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Marco Compound # E1092

70 Durometer, Black, Low Temp. UL JOHX2 Approved EPDM
Technical Datasheet

Compound E1092 is a 70 durometer black colored high strength EPDM rubber formulated specifically for use in alkalis and acids, with the exception of concentrated sulfuric and nitric acid. It exhibits good resistance to heat and compression set. This, coupled with its good low temperature flexibility, allows for its use over a wide temperature range. Compound E1092 is also very resistant to polar materials such as water, phosphate esters, ketones and alcohols. The phosphate ester resistance makes it very useful for automotive brake fluid applications. Further, it demonstrates excellent resistance to weathering and steam. It is also a peroxide cured compound.

Compound E1092 is UL approved per JOHX2 for water, steam, air and inert gasses. This compound is also suitable for use in anhydrous ammonia.

Cure System:

- Peroxide

Temperature Range

-65 to 300° F

This Compound is RoHS Compliant

Original Properties						
Modulus @ 100% Elongation		371	psi		2.6	MPa
Tensile Strength		2,478	psi		17.1	MPa
Ultimate Elongation		351	%			
Hardness, Shore A		72	Durometer			
Specific Gravity		1.10	grams/cc			
Brittleness Temperature	<	-89	°F	<	-67	°C
TR-10 Temperature		-48	°F		-44	°C
Tear Resistance, Die B		207	ppi		36.3	kN/m
Tear Resistance, Die C		210	ppi		36.8	kN/m

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This compound will meet or exceed the specifications listed and has the following physical properties:

ASTM D2000	2 AA 720 A13 C12 EA14 F17 EA14 3 AA 720 B13 B33 C12 F17 EA14 4 AA 720 A13 B13 B33 C12 F17 EA14 5 AA 720 A13 B13 B33 C12 F17 EA14
	2 BA 720 C12 F17 3 BA 720 A14 B13 C12 F17 F19 4 BA 720 A14 C12 F17 5 BA 720 F17 F19 C12 6 BA 720 B13 C12
	3 CA 710 A25 B44 B35 EA14 C32 F17 F18 F19 G11 G21 4 CA 720 A25 B35 EA14 C32 F17 F18 F19 G11 G21 5 CA 720 A25 B35 EA14 C32 F18 G11 G21
	2 DA 720 A26 B36 C32 EA14 F19 G11 G21 3 DA 720 A26 C32 EA14 F19 G11 G21

NITRIC ACID : AGED 70 hrs @ RT (70°F, 23°C)	
Change - Tensile Strength	- 9.8 %
Change - Elongation	+ 11.4 %
Change - Hardness, Shore A	- 3
Change - Volume	+ 8.1 %

SODIUM HYDROXIDE : AGED 70 hrs @ 212°F (100°C)	
Change - Tensile Strength	+ 6.2 %
Change - Elongation	+ 0.3 %
Change - Hardness, Shore A	- 1
Change - Volume	+ 0.1 %

TR-10 : ASTM D1329 (10% Retraction @ °F)	
Temperature	- 48.0 °F

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Compression Set

Solid: 22 hrs @ 158°F (70°C)	11.2 %
Solid: 22 hrs @ 212°F (100°C)	10.2 %
Solid: 22 hrs @ 257°F (125°C)	13.3 %
Solid: 22 hrs @ 302°F (150°C)	24.2 %
Solid: 70 hrs @ 212°F (100°C)	15.2 %
Plied: 22 hrs @ 158°F (70°C)	12.2 %
Plied: 22 hrs @ 212°F (100°C)	12.1 %
Plied: 22 hrs @ 257°F (125°C)	18.5 %
Plied: 22 hrs @ 302°F (150°C)	44.0 %
Plied: 70 hrs @ 212°F (100°C)	17.4 %

HEAT AGED: 70 hrs @ 158°F (70°C)

Change - Tensile Strength	+ 3.0 %
Change - Elongation	+ 2.8 %
Change - Hardness, Shore A	0

HEAT AGED: 70 hrs @ 212°F (100°C)

Change - Tensile Strength	- 6.6 %
Change - Elongation	- 7.1 %
Change - Hardness, Shore A	0

