materials engineering research laboratory

TEST CERTIFICATE

This document certifies that

PTFE compound T24

from

Trelleborg Sealing Solutions

meets the requirements of

NORSOK M-710 in respect of sour fluid resistance

Test fluid:	2% hydrogen sulphide/hydrocarbon oil/water
Test pressure:	100 bar (10 MPa)
Passed by :	Barry Thomson
Date:	13th March 2012

MATERIALS ENGINEERING RESEARCH LABORATORY LTD
Wilbury Way, Hitchin, Hertfordshire, SG4 0TW, United Kingdom
T: +44 (0) 1462 427850 F: +44 (0) 1462 427851
enquiries@merl-ltd.co.uk www.merl-ltd.co.uk

MERL verify that specimens of the Trelleborg Sealing Solutions PTFE compound T24 have been subjected to a series of sour multi-phase fluid exposures at three elevated temperatures, with subsequent room temperature tensile testing to evaluate performance.

Test Conditions

Exposure fluid composition and distribution

Volume (%)	Composition
30	2/3/95 mol% $H_2S/CO_2/CH_4$
10	Distilled water
60	70% heptane, 20% cyclohexane, 10% toluene

The T24 testpieces were placed in the hydrocarbon oil phase for the exposure tests.

Test temperatures and exposure periods used in the NORSOK M-710 programme are shown in the table below; test pressure was 100 bar.

Exposure test conditions

Temperature (°C)	Sampling intervals (days)
200	7, 12, 27, 48
210	5, 10, 22, 41
220	5, 10, 21, 35

Summary for T24

TYPE	Swell[1]	Tensile modulus[2]	Tensile strength[2]	Elongation at break[2]	NORSOK acceptable
PTFE	PASS	PASS	PASS	PASS	YES

[1] <5%
[2] changes within ±50% range, from as-received level

As anticipated, PTFE compound T24 does not show evidence of being chemically altered by interaction with hydrogen sulphide at the high exposure temperatures employed in the test programme. Swelling in the hydrocarbon oil is low (<5%) and is the origin of the modest changes in tensile property levels.

PTFE compound T24 meets the requirements of the NORSOK M-710 standard for sour fluid exposure.