



# Specialty Carbon Blacks and Fumed Silicas **for Oil and Gas Applications**



# Introduction

Cabot Corporation, a leading specialty chemicals and performance materials company, has a long history of delivering solutions for Oil and Gas applications. We deliver solutions for drilling and completion operations, subsea pipeline and industrial insulation, purification and more. Cabot's high-density cesium formate brine forms unique non-damaging drilling, completion, workover and well suspension fluids, providing safety, health and cost benefits; our innovative aerogel products provide superior thermal performance for industrial insulation applications; and our activated carbons are used for purification and adsorption benefits.





Additionally, our broad portfolio of performance chemicals comprised of specialty carbon black and fumed silica products, provide key functionalities to meet the needs of the upstream Oil and Gas industry.

## Applications of Specialty Carbon Black and Fumed Silica in Oil and Gas

Cabot's core expertise in designing the structure and surface chemistry of our particles makes our carbon black and fumed silica products the performance additives of choice for a wide range of applications cutting across industries. In the Oil and Gas industry, our carbon black and fumed silica products can improve the performance of oilfield additives and fluids used in drilling and hydraulic fracturing operations.

### Improving oilfield additives using Cabot's products






Application	Application description	Performance value for Oil & Gas customers
<b>Hydrophobicity control (or surface energy control)</b>	Change wetting properties of a surface using suitable hydrophobic or hydrophilic particles in order to control interaction of the surface with surrounding media	Particle additives (like <b>Proppant, Guar Gum</b> ) that are more compatible with <b>Frac Fluid</b> or hydrocarbons 
<b>Moisture control</b>	Minimize moisture absorbed by a bulk powder material by selectively absorbing moisture or creating a barrier film	Easier handling of <b>Guar Gum, Polyacrylamide</b> , and other additives 
<b>Reinforcement (or mechanical property enhancement)</b>	Improve polymer's mechanical properties (elastic modulus, flex modulus, tensile strength, fracture toughness, tear strength or shear strength)	Higher conductivity <b>Resin Coated Proppant</b> 
<b>Solid free flow and anti-caking</b>	Facilitate free flow of solid powders by preventing particles from coalescing, aggregating into large chunks, or caking	Free-flowing <b>Proppants, Guar Gum</b> , and <b>Polyacrylamide</b> 





## Improving **oilfield fluids** using Cabot's products



Application	Application description	Performance value for Oil & Gas customers
<b>Electrical conductivity</b>	Create conductive pathways for charge transport in solids and liquids	Higher quality down-hole imaging in <b>Drilling Fluid</b> 
<b>Emulsification</b>	Create stable "Pickering emulsions" by using particles in place of surfactants as emulsifiers	HTHP stable <b>Drilling Fluid</b> 
<b>Rheology control and Anti-settling</b>	Enable stabilization of dispersions of solids in liquids and prevent the formation of sediments in liquid suspensions	Viscosifier for <b>Drilling &amp; Frac Fluid</b> 



## Cabot Corporation

Cabot Corporation is a global performance materials company, and we strive to be our customers' partner of choice. We have been a leading manufacturer of carbon black and other specialty chemicals for more than 130 years. Our global reach enables us to partner closely with customers to meet the highest standards for performance, quality and service. Cabot is a key player in the provision of high performance materials and technology to many sectors of the oil and gas industry, and our global production network provides our customers with service capabilities as well as the latest technical innovations. We have 43 global manufacturing locations, including sites throughout the Asia-Pacific region. Cabot will continue to use its expertise in small particle science to deliver solutions that meet the needs of today and the challenges of tomorrow.



### NORTH AMERICA

Cabot Corporation Business  
and Technical Center  
157 Concord Road  
Billerica, MA 01821  
USA  
Tel: +978 663 3455  
Fax: +978 663 5471  
Tel: +678-297-1300 (Customer service)

### SOUTH AMERICA

Cabot Brasil Industria e Comercio Ltda.  
Rua do Paraíso 148 - 5 andar  
04103-000 Sao Paulo,  
SP Brazil  
Tel: +55 11 2144 6400  
Fax: +55 11 3253 0051

### EUROPE

SIA Cabot Latvia  
101 Mukusalas Street  
Riga, LV-1004,  
LATVIA  
Tel: +371 6705 0984  
Tel: +371 6705 0900  
Fax: +371 6705 0985

### MIDDLE EAST & AFRICA

Cabot Dubai  
P.O. Box 17894  
Jebel Ali Free Zone  
LOB 15, Office 424  
Dubai  
United Arab Emirates  
Tel: +971-4-8871800  
Fax: +971-4-8871801

### ASIA PACIFIC

Cabot China Ltd.  
558 Shuangbai Road  
Shanghai 201108  
China  
Tel: +86 21 5175 8800  
Fax: +86 21 6434 5532

### JAPAN

Cabot Specialty Chemicals Inc.  
Sumitomo Shiba-Daimon Bldg. 3F  
2-5-5 Shiba Daimon,  
Minato-ku  
Tokyo 105-0012  
Japan  
Tel: +81 3 6820 0255  
Fax: +81 3 5425 4500

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