



materials engineering research
laboratory

TEST CERTIFICATE

This document certifies that

T05 PTFE from

Trelleborg Sealing Solutions

passed the requirements of

**NORSOK M710 in respect of sour fluid resistance
in operating conditions to 160°C**

Test fluid: 2% hydrogen sulphide/hydrocarbon liquid/water
Test pressure: 100 bar (10 MPa)
Passed by : G J Morgan (B Sc. Hons.) *G.J. Morgan*
Date: 31/1/2006

MERL verify that material manufactured by Trelleborg Sealing Solutions from their thermoplastic T5 PTFE has been subjected to a series of sour fluid exposures to the conditions specified by NORSOK M710 and detailed below. The results indicate that the material will undergo a 50% change in tensile strength after 88 years at 160°C and considerably longer at lower temperatures.

Test Conditions

Ageing fluid	
Volume (%)	Composition
30	2% H ₂ S, 3% CO ₂ , 95% CH ₄
10	Distilled water (conductivity < 5 µS)
60	70% heptane, 20% cyclohexane, 10% toluene

The polymer samples were placed in the hydrocarbon phase for the exposures.

Test temperatures and exposure periods used in the NORSOK programme are shown in the table below; test pressure was 100 bar.

Exposure conditions	
Temperature (°C)	Sampling intervals (days)
200	21, 34, 42, 70
210	14, 21, 30, 42
220	7, 11, 21, 30

Summary

MATERIAL	NORSOK ACCEPTANCE CRITERIA		
	TENSILE	VISUAL	VOLUME
T5 PTFE	PASS	PASS	PASS