



# MDS01 Data Sheet

## Zero Halogen LSF Polymeric Material

### Description

A flame retardant, low smoke and fume (LSF), zero halogen, phosphorus-free thermoplastic.

### Technical Properties

Primary Properties	Test Method	Unit	Nominal Value
Tensile Strength	IEC 60811-1-1	Mpa	11
Elongation at break	IEC 60811-1-1	%	180
Oxygen Index	ISO 4589-2	%	35
Density	ASTM D-792	g/cc	1.46
Mooney Viscosity (1+4 Mins)	ASTM D-1646		37

Mechanical Properties	Test Method	Unit	Nominal Value
Tear Strength	BS 6469:99.1	N/mm	6.5
Tensile Strength after 7 days @ 100°C	IEC 60811-1-2	Mpa	12.5
Variation		%	+12
Elongation at break after 7 days @ 100°C	IEC 60811-1-2	%	148
Variation		%	-18

Thermomechanical Properties	Test Method	Unit	Nominal Value
Hot pressure at 80°C	IEC 60811-3-1	%	25
Hot deformation at 90°C	BS 6469:99.1	%	5
Cold elongation at -25°C	IEC 60811-1-4	%	96
Cold impact at -25°C	IEC 60811-1-4	%	Pass

Fire and Smoke Test Properties	Test Method	Unit	Nominal Value
Flammability temperature index	ISO 4589-3	°C	255
Halogen acid gas evolution	IEC 60754-1	%	zero
Corrosivity of gases	IEC 60754-2		
pH			6.3
Conductivity		µS/cm	13
Smoke density-Flaming mode	ASTM E-662	Ds max	57
Time to maximum		minutes	7
Smoke density-Non-flaming mode	ASTM E-662	Ds max	278
Time to maximum		minutes	12
Toxicity index	NES 713		1.5

Oil Resistance Properties			Tensile Strength	Variation	Elongation at Break	Variation	Volume Swell
Medium	Temperature	Duration	(Mpa)	(%)	(%)	(%)	(%)
ASTM 2	23°C	7 days	10.5	-5	170	-6	4
ASTM 2	70°C	4 hours	10	-9	200	+11	1
SAE 20	70°C	4 hours	8.3	-26	210	+17	n/a
Diesel	23°C	7 days	9.5	-14	160	-11	20

continued overleaf:

<b>Electrical Properties</b>	<b>Test Method</b>	<b>Unit</b>	<b>Nominal Value</b>
Dielectric constant at 50Hz	ASTM D-150		4.3
Dissipation factor at 50Hz	ASTM D-150		0.015
Insulation resistance at 20°C	BS 6469:99.2		
Initial value		ohm.cm	$6 \times 10^{14}$
After 12 hours immersion in water.		ohm.cm	$6 \times 10^{14}$

<b>Other Properties</b>	<b>Test Method</b>	<b>Unit</b>	<b>Nominal Value</b>
Hardness	ASTM D-2240	Shore D	54
Ozone Resistance	ASTM D-470		Pass

These values are indicative only and Ellis Patents reserve the right to substitute alternative suitable materials