Proppants in North America

Industry Study with Forecasts for **2019 & 2024**

Study #3302 | September 2015 | $5300 | 251 pages

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Industry Study with Forecasts for *2019 & 2024*

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Demand for proppants will decelerate from the extremely rapid growth posted between 2004 and 2014 and future gains will result primarily from increases in proppant loadings in unconventional wells.

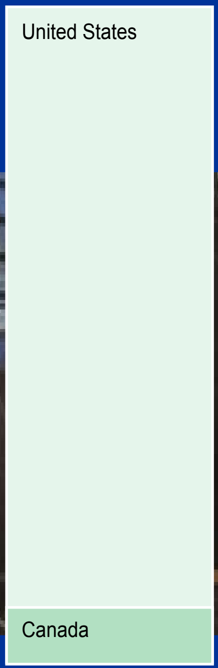
North American demand to rise 7.6% annually through 2019

Demand for proppants in North America is forecast to increase 7.6 percent annually through 2019 to 162 billion pounds, valued at $8.2 billion. With oil and gas prices expected to remain subdued in the near term, demand for proppants will decelerate from the extremely rapid growth posted between 2004 and 2014 and future gains will result primarily from increases in proppant loadings in unconventional well completions.

Improved drilling efficiency to boost proppant demand

Two key trends have driven explosive growth in proppant demand in recent years: the widespread adoption of unconventional oil and gas drilling activity across North America and a shift toward much larger hydraulic fracturing treatments using ever greater volumes of proppants. While unconventional oil and gas drilling began in just a few locations, the practice has spread to a number of major tight and shale plays throughout the US and Canada. Despite an expected low pricing environment for oil and gas, growth in the proppant market will be supported by improvements in drilling efficiency and reductions in other aspects of well completion costs as companies seek new opportunities in order to best balance production and investment.

North American Proppant Demand, 2019
(162 billion pounds)



Proppant loadings to rise

In addition to growth in unconventional drilling and completion activity, dramatic increases in the volume of proppants used per well have also supported rising proppant demand and a changing product mix. As oil and gas companies have gained experience in optimizing hydraulic fracturing design, they have increasingly shifted away from premium resin coated sand and ceramic proppants toward using much larger volumes of raw frac sand. This trend is expected to continue, providing a significant boost to volume demand while holding back gains in average prices.

Drilling activity in liquids-rich unconventional plays is expected to be constrained by low oil prices through 2019, with export opportunities for natural gas providing some incentive to drilling in gas bearing formations. Even though overall completion activity will be held back by the low oil and gas price environment that is expected to persist for several years, improvements in drilling efficiency and falling well costs will allow for modest increases nonetheless. Oil and gas companies have seen remarkable increases in both the speed at which horizontal wells can be drilled and the productivity of these wells following hydraulic fracturing. In large part, well productivity has increased as a direct result of the use of greater volumes of proppants in fracturing operations.

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Sample Text, Table & Chart

REGIONAL PROPPANT MARKETS

Pennsylvania: Although Pennsylvania was the location oil well drilled in the US, the state has not been a leading oil for decades. Pennsylvania continues to produce only a small oil, but has recently emerged as one of the largest natural gas accounting for about 16 percent of US natural gas production after supplying less than one percent as recently as 2008. Si output from the state's shale gas resources has expanded rapi ing in dramatic growth of Pennsylvania's natural gas product date, the Marcellus shale has accounted for nearly all of the s in Pennsylvania, although there is also some activity targetin Utica formation.

Demand for proppants in Pennsylvania is projected to i percent per year to s in 2019, valu million. Growth w hat between 2 2014 as annual wel modestly and loadings per well s ncreases. Ho expected rebound i tinue to boost activity in dry gas ale. Much of the Marcellus activity has shifted part of the state to the southwestern area, which holds more wet gas. As gas prices return to levels where drilling for gas is more profitable, drilling activity in dry gas producing areas will become more economically attractive.

SAMPLE TEXT

Historically, most wells in Pennsylvania have been low-output gas wells. It has become a common practice to hydraulically fracture these wells at a time of completion and also a remedial workover activity. Most such hydraulic fracturing treatments are negligible, as involve 100,000 pounds of proppant or less. However, the lo environment that has persisted since about 2009 has made dr fracturing conventional vertical wells less economically attra contrast to conventional wells, those in the Marcellus shale a

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TABLE V-12

MIDWESTERN REGION:
PROPPANT DEMAND BY TYPE & STATE

Item	2004	2009	2014	2019	2024
Well Completions					
000 lb proppant/completion					
Proppant Demand (mil lb)					
By Type:					
Raw Frac Sand					
Resin Coated Sand					
Ceramic					
By State:					
North Dakota					
Oklahoma					
Ohio					
Kansas					
Other					
$/lb					
Proppant Demand (mil US$)					
% Midwestern					
US Proppant Demand (mil US$)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SAMPLE TABLE

Source: The Freedonia Group, Inc.

