



# MOLDED POLYSTYRENE

## COLD CHAIN | PROTECTIVE PACKAGING | OEM COMPONENTS

As the nation's largest molded polystyrene manufacturer in North America, Atlas Molded Products is able to provide the highest-quality cold chain packaging, protective packaging, and OEM components when and where you need them. With facilities located nationwide, our experienced and dedicated staff will work with you to select the most appropriate molded polystyrene solution to meet your needs. Our products are available in a variety of densities to provide the necessary structural integrity, thermal resistance and cost effectiveness.

### PHYSICAL PROPERTIES<sup>1</sup>

PROPERTY	ASTM TEST METHOD	UNITS	75	100	125	150	200	250	300
Nominal Density	D1622	lb/ft <sup>3</sup> (kg/m <sup>3</sup> )	0.75 (12)	1.00 (16)	1.25 (20)	1.50 (24)	2.00 (32)	2.50 (40)	3.00 (48)
Density (min)	D1622	lb/ft <sup>3</sup> (kg/m <sup>3</sup> )	0.70 (12)	0.90 (15)	1.15 (18)	1.35 (22)	1.80 (29)	2.40 (38)	3.00 (48)
ASTM Classification	C578	-	Type XI	Type I	Type VIII	Type II	Type IX	Type XIV	Type XV
R-value per inch at 75°F	C518	°F·ft <sup>2</sup> ·h/Btu (°K·m <sup>2</sup> /W)	3.2 (0.57)	3.9 (0.68)	3.9 (0.69)	4.2 (0.73)	4.4 (0.77)	4.4 (0.77)	4.5 (0.78)
R-value per inch at 40°F	C518	°F·ft <sup>2</sup> ·h/Btu (°K·m <sup>2</sup> /W)	3.4 (0.60)	4.2 (0.73)	4.3 (0.75)	4.6 (0.80)	4.8 (0.84)	4.8 (0.84)	4.9 (0.86)
R-value per inch at 25°F	C518	°F·ft <sup>2</sup> ·h/Btu (°K·m <sup>2</sup> /W)	3.6 (0.63)	4.4 (0.77)	4.5 (0.80)	4.8 (0.84)	5.0 (0.88)	5.0 (0.88)	5.1 (0.90)
K-value (Thermal Conductivity) at 75°F	C518	Btu·in/°F·ft <sup>2</sup> ·h (W/°K·m)	0.31 (0.045)	0.26 (0.037)	0.26 (0.037)	0.24 (0.035)	0.23 (0.033)	0.23 (0.033)	0.22 (0.032)
K-value (Thermal Conductivity) at 40°F	C518	Btu·in/°F·ft <sup>2</sup> ·h (W/°K·m)	0.29 (0.042)	0.24 (0.035)	0.24 (0.034)	0.22 (0.032)	0.21 (0.030)	0.21 (0.030)	0.21 (0.030)
K-value (Thermal Conductivity) at 25°F	C518	Btu·in/°F·ft <sup>2</sup> ·h (W/°K·m)	0.28 (0.040)	0.23 (0.033)	0.22 (0.032)	0.21 (0.030)	0.20 (0.029)	0.20 (0.029)	0.20 (0.028)
Compressive Resistance @ 1% Deformation	D1621	psi (kPa)	2.2 (15)	3.6 (25)	5.8 (40)	7.3 (50)	10.9 (75)	15.0 (103)	18.6 (128)
Compressive Resistance @ 5% Deformation <sup>2</sup>	D1621	psi (kPa)	4.0 (28)	8.0 (55)	11.7 (81)	13.5 (93)	22.5 (155)	35.0 (241)	43.5 (300)
Compressive Resistance @ 10% Deformation <sup>2</sup>	D1621	psi (kPa)	5.0 (35)	10.0 (69)	13.0 (90)	15.0 (104)	25.0 (173)	40.0 (276)	60.0 (414)

See the following page for additional physical properties.

## PHYSICAL PROPERTIES<sup>1</sup> (CONT)

PROPERTY	ASTM TEST METHOD	UNITS	75	100	125	150	200	250	300
Maximum Use Temperature	-	°F °C	165 (74)	165 (74)	165 (74)	165 (74)	165 (74)	165 (74)	165 (74)
Coefficient of Thermal Expansion	-	x10 <sup>-6</sup> /°F x10 <sup>-6</sup> /°C	35 (63)	35 (63)	35 (63)	35 (63)	35 (63)	35 (63)	35 (63)
Elastic Modulus	D1621	psi (kPa)	220 (1,500)	360 (2,500)	580 (4,000)	730 (5,000)	1,090 (7,500)	1,500 (10,300)	1,860 (12,800)
Tensile Strength <sup>2</sup>	C297	psi (kPa)	10 (69)	20 (138)	25 (173)	30 (208)	40 (276)	50 (345)	60 (414)
Flexural Strength <sup>2</sup>	C203	psi (kPa)	10 (69)	25 (173)	30 (208)	35 (242)	50 (345)	60 (414)	75 (517)
Shear Strength <sup>2</sup>	C273	psi (kPa)	7 (48)	12 (83)	15.5 (107)	18 (124)	24 (166)	30 (208)	35 (242)
Water Vapor Permeance per inch	E96	perm	5.0	5.0	3.5	3.5	2.5	2.5	2.5
Water Absorption <sup>3</sup>	C272	volume %	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Mold & Fungus Resistance	G21/D3273/ C1338	-	No growth during 4-week exposure						
Surface Burning <sup>4</sup>	E84	-	Flame Spread < 25, Smoke Developed < 450						
Flammability of Plastics <sup>4</sup>	UL94	-	HF-1 Rating						

<sup>1</sup> Typical physical properties for Atlas Molded Polystyrene produced with limited recycled content.

<sup>2</sup> A factor of safety of 3 is recommended for long term loads.

<sup>3</sup> ASTM C272 24 hour immersion followed by 24 hour storage in 75°F/50%RH air.

<sup>4</sup> Applies to fire retardant products only.

## SUSTAINABILITY

Atlas is committed to sustainability and producing high-quality products through environmentally responsible manufacturing, which is why all of our molded polystyrene products do not contain CFCs, HFCs or formaldehyde, and have a low Global Warming Potential (GWP) and zero ozone depletion potential (ODP). Detailed resources concerning Conflict Materials, EPDs, Ingredients, Prop 65, REACH, RoHS, VOCs, and other topics are available on our website.

FOR MORE INFORMATION AND PRODUCTS VISIT [ATLASMOLDEDPRODUCTS.COM](http://ATLASMOLDEDPRODUCTS.COM)

**GREATER COVERAGE  
GREATER AVAILABILITY**



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