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Well Stimulation Materials

US Industry Study with Forecasts for **2016 & 2021**

Study #2867 | March 2012 | \$5100 | 329 pages

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Growth will be driven by continued gains in hydraulic fracturing technology designed to boost well productivity, especially for proppants and the fluids used to deliver them into formation fractures.

US demand to rise 10.2% annually through 2016

US demand for well stimulation materials is projected to increase more than 10 percent annually to nearly \$12 billion in 2016. Growth will be sustained by continued advances in hydraulic fracturing technology designed to increase the productivity of both new and existing wells. Ongoing growth in horizontal drilling activity and development of shale resources will boost demand for proppants and the fluids used to deliver them into formation fractures. In the early portion of the forecast period, use in oil well drilling will provide most of the impetus for growth, as oil prices are high by historical standards and natural gas prices are not. However, shale gas development activity was strong in 2009, 2010, and 2011, despite low prices.

Shale gas producers to use more well stimulation

Growth in shale plays has been supported by companies looking to establish a shale gas presence and the desire of existing producers to develop already acquired leases, as well as by hedges on production made when prices were high. Through the forecast period, shale gas producers will continue to embrace innovations such as multiple-well drilling pad systems and advanced hydraulic fracturing materials in order to improve drilling efficiencies and increase per-well output, all of which will benefit well stimulation material demand.

US Well Stimulation Material Demand, 2016 (\$7.4 billion)



Proppants	51%
Additives	25%
Base Fluid Materials	18%
Gases & Other	6%

Well stimulation to grow at a decelerating pace

Well stimulation technologies have had a commercial presence for more than 60 years, but for much of that time these techniques were used fairly selectively. A number of factors have combined to transform well stimulation in the US from a niche technology to one of the most common oilfield activities. Technological advances have improved well stimulation techniques to the point that their use -- and cost -- is nearly always justified by increased well productivity. Going forward, gains for well stimulation materials will remain strong, despite some deceleration in growth. A decade or two ago, most wells drilled in the US

were not fractured. That is no longer the case. Moreover, much of the recent growth in demand for well stimulation materials has been attributable to the emergence of horizontal drilling and multistage fracturing. Horizontal drilling allows for greater reservoir contact, and therefore faster and fuller well productivity. Multistage fracturing allows for a larger number of fractures to be created at specific locations within a single wellbore. Where fracturing jobs usually included two or three stages, they can now include up to a few dozen stages. Although it is expected that the number of stages per fracturing job will continue to grow, it is anticipated that this growth will be slower than the pace seen in the past several years.

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Sample Text, Table & Chart

PRODUCTS

Coated Sand Proppants -- Demand for coated sand is projected to increase over the next five years to near 1 billion pounds in 2016. Volume is projected to increase by 100 million pounds during the same period. Demand for coated sand will be boosted by its use in hydraulic fracturing environments. As has been the case with many frac treatments, operators will use both coated and uncoated sand.

SAMPLE TEXT

Raw sand is capable of performing in closure stresses of 4,000 to 5,000 pounds per square inch, with Ottawa sands of the best performance among raw frac sands. At higher stresses, coated sand or uncoated clay-based ceramics are required. As with coated ceramic proppants, coated sand proppants are often used to tail in behind the uncoated frac sand making up the main bulk of the proppant pack. This tailed-in coated sand proppant provides a barrier which reduces proppant backflow when the transport pumping pressure is released and cleanout begins. It continues to help with flowback control after the well is put back into operation.

Coated sand proppants are also used for the entire proppant placement in well stimulations taking place at depths too great for uncoated sand but where cost considerations make coated sand more attractive than ceramic proppants, which are generally used in the most strenuous conditions. The issue of whether resin coated sand is stronger than uncoated sand is debatable, but resin coated proppants offer a number of attributes that make it a valuable product.

Shale formations such as the Haynesville, Barnett and Marcellus Shales are also suitable applications for coated sand proppants. Coated sand proppants are generally more suitable for deeper wells with higher pressures and higher temperatures, such as the Haynesville Shale.

104

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TABLE IV-2

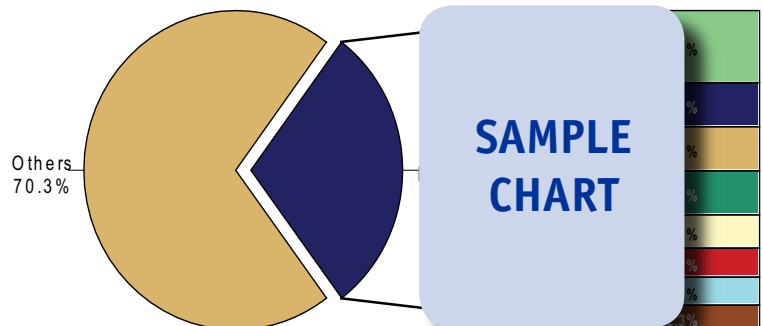
PROPPANT DEMAND BY TYPE
(million dollars)

Item	2001	2006	2011	2016	2021
Wells Drilled	35	35	35	35	35
000 lb proppant/well					20
000\$ proppant/well					2
Proppant Demand (mil lb)					5
cents/lb					6
Proppant Demand					5
Sand Proppants					0
Ceramic Proppants					5
Other Proppants					0
% proppants					8
Well Stimulation Material Demand					50

