NA	1-200	1-200

Key features of SIXIN defoamers for oil/gas industries:

- Cost efficiency.
- Specificity of action.
- Persistent foam control.
- Contact your SIXIN sales representative for technical data sheets and samples for evaluation.