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Proppants in North America

Industry Study with Forecasts for **2017 & 2022**

Study #3048 | August 2013 | \$5100 | 261 pages

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While growth in proppant demand is expected to slow from the heady early years of the 2000s, stellar double-digit annual gains are still expected, with demand reaching \$9.4 billion in 2017.

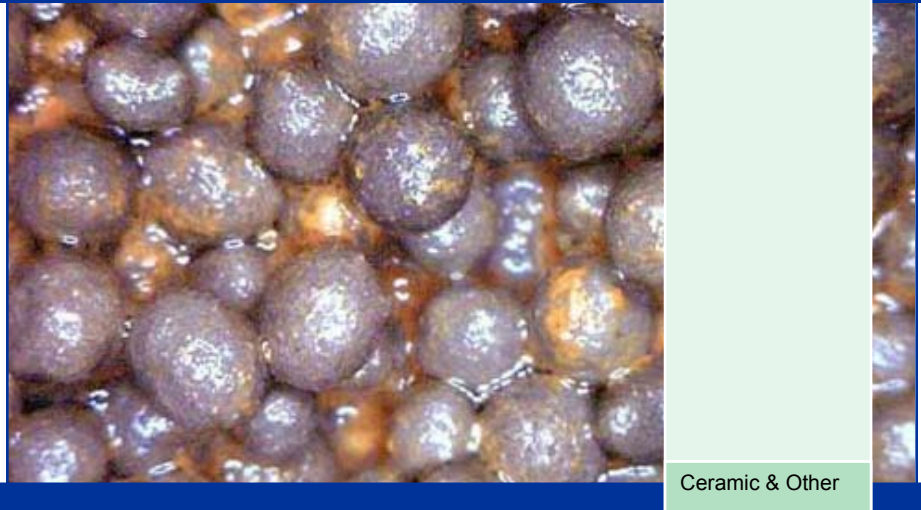
North American demand to surpass 100 billion pounds in 2017

North American proppant demand has risen sharply since 2002, rising from \$250 million to nearly \$5 billion in 2012. While growth is expected to slow from the heady early years, stellar double-digit annual gains are still expected, with overall demand reaching over 100 billion pounds in 2017, valued at \$9.4 billion. Proppants have been critical to the expansion of oil and gas production in North America, setting off a chain of events that is revitalizing the region's chemical processing and other industries.

New drilling techniques, favorable oil/gas pricing to continue driving gains

Proppants have been used in oil and gas production for more than 60 years, but the advent of horizontal drilling technology coupled with multistage hydraulic fracturing created new opportunities for growth starting around the mid-2000s, especially as success in early uses such as in the Barnett Shale (Texas) was translated to even more productive formations. These advances became more prominent at the same time oil and gas prices skyrocketed, providing further impetus to drilling and completion activity. Continued high oil prices and a recovery in natural gas prices will sustain oilfield activity in the United States and Canada, with particularly good opportunities expected in a number of states

North American Proppant Demand (102.4 billion pounds, 2017)



including Texas, North Dakota and Pennsylvania, as well as in several developing plays in Canada, including the Montney and Horn River plays. However, nearly every area with significant unconventional reserves is expected to benefit from these trends.

Raw sand to remain dominant type, coated sand to gain market share

Raw sand will continue to account for the lion's share of proppant demand. Although it generally cannot be used in wells with high closure pressures, raw sand performs suitably in most conditions. Due to their higher cost, ceramic proppants will be limited to areas

requiring high performance products, especially as improved fracturing techniques have allowed sand to be used in applications previously thought to be beyond its performance range. However, these production areas include some of the main centers of upstream activity, such as the Eagle Ford Shale in Texas and the Bakken Shale in North Dakota, where sand and ceramics are often used together. Coated sand proppants are expected to increase their market presence, as they offer cost advantages over ceramic proppants and performance advantages over raw sand. These different product types (and sizes) are often used in combinations that maximize well productivity.

