

## NORSOK Approved Compounds



The NORSOK standards have been developed by the Norwegian petroleum industry to ensure adequate safety, value adding and cost effectiveness for existing and future petroleum industry developments.

The intent of NORSOK M-710 standard and qualification process is to assure that non-metallic sealing material manufacturers have sufficient understanding and experience with the applicable materials to provide them with acceptable performance characteristics in the specified environment. The standard defines the requirements for critical sealing for permanent subsea use including; well completion, Xmas trees, control systems and valves.

As the accredited UK partner of Parker Hannifin Seals, Ceetak are pleased to announce the availability of special polymeric compounds approved to NORSOK M-710 standard specifically for the Oil and Gas industry.

The testing was conducted by Merl Ltd (a leading independent UK laboratory) and the technical requirements for the testing of the compounds was divided into 2 sections; the effects of sour gas ageing and rapid gas decompression (explosive decompression).

The positive results passed a range of compounds; Hydrogenated Nitriles (HNBR), Carboxylated Nitriles (XNBR), Fluorocarbons (FKM/FFKM), Aflas® (TFE/P), Perfluoroelastomers (FFKM), Polyetherketones (PEEK) and Polytetrafluoroethylenes (PTFE).

The qualification of these materials reinforces Parker Hannifin's position as a leading manufacturer of oilfield sealing materials. As their accredited UK partner, Ceetak offer sales, design and service support from our Aberdeen based facility.

Benefits to customer:-

- Wide range of accredited compounds for oilfield industry
- Technical design input from experienced application engineers with the added support of Parker's world class manufacturing facilities
- Local stock & support from Aberdeen facility



## Materials Approved for Rapid Gas Decompression Applications

Material	Parker code	Temp range	NORSOK M-710 RGD Gas Composition, 3:97, CO <sub>2</sub> :CH <sub>4</sub>	ISO 23939-2 RGD Gas Composition, 10:90, CO <sub>2</sub> :N <sub>2</sub>	Total GS EP PVV142 Gas Composition, 20:80, CO <sub>2</sub> :CH <sub>4</sub>
HNBR	KA183-85	-55 to 300°F		X	
HNBR	KB163-90	-25 to 300°F	X	X	
HNBR	N4007-95	-25 to 300°F	X	X	
FKM	VP104-85	+10 to 400°F		X	
FKM	VG109-90	-50 to 400°F		X	X
FKM	VG286-80	-50 to 400°F		X	
FKM	V1238-95	-15 to 400°F	X	X	
TFE/P AFLAS ®	V1041-85	+15 to 450°F	X	X	
TFE/P AFLAS ®	VP103-90	+25 to 450°F		X	
FKM	FF400-80	-40 to +525°F		X	X
FKM	FF582-90	+5 to 525°F		X	X

## Materials Approved for Sour Gas Service Applications

Material Type	Parker Material	Temp range	NORSOK M-710 H <sub>2</sub> S	ISO 23939-2 H <sub>2</sub> S		API 6A (FF/HH) H <sub>2</sub> S
				2%	10%	
HNBR	KA453-80	-25 to 300°F			X	
HNBR	KB285-85	-25 to 300°F			X	
HNBR	KA183-85	-55 to 300°F	X		X	
HNBR	KB163-90	-25 to 300°F	X		X	X
HNBR	KB292-95	-25 to 300°F			X	
HNBR	N4007-95	-25 to 300°F	X		X	X
FKM	V1289-75	-55 to 400°F	X			
FKM	VG286-80	-50 to 400°F				X
FKM	VP104-85	+10 to 400°F	X		X	
FKM	VG109-90	-50 to 400°F		X	X	X
FKM	VX165-90	-65 to 400°F		X		
FKM	VG300-90	-35 to 400°F		X		
FKM	VA275-95	-15 to 400°F		X		
FKM	V1238-95	-15 to 400°F		X		X
TFE/P AFLAS ®	V1041-85	+15 to 400°F	X			
TFE/P AFLAS ®	VP103-90	+25 to 450°F	X		X	
FFKM ULTRA ®	FF102-75	+5 to 525°F	X			
FFKM ULTRA ®	FF200-75	+5 to 608°F	X			
FFKM ULTRA ®	FF580-75	+5 to 525°F			X	X
FFKM ULTRA ®	FF400-80	-40 to 525°F			X	
FFKM ULTRA ®	FF582-90	+5 to 525°F			X	
FFKM ULTRA ®	FF202-90	+5 to 608°F	X			
FFKM ULTRA ®	V8588-90	+5 to 572°F	X		X	X



**Ceetak Ltd Head Office:**  
 Fraser Road, Priory Business Park,  
 Bedford, MK44 3WH  
 Tel: 01234 832200  
 Fax: 01234 832299

**Web: [www.ceetak.com](http://www.ceetak.com)**  
**Email: [info@ceetak.com](mailto:info@ceetak.com)**

**Ceetak Aberdeen:**  
 Block 1, Unit 13,  
 Souterhead Rd,  
 Altens Industrial Estate,  
 Aberdeen, AB12 3LF  
 Tel: 01224 249690  
 Fax: 01224 249691