

AUTOMOTIVE



Monarch® #3071

- ASTM D 1056-07 2A1 grade material
- Pure EPDM product
- Incorporates a biocide (fungus resistant)
- Fine cell – manufactured in blocks (buns)
- ASTM D 6576-07 Type II, Grades B & C, Condition Soft

Monarch®

General Information

Armacell Monarch® #3071: Armacell LLC (Spencer, WV Plant) manufactures a black, pure EPDM, $4 \pm 1 \text{ lb./ft}^3$ ($64 \pm 16 \text{ kg/m}^3$) density, closed cell sponge rubber product #3071, that meets all the requirements of ASTM D 1056-07 2A1 and SAE J18 APR2002 2A1. #3071 is manufactured with non-staining oils and anti-oxidants. #3071 does not incorporate a flame retardant but meets FMVSS-302 at thicknesses of 3/16" (0.1875") (4.76 mm) and higher. #3071 has excellent resistance to ozone and elevated temperatures. #3071 incorporates a biostatic agent and meets the requirements of FORD / Visteon biocide specifications VEF 4 VH-80A100-AA & ES8-G13-19A672-AA. #3071 has also been tested to ASTM Method G21-96 (2002).

Bun Size Information

Product	Bun Size (Inches)			Bun Size (mm)			Color
	W	L	T	W	L	T	
3071	48	80	2	1219	2032	50.8	Black
3071	54	70	2	1372	1778	50.8	Black

Automotive and Industrial Specifications

The following is a list of automotive and industrial specifications that Armacell Monarch® #3071 has been tested to or can meet. Additional specifications are listed that have a few exceptions. Feel free to suggest other automotive, military or industrial specifications, and a full review will be made.

Source	Specification	Armacell Monarch® #3071	Comments
ASTM	ASTM D 1056-07	2A1	Additional (optional) suffixes can be added
ASTM	ASTM G 21-09	Pass, rating 0	Fungus resistance test method
ASTM	ASTM D 1171	Pass, no cracking, rating 0	Ozone resistance test method
ASTM	ASTM D 6576-07	Type II, Grades B & C, Condition Soft	Formerly MILR6130-C
Chrysler	Chrysler MSZ-75 J18	2A1	Additional (optional) suffixes can be added
Chrysler	Chrysler MS JP9-4	Meets at thicknesses of 3/16" (0.1875") (4.76 mm) & higher	Flame resistance (horizontal burn rate)
FORD	FORD WSK M2D 419-A	Type 2	See note 2
FORD	FORD WSF-4VH-19A672-AA	Pass	Biocide performance specification
FORD	FORD ES-8G13-19A672-AA	Pass	Biocide performance specification
Federal	FMVSS-302	Meets at thicknesses of 3/16" (0.1875") (4.76 mm) & higher	Flame resistance (horizontal burn rate). See note 3
GM	GM 6086-M	Type II	CD tested at 50% deflection. See note 1
GM	GM 6090-M	(B4A) Meets at thicknesses of 3/16" (0.1875") (4.76 mm) and higher	Flame resistance tested per GM 9070-P (horizontal burn rate)
GM	GMN11106	Type II	CD tested at 50% deflection. See note 1
GM	GMW15473	Class I Type IV	CD tested at 50% deflection. See note 1
Hyundai	Hyundai MS260-13	Classification ER	Additional (optional) suffixes can be added
ISO	ISO 6916	2A1	Exception to compression set
Military	ASTM D 6576-07	Type II, Grades B & C, Condition Soft	Formerly MILR6130-C
SAE	SAE J 18 APR2002	2A1	Additional (optional) suffixes can be added
SAE	SAE J 369	Meets at thicknesses of 3/16" (0.1875") (4.76 mm) & higher	Flame resistance (horizontal burn rate)
SAE	SAE J 1351	Rating 2	Odor specification
Toyota	TSM 1501G	2A1	Exception to compression set
Toyota	TSM 0500G	Meets at thicknesses of 3/16" (0.1875") (4.76 mm) & higher	Flame resistance (horizontal burn rate)
Visteon	VEF 4VH-80A100-AA	Pass	Biocide performance specification

Note 1: For all GM 6086-M, GMN11106 & GMW15473 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.

Note 2: For all FORD WSK M2D 419-A callouts, request full information for each product due to some exceptions with non-tested staining requirements.

Note 3: A number of horizontal burn tests can also be listed (GM 6090, BMW, Volvo, etc.). Request additional information.



Polymer Base: **Pure EPDM**

F-03071 (Black) (Biocide Additive) Closed Cell Expanded Rubber

Physical Properties	Unit	Test Method	Typical Results
Density	kg/m ³	ASTM D 1056	64 ± 16
	lb/ft ³	ASTM D 1056	4 ± 1
Hardness, Durometer Shore 00		ASTM D 2240	35 ± 10
Compression Deflection (25%)	kPa	ASTM D 1056	24 ± 10
	psi	ASTM D 1056	3.5 ± 1.5
Compression Set (Room temp)	%	ASTM D 1056	≤ 50
Tensile Strength	kPa	ASTM D 412 (Die A)	310
	psi	ASTM D 412 (Die A)	45
Tear Strength	kN/m	ASTM D 624 (Die C)	1.2
	lb/in	ASTM D 624 (Die C)	6.8
Elongation	%	ASTM D 412 (Die A)	175
Resilience	%	ASTM D 2632	55
Service Temperature			
Low	°F (°C)	ASTM D 746	-70°F (-56.7°C)
High Continuous	°F (°C)	ASTM D 746	220°F (104.4°C)
High Intermittent	°F (°C)	ASTM D 746	250°F (121.1°C)
Water Absorption			
Maximum Weight Change	%	ASTM D 1056	≤ 10
Fluid Immersion (7 days at 23°C [73.4°F])			
ASTM Ref. Fuel B, Weight Change (%)	%	ASTM D 1056	Not Applicable
Accelerated Aging (7 days at 70°C [158°F])			
Flexibility (180° bend without cracking)		ASTM D 1056	Pass
Appearance change		ASTM D 1056	None
Change in Compression Deflection	%	ASTM D 1056	± 30
Combustion Characteristics		Thicknesses	Comments
FMVSS-302		0.188" (4.76 mm) & higher	Pass

ASTM D 1056 designation: 2A1
 SAE J 18 APR2002 designation: 2A1
 ASTM D 6576: Type II, Grades B & C, Condition Soft
 EPDM = (ethylene-propylene-diene-methylene)

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