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Shock, Noise and Vibration Solutions

Electronic Materials Brochure



Aearo Technologies LLC • a 3M company

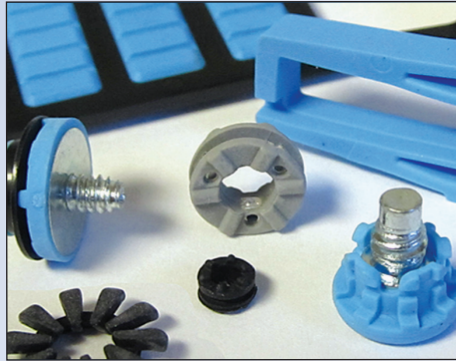




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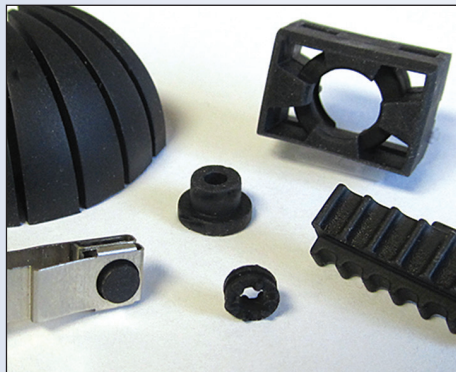
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### ISODAMP™ C-8000 MATERIALS

- Highly damped thermoplastic molded products for noise, shock and vibration control
- RoHS compliant
- JIG-101 compliant
- Non-halogenated
- Listed UL 94 V-0 flame rating
- Available in durometers from 40 to 88 Type A



### ISOLOSS™ SL MATERIALS

- Highly damped thermoset molded products for noise, shock and vibration control
- RoHS compliant
- JIG-101 compliant
- Non-halogenated
- Available in durometers from 20 to 60 Type A
- Available in listed UL 94 and non-listed formulations



### CONFOR™ EG FOAMS

- Highly compliant shock and energy absorbing, strain-rate sensitive, open-cell foam products
- Listed UL 94 HF-1 flame rating
- RoHS compliant
- JIG-101 compliant
- Non-halogenated
- Available in a range of stiffnesses and parts



### CONFOR™ SC FOAMS

- Small cell, slow-recovery foam that can be easily compressed up to 95% for shock protection and gasketing in tight spaces.
- Low compression set
- Highly comformable gap filler
- Listed HF-1 @ 0.5mm-3.0mm
- RoHS Compliant and non-halogenated
- JIG-101 Compliant

## Typical Properties

Property	C-8012	C-8002	C-8070	C-8130
<b>Description</b>	TPE Solid Thermoplastic	TPE Solid Thermoplastic	TPE Solid Thermoplastic	TPE Solid Thermoplastic
<b>Hardness</b> ASTM D2240 Type A Durometer 23C (73F) 15 sec impact	40	51	70	88
<b>Compression Load Deflection kPa (psi)</b> ASTM D575 at 0.51 cm/min (0.2 in/min)				
10% kPa (psi)	324 (47)	455 (66)	951 (138)	3619 (525)
20% kPa (psi)	627 (91)	883 (128)	1799 (261)	6494 (942)
30% kPa (psi)	958 (139)	1358 (197)	2799 (406)	9087 (1318)
<b>Compression Set (%)</b> ASTM D395 Method B				
22 hr at 22C (72F)	12	15	15	35
22 hr at 70C (158F)	100	99	98	90
<b>Tensile Strength kPa (psi)</b> ASTM D412	3309 (480)	5309 (770)	10059 (1459)	11279 (1636)
<b>Tear Strength kN/m (lbf/in)</b> ASTM D624	18 (100)	25 (141)	50 (285)	72 (410)
<b>Temperature Range C (F)</b> Peak Damping Performance Temperature Range				
@ 10 Hz	-26 to 22	-6 to 37	4 to 42	5 to 27
@ 100 Hz	-19 to 35	-2 to 50	8 to 53	10 to 34
@ 1000 Hz	-13 to 55	4 to 71	14 to 68	16 to 41

The above technical information and data should be considered representative or typical only and should not be used for specification purpose.

