

Oil, Gas and Energy



Very Low Temperature Sealing for Oil, Gas & Energy Applications Using Tecnoflon® VPL Grades

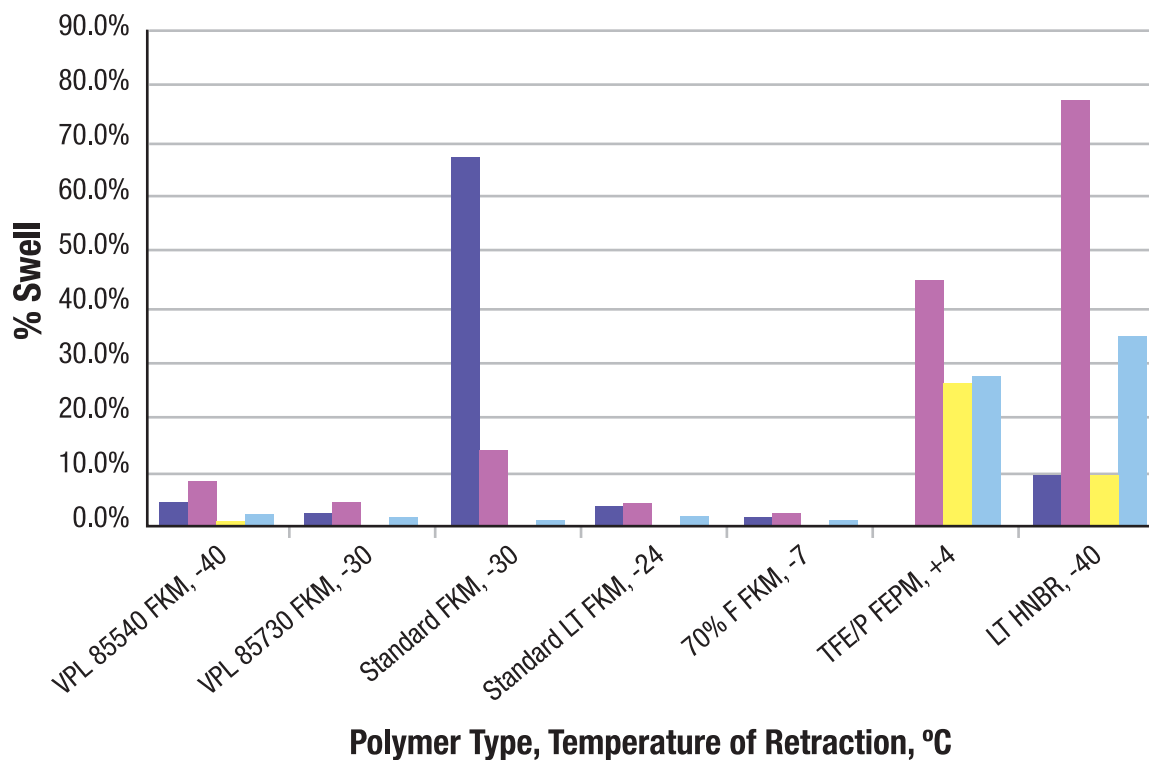
While the oil well environment can be very hot, the surface conditions in places such as the Arctic may be sub-zero. Oil tools are often tested on the surface before being used downhole. If these conditions are cold enough, standard fluoroelastomer (FKM) seals may fail. Subsurface equipment on the ocean floor may approach 0°C which is below the glass transition temperature (T_g) of some fluorinated elastomers. Additionally, cold tools on the surface may be thermally shocked as they are lowered into the well. Seals must remain flexible during the thermal shock which occurs when a cold tool is introduced into hot fluid.

Tecnoflon VPL is the new series of FKM that expands the low temperature service of FKM and significantly improves chemical resistance compared to standard low temperature FKM. VPL grades are based on the innovative MOVE (pronounced Mo Vay) monomer technology. MOVE technology enables easy processing and molding while delivering exceptional fluid resistance and low temperature flexibility. VPL grades are resistant to fluids that the previous generation of low temperature FKM could not withstand.

The chart on page two shows the improved fluid resistance of Tecnoflon VPL compared to standard low temperature FKMs, high fluorine FKM, low temperature HNBR, and TFE/P FEPM. VPL grades show low volume swell in fluids that may be encountered in an oil and gas application. Notably, VPL grades offer low swell and exceptional fluid resistance in all the test fluids while other elastomers commonly used in oil and gas applications such as LT HNBR and TFE/P show large volume swells and would be unsuitable for sealing in these fluids.



Volume Swell, 70 hours @ 23°C



■ Methanol
 ■ Toluene
 ■ Iso-Octane
 ■ NORSOK Reference Fluid,
 70% Heptane/ 20% Cyclohexane, 10% Toluene

VPL grades are offered in two low temperature performance ranges, -30°C and -40°C.

Tecnoflon VPL 85730 has a Temperature of Retraction (Tr10) of -30°C with excellent chemical resistance compared to the standard grades of LT FKM with the same Tg.

Tecnoflon VPL 85540 combines an extended low temperature service (Tr10 -40 °C) range with superior chemical resistance.

Contact your local Tecnoflon representative for assistance in selecting the most appropriate VPL grade or any other Tecnoflon grade for your application or visit www.solvaysolexis.com.

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