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Sample Text, Table & Chart

PROPPANT SUPPLY & DEMAND

Bauxite-Based -- Demand for bauxite-based proppants in 2017. Bauxite-based proppants are stronger than other ceramic proppants, and considerably stronger than sand proppants, making them a product of choice in environments requiring high resistance to pressures. Additionally, they are more resistant to the high temperatures encountered in many wells. They share a number of attributes with ceramic proppants, such as the fact that they are more uniform and shaped than raw or coated sand proppants, which allows them to be more porous. However, they are the most expensive type of ceramic proppant, and ceramics are the most expensive proppant category. As a result, users often will turn to technically inferior proppant types that cost far less if their performance attributes are suitable in that particular case.

Bauxite proppants were the first commercially significant ceramic proppants. Bauxite proppants are stronger than other ceramic proppants, and considerably stronger than sand proppants, making them a product of choice in environments requiring high resistance to pressures. Additionally, they are more resistant to the high temperatures encountered in many wells. They share a number of attributes with ceramic proppants, such as the fact that they are more uniform and shaped than raw or coated sand proppants, which allows them to be more porous. However, they are the most expensive type of ceramic proppant, and ceramics are the most expensive proppant category. As a result, users often will turn to technically inferior proppant types that cost far less if their performance attributes are suitable in that particular case.

The North American bauxite ceramic proppant market has two major suppliers: Saint-Gobain Proppants and Mineração Curimbaba. Saint-Gobain markets its offerings under the VERSAPROP and INTRADENAMES. The company dominated this product sector until the mid 2000s, when a number of other companies entered the market. Mineração Curimbaba, which has produced proppants in Brazil since the mid 1990s, significantly increased its US market presence over the past few years.

88

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TABLE V-12

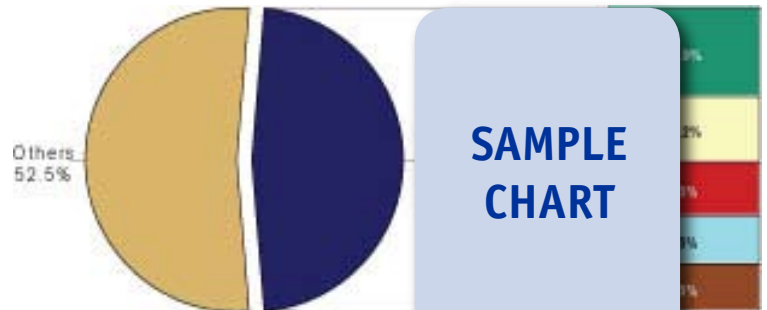
MIDWESTERN REGION: PROPPANT DEMAND BY TYPE & STATE

Item	2002	2007	2012	2017	2022
Well Completions	50	50	50	50	50
000 lb proppant/completion					
Proppant Demand (mil lb)					
By Type:					
Sand					
Raw					
Coated					
Ceramic					
Other					
By State:					
North Dakota					
Oklahoma					
Kansas					
Ohio					
Other					
\$/lb					
Proppant Demand (mil \$)					
% Midwestern					
US Proppant Demand (mil \$)					

SAMPLE
TABLE

CHART VI-1

NORTH AMERICAN PROPPANT MARKET SHARE BY COMPANY (\$4.7 billion, 2012)

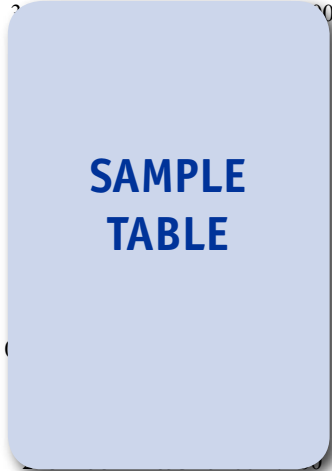


SAMPLE
CHART

Sample Profile, Table & Forecast

TABLE IV-6
NORTH AMERICAN CERAMIC PROPPANT DEMAND BY COUNTRY & TYPE
 (million pounds)

Item	2002	2007	2012	2017	2022
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 \$)					



COMPANY PROFILES

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

Annual Sales:
 Employment:

Key Products: proppants, and
 fracturing sand



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. The Company maintains a production, and research and development facility in Dallas, Texas.