## Environmental Properties

Property	C-8012	C-8002	C-8070	C-8130
<b>Flammability</b> UL 94	Listed V-0 @ 6 mm (0.24in)	Listed V-0 @ 3.4 mm (0.13 in)	Meets V-0 @ 3.2mm (0.125 in)	Listed V-0 @ 3.5 mm (0.14 in)
<b>RoHS Compliant</b>	Yes	Yes	Yes	Yes
<b>Halogen Free*</b>	Yes	Yes	Yes	Yes

Halogen-free per IEC 61249-2-21.



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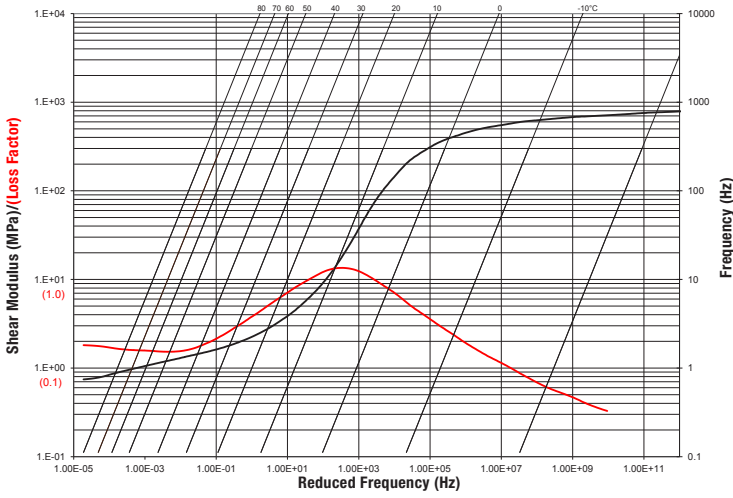
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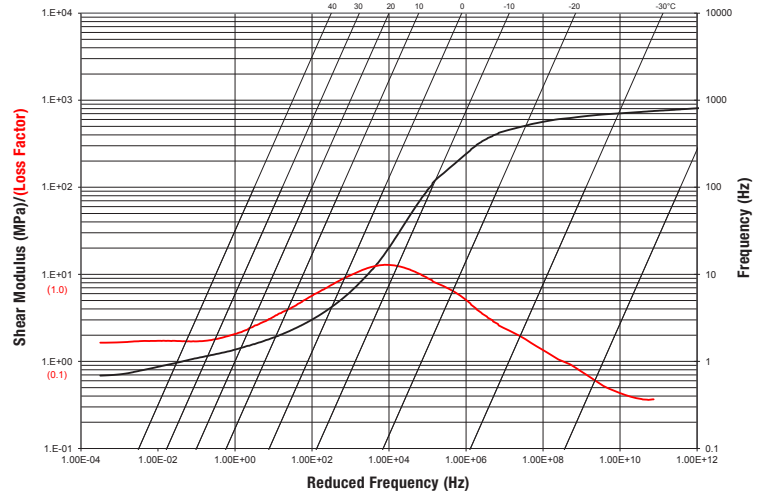




