

Global Oilfield Solutions

Performance Chemicals
for Cementing



 **BASF**
We create chemistry

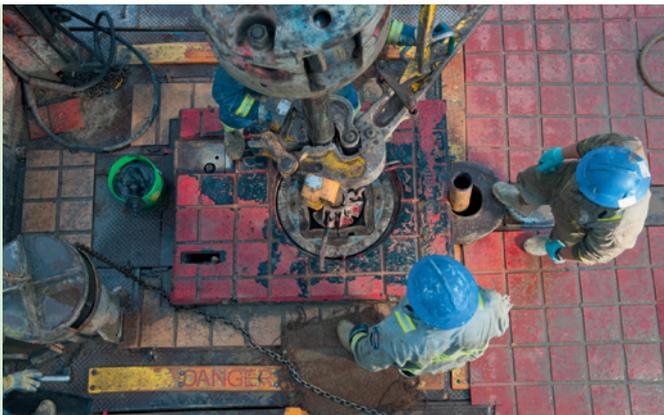
High Performance Chemicals for Cementing

Imagine enhancing your engineering services with solutions from the world's leading chemical company. When it comes to cementing, BASF offers one of the most comprehensive chemical portfolios in the industry.

Our proven strengths are innovative, sustainable solutions with consistent product quality. Best-in-class well site operations are essential for maximizing the recovery of oil and gas reserves while minimizing the impact on the environment. Specialty chemicals that impart unique capabilities and functionality are an integral part of this goal.

BASF provides a broad range of high-quality chemicals to help service companies meet their technical challenges in cementing. By constantly improving the quality and reliability of our chemical solutions, we help service companies meet the industry's overall drive for greater efficiency and productivity.

Discover your possibilities with BASF.





BASF's state-of-the-art dispersants and fluid loss additives ensure a reliable cementing job under difficult conditions.

| Cementing | Function | Chemistry | Recommended products |
|------------------|---|--|-------------------------------|
| | Dispersants | Polycarboxylate based superplasticizers | Liquiment® 1641F and 5581F |
| | | Polycondensate based dispersants | Liquiment® F-10X |
| | | The standard dispersant for oil well cementing | Liquiment® K3F |
| | | Green dispersant | Liquiment® Bio |
| | Fluid loss control additives | Tailored blends for a variety of base applications | Polytrol® FL 24, FL 29, FL 32 |
| | | Fully synthetic polymers for demanding conditions | Polytrol® FL 34, FL 45, FL 56 |
| | Gas blocking additives | Styrene-butadiene latex | Paragas® |
| Polyethylenimine | | Basoblock ND 614, LD 150, D 623 | |
| Retarders | Fully synthetic retarder for demanding conditions | CemR-10, CemR-80 | |
| Defoamers | Fatty alcohol alkoxyate | Basopur DF 5, DF 9010 F | |
| Spacer Fluids | Surfactant blend | DisPlus 39 | |

Please note that not all product versions and types may be available in all regions.

Cementing Portfolio

High Performance Chemicals for Well Cementing

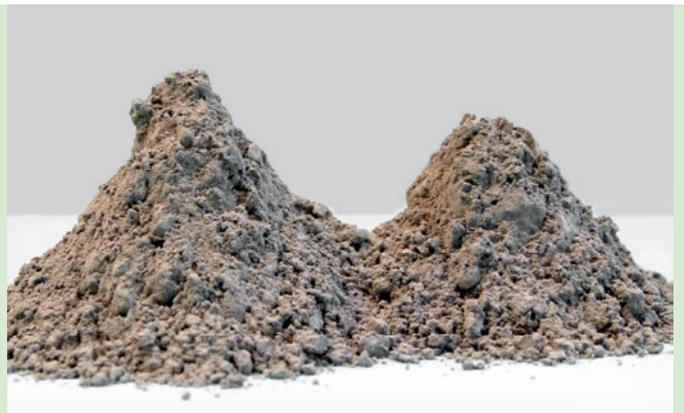
We offer a broad portfolio of specialty chemicals designed to support and enhance the cementing process.

BASF's state-of-the-art cement dispersants improve the slurry rheology such that long range pumping is greatly improved and at the same time water-reduced cement slurries are possible. Fluid loss additives, which are stable against high temperatures and concentrated salt solutions, ensure a reliable cementing job under difficult conditions. BASF's retarders can be synergistically combined with our highly efficient dispersants allowing for time critical cementing jobs under high temperature conditions. Our anti-gas migration additives prevent gas from channelling through the hardening cement and ensure a reliable cementing job. The BASF portfolio is completed by defoamers with outstanding foam control properties.

About Oil Well Cementing

When a section of an oil or gas well has been drilled, metal tubes or casings are introduced and fixed with cement in order to stabilize the well. Also, this cement layer separates different geological formations from each other, which is necessary to prevent the exchange of gas or fluids between the different zones. In contrast to common construction applications, oil well cementing faces additional challenges. Prior to setting, the cement slurry needs to be pumped down through the casing to the bottom of the hole under high temperature and pressure conditions in order to squeeze it upwards in between the casing and formation wall.

Enhance the performance of your cement with BASF's state-of-the-art additives.