CHART VI-2

NORTH AMERICAN RAW SAND PROPPANT MARKET SHARE, 2014
($3.2 billion)

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Sample Profile & Table, & Study Coverage

TABLE IV-5

NORTH AMERICAN CERAMIC PROPPANT DEMAND BY COUNTRY & TYPE (million pounds)

Item	2004	2009	2014	2019	2024
Proppant Demand					
% ceramic					
Ceramic Proppant Demand					
By Country:					
United States					
Canada					
By Type:					
Bauxite					
Clay					
Coated & Other					
$/lb					
Ceramic Proppant Demand (mil $)					
% ceramic					
Proppant Demand (mil $)					

Source: The Freedonia Group, Inc.

SAMPLE TABLE

COMPANY PROFILES

Messina Incorporated
8131 LBJ Freeway, Suite 180
Dallas, TX 75251
214-887-9600
http://www.m

Annual Sales:
Employment:
Key Products: oppants, and fracturing san

SAMPLE PROFILE

Messina is a manufacturer of oilfield chemicals, refinery chemicals, and related products The privately held company also provides engineering services and a line of laboratory testing equipment. It maintains a primary production, research, and development facility in Dallas, Texas.

The Company competes in the North American proppants industry through the manufacture of sintered bauxite and fused zirconium proppants, and fracturing sands for use in hydraulic fracturing applications. Sintered bauxite proppants comprise MIGHTY-PAC, MIGHTY-PROP, MIGHTY-PROP-LITE and MIGHTY-PROP-ULTRALITE offerings. MIGHTY-PAC high-strength sintered bauxite proppant, which is intended for use in gravel packing applications, is especially suitable for use in steam injection wells with high temperature and high pH conditions. The Company's MIGHTY-PROP proppant is designed for use in wells with closure stresses from 8,000 to 15,000 pounds per square inch (psi), while MIGHTY-PROP-LITE intermediate-strength proppant is engineered for use in wells with closure stresses ranging from 7,000 to 12,000 psi. MIGHTY-PROP-ULTRALITE proppant, which is available in a variety of mesh sizes, can be employed in wells with closure stresses from 4,000 to 8,000 psi.

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STUDY COVERAGE

This Freedonia study, ***Proppants in North America***, presents historical data (2004, 2009, 2014) plus forecasts (2019, 2024) for supply and demand, as well as demand by regional market. The study also examines key market environment factors, details the industry structure, evaluates company market share and profiles 24 industry competitors.

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Related Studies

Oilfield Chemicals

This study analyzes the US oilfield chemical industry. It presents historical demand data (2004, 2009 and 2014) and forecasts (2019 and 2024) by application (e.g., stimulation fluid additives, drilling fluid additives, production chemicals, cement additives, completion and workover fluid additives, EOR products) and product (polymers, specialty chemicals, commodity chemicals, gases). The study also considers market environment and technology factors, details industry structure, evaluates company market share and profiles industry players.

#3352............November 2015...............$5300

Drilling Products & Services

US demand for oil and gas drilling products and services is forecast to increase to $71 billion in 2019, reflecting average annual gains of 3.0 percent. Services will remain the dominant segment while fluids will grow the fastest. The Eastern and Western US will be the fastest growing regional markets. This study analyzes the $60.8 billion US drilling product and service industry, with forecasts for 2019 and 2024 by product and service for four regional markets and 17 state markets. The study also evaluates company market share and profiles industry players.

#3286..................June 2015....................$5300

World Oilfield Chemicals

World demand for oilfield chemicals is forecast to increase 6.0 percent annually to $33 billion in 2019. North America will remain by far the dominant market, while Asia/Pacific and Africa/Mideast markets grow the fastest from small bases. Drilling fluids will continue to account for the largest share of demand and will grow at a healthy pace. This study analyzes the $25 billion world oilfield chemical industry, with forecasts for 2019 and 2024 by product, world region, and for 25 countries. The study also evaluates company market share and profiles industry players.

#3249................ March 2015..................$6400

World Industrial Silica Sand

Global demand for industrial silica sand is forecast to advance 5.5 percent annually to 291 million metric tons in 2018, with a value of $12.5 billion. The Asia/Pacific region will remain the largest market, while North America will grow the fastest. Glass will remain the leading outlet, while the hydraulic fracturing segment grows the fastest. This study analyzes the 223 million metric ton world silica sand industry, with forecasts for 2018 and 2023 by market, world region, and for 19 countries. The study also evaluates company market share and profiles industry participants.

#3237............ December 2014................$6200

World Upstream Oil & Gas Outlook

World upstream oil and gas activity will remain at a high level, with annual wells drilled increasing to over 115,000 in 2018. While recent crude oil price drops may limit drilling in the volatile North American market, world activity should continue to grow as many lower cost or highly productive wells remain profitable. This study analyzes activity in the 103,400-well world upstream oil and gas industry, with forecasts for 2018 and 2023 by indicator, world region, and for 16 countries. The study also considers market environment factors and profiles industry participants.

#3197............ December 2014................$6200

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