HEAT AGED: 70 hrs @ 257°F (125°C)

Change - Tensile Strength	+ 3.6 %
Change - Elongation	+ 5.4 %
Change - Hardness, Shore A	+ 1

HEAT AGED: 70 hrs @ 302°F (150°C)

Change - Tensile Strength	+ 4.1 %
Change - Elongation	- 5.7 %
Change - Hardness, Shore A	+ 4

HEAT AGED: 70 hrs @ 257°F (125°C) Test Tube Method

Change - Tensile Strength	+ 3.6 %
Change - Elongation	- 5.4 %
Change - Hardness, Shore A	+ 1

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HEAT AGED: 70 hrs @ 302°F (150°C) Test Tube Method	
Change - Tensile Strength	+ 4.1 %
Change - Elongation	- 5.7 %
Change - Hardness, Shore A	+ 4

DISTILLED WATER AGED: 70 hrs @ 212°F (100°C)	
Change - Tensile Strength	+ 15.1 %
Change - Elongation	+ 1.7 %
Change - Hardness, Shore A	0
Change - Volume	+ 0.3 %

DOT #3 BRAKE FLUID : AGED 300 hrs @ 248°C (120°F)	
Change - Hardness, Shore A	- 3
Change - Volume	- 1.0 %

DOT #3 BRAKE FLUID : AGED 70 hrs @ 248°F (120°C)	
Change - Tensile Strength	+ 4.8 %
Change - Elongation	+ 0.9 %
Change - Hardness, Shore A	- 2
Change - Volume	+ 0.3 %

DOT #4 BRAKE FLUID : AGED 70 hrs @ 248°F (120°C)	
Change - Tensile Strength	+ 0.4 %
Change - Elongation	- 4.8 %
Change - Hardness, Shore A	- 3
Change - Volume	+ 2.1 %

DOT #4 BRAKE FLUID : AGED 300 hrs @ 248°C (120°F)	
Change - Hardness, Shore A	- 2
Change - Volume	- 1.3 %

DOT #5 BRAKE FLUID : AGED 70 HRS @ 248°F (120°C)	
Change - Tensile Strength	- 4.6 %
Change - Elongation	- 4.8 %
Change - Hardness, Shore A	- 3
Change - Volume	+ 2.1 %

DOT #5 BRAKE FLUID : AGED 300 hrs @ 248°C (120°F)	
Change - Hardness, Shore A	- 3
Change - Volume	+ 1.0 %

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SAE COMPATABILITY FLUID : 70 hrs @ 248°F (120°C)	
Change - Tensile Strength	+ 6.1 %
Change - Elongation	- 0.6 %
Change - Hardness, Shore A	- 2
Change - Volume	- 0.2 %

SAE COMPATABILITY FLUID : 300 hrs @ 248°C (120°F)	
Change - Hardness, Shore A	- 2
Change - Volume	- 0.2 %

50% ETHYLENE GLYCOL/50% H20 : AGED 70 HRS @ 302°F	
Change - Tensile Strength	+ 7.0 %
Change - Elongation	+ 0.3 %
Change - Hardness, Shore A	0
Change - Volume	- 0.5 %

ETHYLENE GLYCOL : AGED 70 hrs @ 302°F (150°C)	
Change - Tensile Strength	+ 20.4 %
Change - Elongation	+ 5.7 %
Change - Hardness, Shore A	0
Change - Volume	- 0.8 %

HYDROCHLORIC ACID 37% : AGED 70 hrs @ 70°F, 23°C	
Change - Tensile Strength	+ 18.8 %
Change - Elongation	+ 8.5 %
Change - Hardness, Shore A	+ 2
Change - Volume	+ 3.0 %

METHANOL : AGED 70 hrs @ RT (73°F, 23°C)	
Change - Tensile Strength	+ 5.6 %
Change - Elongation	+ 7.1 %
Change - Hardness, Shore A	- 2
Change - Volume	+ 0.1 %

METHYL ETHYL KETONE : AGED 70 hrs @ 70°F, 23°C	
Change - Tensile Strength	- 23.2 %
Change - Elongation	- 12.5 %
Change - Hardness, Shore A	- 8
Change - Volume	+ 11.2 %