SAMPLE TABLE

CHART VI-1

US WELL STIMULATION MATERIAL MARKET SHARE
(\$7.4 billion, 2011)

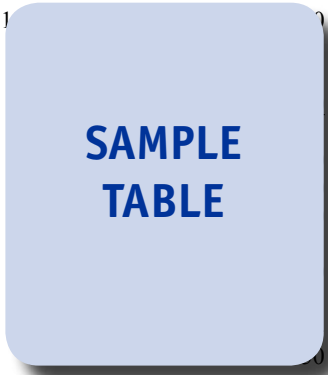


SAMPLE CHART

Sample Profile, Table & Forecast

TABLE V-7
SOUTHERN REGION:
WELL STIMULATION MATERIAL DEMAND BY STATE
 (million dollars)

Item	2001	2006	2011	2016	2021
Wells Drilled					
000\$ material/well					
Well Stimulation Material Demand					
Arkansas					
Federal - Gulf of Mexico					
Louisiana					
New Mexico					
Texas					
Other Southern Areas					
% Southern Region					
Well Stimulation Material Demand					



COMPANY PROFILES

Mineração Curimbaba Limitada
 Av. Joao Pinheiro, 3665
 Pocos de Caldas 37704
 Brazil
 55-35-37
 http://www

Annual S
 Employ

Key Pro

SAMPLE PROFILE

Mineração Curimbaba is a primary producer of bauxite ores for the oil and gas, petrochemical, refractory, ceramic, agriculture, smelting, jet-blasting, welding and other markets. The Company exports most of its production, mainly to other South American countries, North America, Europe and Asia. Mineração Curimbaba is part of Curimbaba Grupo (Brazil).

The Company competes in US well stimulation materials industry primarily via the manufacture and sale of SINTERLITE, SINTERLITE LOCK, SINTERBALL and SINTERBLAST bauxite proppants for use during the fracturing of deep gas and oil wells. SINTERLITE low density, spherical-grained products are designed for use in high-temperature, high-closure stress conditions. These proppants are designed to provide thermal stability, and high chemical and crush resistance. It produces SINTERLITE LOCK bauxite low density proppants using a mixture of angular bauxite grains with spherical SINTERLITE bauxite grains. These proppants are engineered to prevent proppant flowback in high-temperature, high-closure stress environments.

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“Demand for well stimulation materials in the Southern Region is forecast to increase 9.3 percent per year to \$5.6 billion in 2016. Growth in the region will be due in part to increased drilling activity in the Fayetteville Shale in Arkansas and the Haynesville Shale in Louisiana and Texas (despite a recent downturn due to low natural gas prices), as well as ongoing drilling activity in the Barnett Shale in Texas.”

--Section V, pg. 187

OTHER STUDIES

World Fuel Additives

The world fuel additives market will rise 8.0 percent yearly to \$59.4 billion in 2016. The rapidly growing fuel market in China will drive gains, especially as China's fuel standards become stricter and additive treat rates rise. Deposit control additives will see the greatest gains globally, while cold flow improvers grow at the fastest rate. This study analyzes the \$40.5 billion world specialty fuel additives industry, with forecasts for 2016 and 2021 by product, application, world region and for 19 countries. The study also evaluates company market share and profiles industry players.

#2977December 2012 \$6100

World Oilfield Chemicals

World demand for oilfield chemicals is expected to increase 8.9 percent annually to \$28 billion in 2016. The US will remain the largest market based on its many mature wells and rapid growth in horizontal drilling and hydraulic fracturing. Brazil will be the fastest growing market. Drilling fluids and completion and workover fluids will lead gains. This study analyzes the \$18 billion world oilfield chemical industry, with forecasts for 2016 and 2021 by product, world region and for 44 countries. The study also evaluates company market share and profiles industry participants.

#2973December 2012 \$6200

Specialty Fuel Additives

US demand for specialty fuel additives will grow 4.8 percent yearly to \$1.6 billion in 2016. Cold flow improvers will lead gains due to the mandated use of more biodiesel, while deposit control agents will remain the most common type. Gasoline will remain the largest application. Blenders and terminals will continue as the largest market. This study analyzes the \$1.3 billion US specialty fuel additives industry, with forecasts for 2016 and 2021 by additive type, application and market. The study also evaluates company market shares and profiles industry players.

#2874April 2012 \$4800

Well Stimulation Materials

US demand for well stimulation materials is forecast to rise 10.2 percent annually to nearly \$12 billion in 2016. Growth will be driven by continued advances in hydraulic fracturing technology designed to increase the productivity of both new and existing wells. Proppants, gases, and base fluid materials will be among the fastest growing products. This study analyzes the \$7.4 billion US well stimulation material industry, with forecasts for 2016 and 2021 by product and regional market. The study also evaluates company market shares and profiles industry players.

#2867March 2012..... \$5100

Oilfield Chemicals

US oilfield chemical demand will rise 8.3 percent yearly through 2015, driven by the recovery of oil prices and the development of shale gas resources. Stimulation and cementing chemicals will be the fastest growing products, followed by drilling fluids. Natural gums, polymers, acids and surfactants will be among the best prospects in raw materials. This study analyzes the \$9.1 billion US oilfield chemical industry, with forecasts for 2015 and 2020 by product and raw material. The study also evaluates company market share and profiles industry players.

#2821November 2011 \$4900

About The Freedonia Group

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