

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>UKAS TESTING 0067</p> <p>Accredited to ISO/IEC 17025:2017</p>	<p>Smithers MSE Limited</p> <p>Issue No: 052 Issue date: 04 March 2021</p>	
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<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PLASTICS, RUBBER and COMPOSITE MATERIALS	<p><u>Chemical Analysis</u></p> <p>Comparison of Molecular weight distribution by GPC</p> <p>Identification of rubbers by infrared spectroscopy</p> <p>Determination of solvent extract</p>	<p>In-House procedures numbered: RT011.71.01 HTGPC of PEEK RT011.71.05 GPC with THF or Chloroform RT011.71.06 HTGPC of Polyolefins RT011.71.07 GPC with HFIP</p> <p>In house method RT011.48 based on BS ISO 4650:2012</p> <p>In house method RT011.42 based on ISO 1407:2011 (equivalent to BS 7164:Part 3:1992 (withdrawn))</p>
FOOD CONTACT TESTS	<p>Overall migration into aqueous simulants</p> <p>Overall migration into iso-octane and ethanol</p> <p>Overall migration (levels of extractables) from elastomeric materials</p>	<p>In house method RT011.49 based on BS EN 1186-3:2002 (total immersion)</p> <p>In house method RT011.52 based on BS EN 1186-9:2002 (article filling)</p> <p>In house method RT011.38 based on BS EN 1186-14:2002</p> <p>In house method RT011.27 based on FDA Regulations Chapter 21, Section 177.2600 for Repeat use rubber articles</p>



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PLASTICS, RUBBER and COMPOSITE MATERIALS	<u>Mechanical and Physical Tests</u>	
	Density	BS ISO 2781:2018 BS EN ISO 1183-1:2019:Method A
	Hardness	BS ISO 48-2:2018
	Indentation hardness	BS ISO 48-4:2018 BS EN ISO 868:2003
	Tensile and compressive properties (forces up to ± 200 kN)	BS ISO 37:2017 (Dumb-bells only) BS ISO 7743:2017
	Tensile strength, elongation and elastic modulus (forces up to ± 200 kN)	BS EN ISO 527-1: 2019 BS EN ISO 527-2: 2012 BS EN ISO 527-3: 2018
	Flexural properties	BS EN ISO 178:2019
	Izod impact strength	BS EN ISO 180:2019
	Charpy impact strength	BS EN ISO 179-1:2010
	Falling weight impact resistance	BS 2782:Part 3:Method 352D:1979 (withdrawn)
	Impact brittleness	BS ISO 812:2017
	Stress relaxation	BS ISO 3384-1:2019
	Low temperature crystallization effects	BS ISO 3387:2020
	Low temperature stiffness (Gehman method)	BS ISO 1432:2013
	Standard atmospheres	BS ISO 23529:2016
	Elmendorf tear test	BS EN ISO 6383-2:2004
Modulus in shear (Quad Shear)	BS ISO 1827:2016	
Tear strength	BS ISO 34-1:2015	
Compression set	BS ISO 815-1:2019 BS ISO 815-2:2019: Method 1 only	



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PLASTICS, RUBBER and COMPOSITE MATERIALS (cont'd)	<u>Mechanical and Physical Tests</u> (cont'd) Rebound resilience (Lupke) temperature range -10°C to 50°C Abrasion resistance	BS ISO 4662 2017 BS ISO 4649:2017 (excluding 20 N load)
ENVIRONMENTAL TESTING	Resistance to ozone cracking (static) Heat resistance	BS ISO 1431-1:2012 Excluding clause 11 BS ISO 188:2011
THERMAL PROPERTIES and ANALYSIS	<u>Differential Scanning Calorimetry</u> General Principles Glass transition temperature (T _g) Temperature and Enthalpy of melting and crystallization	BS ISO 11357-1:2016 BS EN ISO 11357-2:2020 BS ISO 11357-3:2018
CHEMICAL RESISTANCE	Effect of liquids Fluid Contamination	BS ISO 1817:2015 MIL-STD-810G:CN1 Method 504.1 2008 MIL-STD-810H: Method 504.3 2019 DEF STAN 00-035: Part 3 Iss 5:Chapter 4-04 Test CN4 2017 BS 3G100:Part 2:Section 3:1991 Sub-section 3.12 RTCA/DO-160F:2007 RTCA/DO-160G:2010
DIMENSIONAL MEASUREMENTS	Thickness	BS 2782:Part 6:Method 630A:1994 ISO 4593:1993



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PRODUCT TESTING		
Elastomeric seals for pipe joints	Physical properties	BS EN 681-1:1996 BS EN 681-2, -3 and -4:2000 BS EN 682:2002
Cast acrylic sheet for baths and shower trays	Tensile Testing	BS EN 263:2008
Tyres	Load/speed performance test	ECE Regulation 30 ECE Regulation 54 ECE Regulation 75
Retread car and commercial vehicle tyres	Load/speed performance test	ECE Regulation 108 ECE Regulation 109
END		