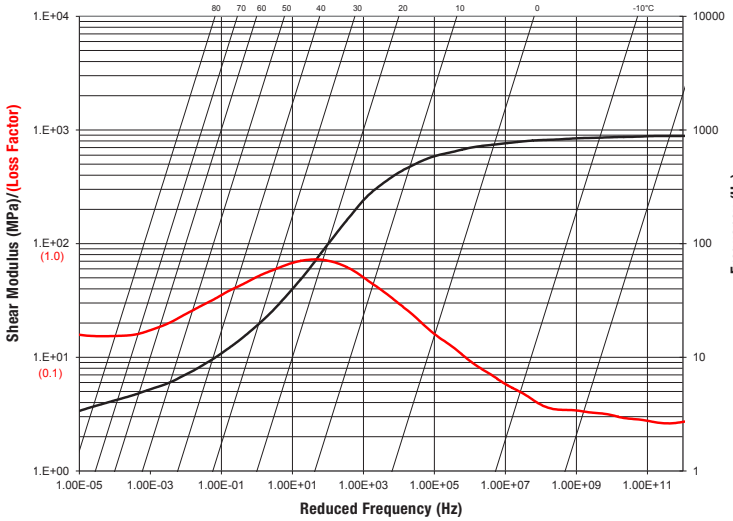
### ISODAMP C-8002



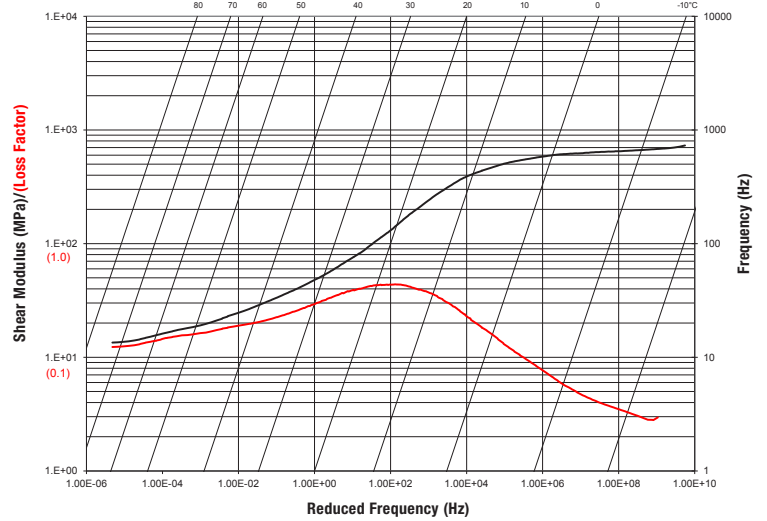
### ISODAMP C-8012



### ISODAMP C-8070



### ISODAMP C-8130



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## Typical Properties

Property	SL-20300	SL-35300	SL-50300	SL-60300
<b>Description</b>	Synthetic Rubber	Synthetic Rubber	Synthetic Rubber	Synthetic Rubber
<b>Hardness</b> ASTM D2240 Type A Durometer 23C (73F) 15 sec impact	19	30	45	56
<b>Compression Load Deflection kPa (psi)</b> ASTM D575 at 0.51 cm/min (0.2 in/min)				
10% kPa (psi)	117 (17)	193 (28)	338 (49)	517 (68)
20% kPa (psi)	221 (32)	379 (55)	669 (97)	1013 (132)
30% kPa (psi)	352 (51)	607 (88)	1096 (159)	1689 (222)
<b>Compression Set (%)</b> ASTM D395 Method B 22 hr at 22C (72F) 22 hr at 70C (158F)	3 7	4 6	2 7	3 4
<b>Tensile Strength kPa (psi)</b> ASTM D412	4185 (600)	5667 (822)	10149 (1472)	10721 (1555)
<b>Tear Strength kN/m (lbf/in)</b> ASTM D624	11.4 (65)	20.1 (115)	18.9 (108)	24.15 (138)
<b>Temperature Range C</b> Peak Damping Performance Temperature Range				
@ 10 Hz	-23 to 29	-21 to 30	-5 to 42	-10 to 35
@ 100 Hz	-18 to 47	-16 to 47	-2 to 63	-4 to 47
@ 1000 Hz	-14 to 71	-12 to 72	4 to 82	1 to 60

The above technical information and data should be considered representative or typical only and should not be used for specification purpose.

## Environmental Properties

Property	SL-20300	SL-35300	SL-50300	SL-60300
<b>Flammability</b> UL 94	Listed HB @ 2.3mm-2.5mm	Listed HB @ 3.0mm	Listed HB @ 3.0mm	Listed HB @ 3.0mm
<b>RoHS Compliant</b>	Yes	Yes	Yes	Yes
<b>Halogen Free*</b>	Yes	Yes	Yes	Yes

\*Halogen-free per IEC 61249-2-21.



