



MATERIAL PROPERTY TEST REPORT

Test Standard: Nissan NES M0086

Material Type: Expanded Polypropylene Foam HB Series

Testing Completed & Certified by: MGA Labs. Greer, SC, USA (A2LA Cert. 850.02)

NES M0086

Physical Property Data Density Spec Density Tested	(g/cm³)		Water Absorption Absorption Rate Vs Area Absorption Rate Vs Volume		
	0.02 - 0.09			(g/100cm ²)	0.35
	0.09			(g/100cm ³)	0.5
Hardness Strength @ 10% Compression Heat Aged 22hrs @ 100°C % Change			Bending Strength		
	(kPa)	567		(kPa)	86.70
	(kPa)	532		Dimensional Change - Heat Aging	
	%	-6.17	% Change	%	-0.35%
Tensile & Elongation Tensile Strength as Received Elongation as Received Tensile Heat Aged 22hrs @ 100°C % Change Elongation Heat Aged 22hrs @ 100°C % Change			Wet Heat Aging Initial Hardness (Force @ 10%) Initial Hardness (Strength @ 10%) Final Hardness (Force @ 10%) Final Hardness (Strength @ 10%) Change in Hardness		
	(kPa)	924		(N)	2830
	%	11.5		(kPa)	307
	(kPa)	912		(N)	3270
	%	-1.3		(kPa)	360
	%	11.3		%	17.5
Flammability NES M0094 Burn Rate Max 100 mm/min +3 Sigma + 3 Sigma Heat Aged 168hrs @ 80oC + 3 Sigma			Fogging Weight of Condensate + 3 Sigma		
	(mm/min)	38.3		(mg)	0.4
		43.6			0.8
		39.3		High Temperature NES M0131	
43.1		4hrs @ 90°C % change	%	0.69	
Chemical Resistance As Received (Gasoline, Diesel Fuel, Kerosene, Engine Oil, Acid Solution, Wax, Wind Shield Washer Fluid, Detergent, Undercoating)	No abnormalities such as peeling, swelling or poor fusion between beads	Thermal Cycle 62090NDS00			
		4hrs @ 90oC Volume	(cm ³)	224.27	
		1.5hrs @ -40oC Volume	(cm ³)	225.36	
Chemical Resistance 24hrs @ 90°C (Gasoline, Diesel Fuel, Kerosene, Engine Oil, Acid Solution, Wax, Wind Shield Washer Fluid, Detergent,	No abnormalities such as peeling, swelling or poor fusion between beads	Volume Change		%	0.49
		Humidity 62090NDS00			
		Pre-test	(cm ³)	226.14	
		48hrs @ 50°C & 95% RH	(cm ³)	229.73	
		Volume Change	%	1.59	
		Water Tightness 62090NDS00 24hrs Submersion / Water		(g/m3)	0.0016

This report certifies that the above material meets the requirements for the Production Part Approval Process per the Nissan Engineering Specification NES M0086

William A. Pate

Date 5/18/2015

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