How BASF Oilfield Solutions can contribute to a successful job

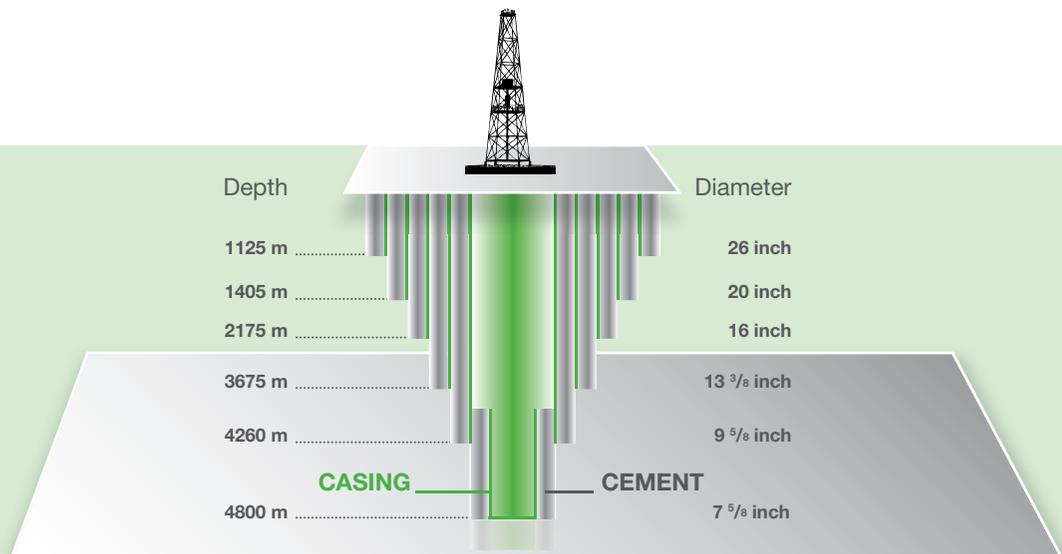
The **Liquiment®** product range includes our state-of-the-art cement slurry disperant for use in a wide range of oil field applications. While lowering the slurry viscosity, rheology is greatly improved for long range pumping. Furthermore, cement slurries with reduced water-to-cement ratios are possible, which results in a high compressive strength for the hardened cement.

Our fluid loss polymers reduce the water loss from the slurry to the formation, which otherwise would lead to undesired effects such as high viscosity. The **Polytrol® FL** line of products offers chemicals for different conditions and requirements such as high temperature stability and salt tolerance up to saturation.

Other chemistries, which also support fluid loss control, are **Basoblock™** styrene-butadiene latices as well as **Parags®** which is a selected polyethylenimine. These products are known to provide gas migration control and, in the case of **Basoblock™**, add elasticity to the cement.

Basopur™ DF 5 and **DF 9010 F** provide outstanding foam control. These products are well proven foam suppressants for a variety of oilfield applications such as drilling, cementing and production operations. Furthermore, to complete the portfolio, **CemR-10** and **CemR-80** are fully synthetic cement retarders for high temperature wells where time is critical. The products interact well with other additives.

Several casings are cemented into the borehole.



**North America –
Global Headquarters**

BASF Corporation

Global Oilfield Solutions
3120 Hayes Road
Suite 200
Houston, TX 77082
US
Phone: +1 800 7941019
Fax: +1 877 2451806

Europe

BASF SE

Global Oilfield Solutions
G-EVG/GM – J542 S
67056 Ludwigshafen
Germany
Phone: +49 621 60-0

Asia

BASF South East Asia Pte. Ltd.

Global Oilfield Solutions
33 Tuas Avenue 11,
Singapore 639090
Singapore
Phone: +65 6860 7051

South America

BASF S.A.

Global Oilfield Solutions
Avenida das Nações Unidas,
14.171 Morumbi
04794-000 São Paulo
Brazil
Phone: +55 11 2039-3482
Fax: +55 11 2039-2786

Middle East/North Africa

BASF Middle East LLC

Global Oilfield Solutions
P. O. Box 2996
Dubai
United Arab Emirates
Phone: +971 4 8072222
Fax: +971 4 8072149

For further information:

oilfieldsolutions@basf.com
www.oilfield-solutions.basf.com

 **BASF**
We create chemistry

The descriptions, designs, data and information contained herein are presented in good faith, and are based on BASF's current knowledge and experience. They are provided for guidance only, and do not constitute the agreed contractual quality of the product or a part of BASF's terms and conditions of sale. Because many factors may affect processing or application/use of the product, BASF recommends that the reader carry out its own investigations and tests to determine the suitability of a product for its particular purpose prior to use. It is the responsibility of the recipient of product to ensure that any proprietary rights and existing laws and legislation are observed. No warranties of any kind, either express or implied, including, but not limited to, warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth herein, or that the products, descriptions, designs, data or information may be used without infringing the intellectual property rights of others. Any descriptions, designs, data and information given in this publication may change without prior information. The descriptions, designs, data, and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability for the descriptions, designs, data or information given or results obtained, all such being given and accepted at the reader's risk. (02/2018)

® = registered trademark of BASF SE