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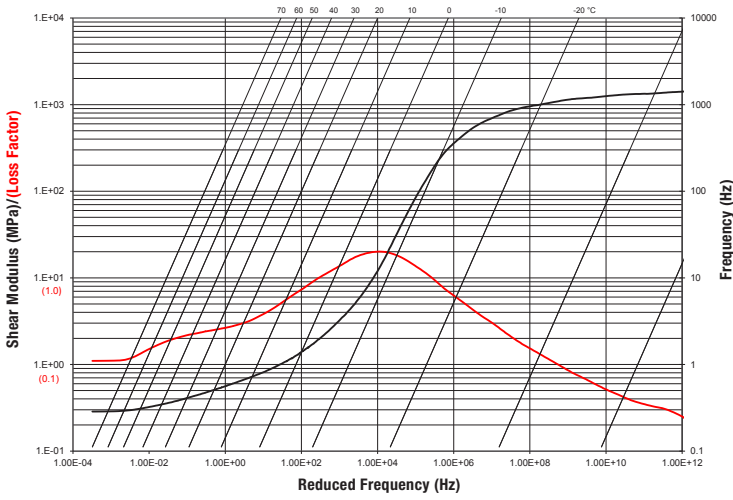
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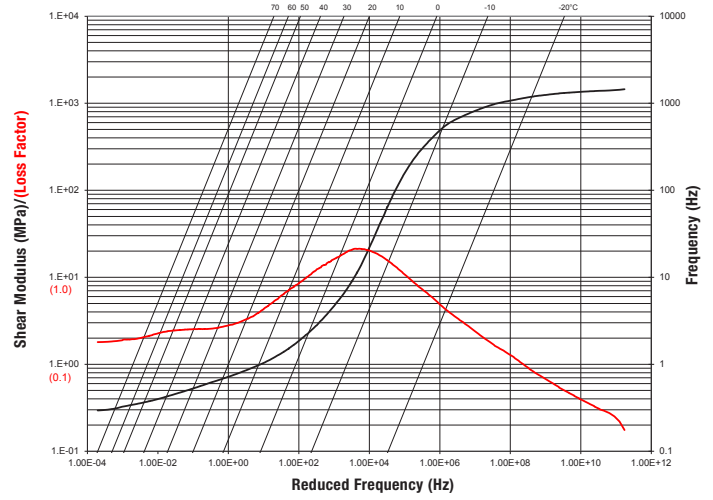
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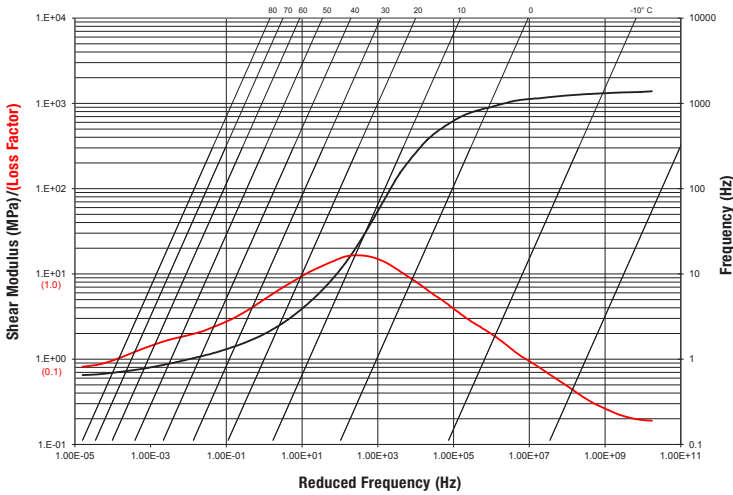
### ISOLOSS SL-20300