The Company is active in the North American proppants industry through the production of sintered bauxite and fused zirconium proppants, and fracturing sands for use in hydraulic fracturing applications. Sintered bauxite proppants are available under the MIGHTY-PAC, MIGHTY-PROP, MIGHTY-PROP-ULTRA LITE, and MIGHTY-PROP-LITE brand names. MIGHTY-PAC proppant is utilized in gravel packing applications and is especially suitable for use in steam injection wells with high temperature and high pH conditions. Messina's MIGHTY-PROP proppant is intended 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 well applications with closure stresses ranging from 7,000 to 12,000 psi. MIGHTY-PROP-ULTRALITE proppant is a lightweight offering

**STUDY
COVERAGE**

This Freedonia industry study, **Proppants in North America**, presents historical demand data (2002, 2007, 2012) plus forecasts for 2017 and 2022 for supply and demand by type, as well as by US regional market. The study also assesses key market environment factors, examines the industry structure, evaluates company market share and profiles 28 competitors in the US industry.

OTHER STUDIES

Shale Gas & Tight Oil: Products & Services

US demand for shale gas and tight oil products and services is forecast to rise 3.5 percent annually to \$98 billion in 2017. Stimulation materials will be the fastest growing products, while completion and production will pace the services sector. The Permian basin will remain the largest play, while the Eagle Ford Shale will grow the fastest. This study analyzes the \$82.2 billion US shale gas and tight oil product and service industry, with forecasts for 2017 and 2022 by product, service, US region and play. The study also evaluates company market share and profiles industry players.

#3112 February 2014..... \$5200

World Well Stimulation Materials

World demand for well stimulation materials will grow more than 12 percent per year to over 65 million metric tons in 2017, valued at \$23 billion. Both proppants and chemicals will grow at similar annual rates. The US will remain the dominant market while demand in Canada, China, Russia and other countries will grow at a faster pace. This study analyzes the 36.8 million metric ton world well stimulation material industry, with forecasts for 2017 and 2022 by type, country and world region. The study also evaluates company market share, and profiles industry players.

#3080December 2013 \$6300

Oilfield Chemicals

US demand for oilfield chemicals is forecast to increase 2.1 percent annually through 2017 to \$10.5 billion. EOR products and drilling fluid products will grow the fastest. Gains in value terms will be strong for commodity and specialty chemicals as well as gases, while demand for polymers will decline. This study analyzes the \$9.5 billion US oilfield chemical industry, with forecasts for 2017 and 2022 by application and product. The study also considers market environment and technology factors, evaluates company market share and profiles industry players.

#3065 November 2013 \$5100

World Catalysts

World demand for catalysts will rise 5.8 percent per year to \$19.5 billion in 2016. Rapid growth will occur in both Asia and the Middle East. Brazil will lead strong growth in Central and South America. Polymerization catalysts will experience the fastest growth, driven by healthy expansion of polymer resin production. This study analyzes the \$14.7 billion world catalyst industry, with forecasts for 2016 and 2021 by material, type, market, world region and for 24 countries. The study also evaluates company market share and profiles industry players.

#2989 February 2013 \$6400

Oil & Gas Infrastructure

US demand for oil and gas infrastructure equipment will rise 6.3 percent yearly through 2016 to \$12.1 billion. The key pipe segment will benefit from construction of new transmission lines and the need for gathering systems at new drilling sites. Compressors will be the fastest growing type, while the Eastern US leads gains by region. This study analyzes the \$8.9 billion US oil and gas infrastructure equipment industry, with forecasts for 2016 and 2021 by product, application and US region. The study also evaluates company market share and profiles industry players.

#2922 November 2012 \$5100

About The Freedonia Group

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

- Chemicals • Plastics • Life Sciences • Packaging • Building Materials • Security & Electronics • Industrial Components & Equipment • Automotive & Transportation Equipment • Household Goods • Energy/Power Equipment

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Freedonia Custom Research is ideal for companies seeking to make a strategic difference in the status quo and focus on future business growth. Working side by side with clients, Freedonia's team is able to define a research project that is custom-tailored to answer specific questions and provide the basis from which a company can make informed business decisions.

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