



PCP ELASTOMERS SPECIFICATIONS

EXPERIENCE PERFORMANCE.

Artificial lift products and services that consistently outperform the market and reduce OPEX.



ELASTOMERS

SOFT MEDIUM NITRILE (SN1) - THE ABRASIVE RESISTANT WORKHORSE

- Low-hardness, medium-nitrile elastomer with excellent mechanical properties including tear and elongation.
- Resilient elastomer capable of handling high amounts of abrasives including large solids while minimizing damage.
- Requires a higher compression rotor fit that delays decline in volumetric efficiency associated with abrasive wear.
- Ideal for CHOPS (Cold Heavy Oil Production with Sand) applications in with low API gravity, viscous oil.

MEDIUM NITRILE (MN1) - THE GENERAL PURPOSE ELASTOMER

- General-purpose, oil, water and abrasive resistant medium nitrile elastomer with excellent mechanical properties.
- Wear resistant elastomer capable of handling moderate amounts of abrasives with good overall flexibility.
- Offers excellent oil resistance in applications with heavy-medium crude oil.
- Recommended elastomer for CSG/CBM applications with an excellent balance of properties, including water/brine resistance and wear resistance to fine solids.

HIGH NITRILE (HN2) - FOR HIGH AROMATIC CONTENT, LIGHT OIL APPLICATIONS

- Augmented high-nitrile elastomer with significant enhancements to mechanical properties, oil and chemical resistance.
- Offers superior oil and aromatics resistance for applications with light oil and chemical treatment.
- Superior stator-tube bonding, with high retention of bond strength even after exposure to high temperature and aggressive fluids.

ELASTOMER QUALIFICATION AND TESTING

- Lifting Solutions elastomers are fully compliant and tested to the specifications of ISO 15136-1:2009E, Annex A.
- A detailed Progressing Cavity Pump Elastomer Datasheet is available on request with enhanced detail on our elastomers.
- Technical bulletins targeted at specific application types and various downhole scenarios (ex. high gas, water TDS, high swell fluids, low water cuts) are available in our Library.
- Our advanced materials laboratory enables testing of field fluids with specific elastomers utilizing ASTM procedures to offer consistent elastomer and pump sizing recommendations.
- A digital tracking database containing hundreds of field fluid test results and thousands of installation/inspection records offers enhanced predictive capabilities for new applications.
- For additional information on our elastomers please contact a Lifting Solutions representative.

Elastomer Code	Typical Applications	Nitrile Level (% ACN)	Hardness (Shore A)	Maximum Downhole Temperature ¹	Resistance Guide					
					Oil	Water	Abrasive	Gas ³	H ₂ S	CO ₂
SN1	Heavy oil (CHOPS), high abrasives	32 to 36	55 to 60	60°C (140°F)	Up to 15 API	Very Good	Excellent	Fair	Fair	Fair
MN1	Heavy to moderate oil, moderate abrasives, dewatering (CSG/CBM)	32 to 36	65 to 70	80°C (176F) 100°C (212°F) for CSG/CBM	Up to 20 API (Max 25 API) ²	Very Good	Very Good	Good	Good	Good
HN2	Medium to light oil, high CO ₂ , chemical treatment, deeper/hotter wells	45 to 50	70 to 75	100°C (212°F)	Up to 35 API (Max 45 API) ²	Very Good	Good	Very Good	Good	Very Good Excellent ⁴

¹ LS can provide technical documentation on the temperature rating methodology upon request.

² Suitability of upper API gravity depends on specific application conditions including oil chemistry, water cut, and temperature.

³ Gas & explosive-decompression resistance is a concern primarily with CO₂ since methane (CH₄) permeability is significantly lower in elastomers.

⁴ HN-ED Explosive Decompression elastomer formulation is available for high CO₂ applications. This elastomer is custom order.