

**RILSAN® PA11—A DURABLE CHOICE
FOR THE OIL & GAS INDUSTRY**

The extreme conditions of oil and gas operations present their own set of challenges to the industry. Learn more about how Rilsan® PA11 has proven to be a versatile material in a variety of critical applications related to the oil and gas industry.

Offshore Seismic Acquisition

80% of future oil and gas reserves in the world are in the Gulf of Mexico to nearly 23,000 feet below the surface, deeper than the height of Mt. Kilimanjaro.

Advanced offshore seismic acquisition systems help researchers identify these hydrocarbon deposits with improved seismic data for reduced cycle time, cost and environmental risk.

Because of its strength, durability and resistance to corrosion, Rilsan® PA11 is used in cables, sheathing, air gas umbilicals, ocean bottom cables and tow cables in these innovative systems.

Choke & Kill

The energy transportation network in the U.S. consists of over 2.6 million miles of pipes, which encircle the earth over 100 times.

In offshore operations, part of this network consists of Choke & Kill lines, which are connected to the subsea BOP stack and are used to control the pressure in the well. In certain offshore operations, these lines run along the outside of the drilling pipe to the surface.

Rilsan® PA11 can be used as a liner in these high pressure piping systems due to its durability in tough conditions.

Flowlines & Risers

The first offshore well was dug in 1837 and measured less than 50 feet in the Ohio reservoir Grand Lake St. Marys.

Today's wells can measure more than 6,000 feet deep, making reliable risers and flowlines one of the most integral components of the extraction process.

Thanks to its resistance to hydrocarbons and excellent mechanical properties, Rilsan® PA11 is used as a liner material and the core sheath in these critical components. Rilsan® PA11 can last up to 30 years in these deep, subsea operating conditions.

Umbilicals

Umbilicals are the critical link between the surface and sub-sea equipment, such as wellheads, subsea manifolds, and BOP's.

Subsea umbilicals help support drilling operations and supply control, energy and injection fluids to the well.

Because of its outstanding chemical resistance and durability, Rilsan® PA11 is used as the liner umbilicals to transport hydraulic and injection fluids. Rilsan® PA11 is also used in the core sheathing protecting the bundled tubes and cables.

Gas Gathering

There are approximately 20,000 miles of gathering systems in the United States, originating at over 460,000 wells.

Gas is pumped from these wellheads into gathering lines, which transport the gas to processing facilities, purifying and making it suitable for commercial and residential use.

Suitable for high temperature, high pressure multiphase piping systems for gas gathering, Rilsan® PA11 provides a complete system of coatings, fittings, valves and more.

Rilsan® PA11 SDR 11 piping connects up to 412 psi for compressed gas gathering systems and is rated up to 80° F, allowing it to be used for high temperature oil and gas transport systems.

Distribution

Every day, 70 million people in the U.S. rely on natural gas distribution, over \$4.6 billion worth of gas that goes into 56.2 billion feet of pipe or enough to fill nearly 23 million shipping containers (40' containers).

Rilsan® PA11 is a corrosion free, alternating fire and surge resistant, high strength polyamide for direct daily transmission and distribution.

Rilsan® PA11 also addresses the need for Cathodic Protection Systems and provides lower installed cost and total lifetime cost compared to steel.

Transmission

Gas is initially transported at high pressures through smaller size lines, but is reduced to under 0.25 psi

...but then the pressure created by flowing continues through a series.

Arkema's Rilsan® PA11 grade for regulated gas transmission and distribution has been DOT approved as CFR 49 Part 192 for pressures up to 250 psi since November 2018.

Sources:
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