



Monarch[®]

2045

FINE, CLOSED CELL, HIGH DENSITY, NEOPRENE BASED FOAM IN BUN FORM



Armacell LLC (Spencer, WV Plant) manufactures Monarch 2045, a black, closed cell, $19 \pm 4 \text{ lb/ft}^3$ ($304 \pm 64 \text{ kg/m}^3$) density neoprene based rubber product.

- Meets all the requirements of ASTM D 1056-14 2A5/2C5.
- Manufactured with non-staining oils and anti-oxidants.
- Does not incorporate a flame retardant but meets the requirements of FMVSS-302 at thicknesses of 0.1875" (3/16") (4.76 mm) and higher.
- 2045 is listed as an approved source on: Penn DOT Bulletin 15 Section 1085.2 (m).

- Firm, high density neoprene based rubber product
- ASTM D 1056-14 2A5/2C5 grade closed cell expanded rubber
- Fine cell – manufactured in blocks (buns)
- 2045 is listed as an approved source on Penn DOT Bulletin 15 Section 1085.2 (m).



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Engineered For Success.

Bun Size Information:

Product	Bun Size (in)			Bun Size (mm)			Color
	W	L	T	W	L	T	
2045	40	48	1	1016	1219	25.4	Black

Automotive and Industrial Specifications:

Source	Specification	Armacell (Monarch®) 2045	Comments
ASTM	D 1056-14	2A5/2C5	Additional suffixes such as B3 & F1 can be added
ASTM	D 6576-13	Type II Grade B Condition Firm	Formerly MIL R 6130-C
Caterpillar	1E0720F	Firm	Exceptions: None
Federal	FMVSS-302	Pass at thicknesses of 0.1875" (3/16") (4.76 mm) and higher	Flame resistance (horizontal burn rate). See note 1
Ford	WSK-M2D419-A	Type 6	See note 2
GM	GMW 15473	Class I Type VI	CD tested at 50% deflection. See note 3
Military	ASTM D 6576-13	Type II Grade B Condition Firm	Formerly MIL R 6130-C
Penn DOT	Bulletin 15	Section 1085.2 (m)	On approved source list
SAE	SAE J369	Pass at thicknesses of 0.1875" (3/16") (4.76 mm) and higher	Flame resistance (horizontal burn rate). Similar to FMVSS-302. See note 1

Note 1: A number of horizontal burn tests can also be listed (GM 6090, BMW, Volvo, etc.). Request additional information.

Note 2: For all Ford WSK-M2D419-A callouts, request full information for each product due to some possible exceptions (example: non-standard staining requirements).

Note 3: For all GMW 15473 callouts, Armacell (Monarch®) certifies to the "basic" requirements only. Request additional information for each product. Providing application (interior, exterior or under-hood) and part thickness is helpful.

Data Sheet:

Physical Properties	Unit	Test Method	Typical Result
Density	lb/ft ³	ASTM D 1056	19 ± 4
	kg/m ³	ASTM D 1056	304 ± 64
Hardness, Durometer Shore 00		ASTM D 2240	70 ± 10
Tensile Strength	psi	ASTM D 412 (Die A)	200
	kPa	ASTM D 412 (Die A)	1379
Elongation	%	ASTM D 412 (Die A)	200
Tear Strength	lb/in	ASTM D 624 (Die C)	35
	kN/m	ASTM D 624 (Die C)	6.1
Compression Deflection (25%)	psi	ASTM D 1056	21 ± 4
	kPa	ASTM D 1056	145 ± 28
Compression Set (50%)	%	ASTM D 1056	Room Temperature: 25 max.
Resilience	%	ASTM D 2632	30
Service Temperature (1)			
Low	°F (°C)	ASTM D 1056	-40 (-40)
High Continuous	°F (°C)		150 (65.5)
High Intermittent	°F (°C)		200 (93.3)
Water Absorption			
Maximum weight change	%	ASTM D 1056	5
Fluid Immersion [7 days @ 23°C [73.4 °F]]			
ASTM Ref. Fuel B, Weight Change	%	ASTM D 1056	150 max.
Accelerated Aging [7 days at 70 °C [158 °F]]			
Flexibility (180° bend without cracking)			Pass
Appearance Change			None
Change in Compression Deflect	%	ASTM D 1056	± 30
Combustion Characteristics (2)	Burn Rate	FMVSS-302	Pass at thicknesses of 0.1875" (3/16") (4.76 mm) and higher

(1) This recommendation is based on polymer type only. For specific application requirements please contact technical service department.

(2) Flammability - This data refers to typical performance in the specific test indicated. This data should not be construed to imply the behavior of material in other fire conditions.

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