



TECHNICAL BULLETIN Oil & Gas Compounds

Seal Engineers designing components for energy applications encounter a wide variety of environments. Those with elastomer seal elements can often require a number of different Sealing Solutions.

Precision Associates has more than 60 years experience developing material solutions for diverse industries including oil, gas and geothermal. Several polymers are particularly well suited for Energy applications. Our chemists have developed specialty compounds in each of these polymers for specific applications.



Typical concerns include:

- Corrosive Environments
- High Pressure
- High Temperature
- Low Temperature
- Steam
- Rapid Gas Decompression (RGD)

Desirable properties include:

- Abrasion Resistance
- Controlled Swell

Choosing the wrong material can have dire consequences. The picture below illustrates the effects of Rapid Gas Decompression (RGD) on a standard FKM O-Ring.

While no single rubber compound will be able to provide a universal sealing solution, designers should be able to achieve the most cost effective material solution for each application. Contact Precision Associates for help determining the best material for yours.



The Precision Associates compounds listed on the reverse of this page have been selected for their suitability in various Energy related applications.



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Precision Associates' Compounds Formulated Specifically for Oil & Gas Applications

Compound No	Duro	Polymer	Temperature Range (°C)	Applications/Properties
1790	70	NR	-15° - +100°	Mud Pump Rod Packer
3790	70	NBR	-20° - +125°	General Oil Field Nitrile
3890	80	NBR	-20° - +125°	General Oil Field Nitrile
9701	70	FKM	-40° - +204°	Low Temperature
9901	90	FKM	-40° - +204°	Low Temperature
9905	90	FKM	-50° - +204°	Extreme Low Temp, Sour Service [†]
608905	90	FKM—Viton [®]	+15° - +204°	RGD Resistant**, Sour Service [†]
8990	95	FKM -Viton [®]	+15° - +204°	Extrusion Resistant, RGD Resistant**, Sour Service [†]
23967	90	L'Garde EPDM	-50° - +150°	Steam (up to +300° C), Geothermal
25796	70	FEPM - Aflas [®]	-20° - +232°	General Oil Field Aflas [®]
25895	85	FEPM - Aflas [®]	-20° - +232°	RGD Resistant**, Sour Service [†]
25897	80	FEPM - Aflas [®]	-20° - +232°	ESP Bags
25998	90	FEPM - Aflas [®]	-20° - +232°	Extrusion Resistant
34795	70	FFKM	-10° - +300°	Steam & Improved Heat Resistant
34995	90	FFKM	-10° - +300°	Steam & Improved Heat Resistant
55703	70	HNBR	-40 - +160°	Low Temperature
55803	80	HNBR	-40 - +160°	Low Temperature
55857	75	HNBR	-25 - +160°	Abrasion Resistant, Internally Lubricated
55890	80	HNBR	-25 - +160°	Extrusion Resistant
55903	90	HNBR	-40 - +160°	Low Temperature
55995	95	HNBR	-25 - +160°	RGD* and Extrusion Resistant
55997	95	XHNBR	-25 - +160°	Abrasion Resistant, Internally Lubricated

Test results are typical. Customer should determine the suitability of any compound in their own application.

*Compounds achieved the best possible Overall Rating of 1 when tested to NACE TMO 192-2012.

**Compounds achieved the best possible Overall Rating of 1 when tested to NACE TMO 192-2012 and 0000 when tested per ISO 23936-2 / NORSOK M-710, Edition 3 (Media 10% CO₂ & 90% CH₄), by an Independent Lab.

[†]Qualified to API 6A 20th Edition and ISO 10423:2009 according to Annex F Section 1.13.5.2 immersion testing for Material Class FF/HH 10% H₂S .

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