



**Hanwha**

Advanced Materials America

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**MATERIAL PROPERTY TEST REPORT**

Test Standard: General Motors GMW16214, Type 4 (2015)  
Material Type: Expanded Polypropylene Foam HB Series  
Testing Completed & Certified by: MGA Labs. Greer, SC, USA (A2LA Cert. 850.02)  
Product Type: HB Series

PROPERTY/TEST	PRINT** SPECIFICATION	SPECIMEN RESULTS	TEST METHOD
Density, g/l or kg/m <sup>3</sup> (50 g/l ±10%),	45-55	48	ISO 845
Tensile Strength KPa, Min	400	677	ISO 1926
Tensile Elongation %, Min	10	13	ISO 1926
Compression, Stress 50% Strain, KPa, Min	300	367	ISO 844
Compression Set 22 h at 50% Comp, KPa, Max	45	31	ISO 1856
Flammability As Received	100	47	FMVSS-302 (per GMW3232)
Heat Aged, Max (mm/min)	100	53	
Resistance to Odor Rating	Rating >6	Rating = 9	GMW3205-B2
Emission Analysis VOC Value; micro-g/g, Target ≤	100	26	GMW15634
Fog Value; micro-g/, Target ≤	250	33	
Fogging Mg/Max	≤ 2	0.3	GMW3235-B-Y1-T1

This certifies that the above material meets the requirements for the Production Part Approval Process per the General Motors Engineering Specification GMW16214 for Type 4 for 2015

William A. Pate

Date 4/23/2015

William Pate, Technical Service Manager  
Hanwha Advanced Materials America LLC