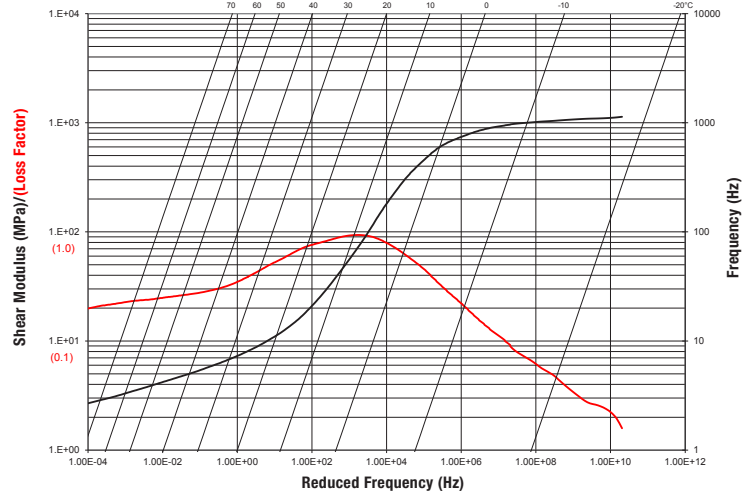
### ISOLOSS SL-35300



### ISOLOSS SL-50300



### ISOLOSS SL-60300





Typical Properties

Property	CFNT-EGS	CF-40EG	CF-42EG	CF-45EG	CF-47EG
<b>Density Nominal kg/m<sup>3</sup> (lb/ft<sup>3</sup>)</b> ASTM D3574	83 (5.18)	96.1 (6)	96.1 (6)	96.1 (6)	96.1 (6)
<b>Ball Rebound %</b> ASTM D3574	< 1	< 1	< 1	< 1	< 1
<b>Thermal Conductivity – K Value</b> ASTM C518 W/m*K (BTU in/hr ft <sup>2</sup> F)	.0039 (0.27)	.0039 (0.27)	.0040 (0.28)	.0040 (0.27)	.0039 (0.27)
<b>Compression Set (%)</b> ASTM D357 22hr @ 22C (72 F), Compressed 50%	< 1	< 1	< 1	< 1	< 1
<b>Indentation Force Deflection</b> ASTM D3574 Test B1 Modified 25% Deflection for 12" x 12" x 2" sample 22C (72F) @ 50% Relative Humidity (lbf)	10-17	15-28	29-41	42-55	55-70
<b>Tensile Strength kPa (psi)</b> ASTM D3574 5.1mm/min (20 in/min)	48 (6.7)	53 (7.7)	90 (13)	129 (19)	229 (33)
<b>Tear Strength kN/m (lbf/in)</b> ASTM D3574 5.1 mm/min (20 in/min) @ 22C (72F)	0.28 (1.6)	0.32 (1.8)	0.56 (3.2)	0.63 (3.6)	1.1 (6.5)
<b>Tg (Peak Loss Modulus), °C</b> DMA, 10 Hz & 0.3 amplitude, 30% compression	-2.5	2.7	6.7	14	19
<b>Peak Tan Delta @ Temp C (F)</b> DMA, 10 Hz & 0.3 amplitude, 30% compression	1.34 @ 22 C	1.33 @ 26 C	1.26 @ 30 C	1.17 @ 39 C	1.07 @ 46 C
<b>Compression Load Deflection</b> ASTM D 3574C Modified*					
Force @ 10% Compression kPa (psi)	0.83 (0.12)	1.65 (0.24)	2.83 (0.41)	3.03 (0.44)	6.89 (1.00)
Force @ 20% Compression kPa (psi)	1.1 (0.16)	1.86 (0.27)	2.90 (0.42)	3.59 (0.52)	6.89 (1.00)
Force @ 30% Compression kPa (psi)	1.2 (0.18)	2.07 (0.30)	3.31 (0.48)	4.0 (0.58)	7.58 (1.08)
Force @ 40% Compression kPa (psi)	1.5 (0.22)	2.41 (0.35)	3.93 (0.57)	4.76 (0.69)	8.96 (1.27)
Force @ 50% Compression kPa (psi)	1.8 (0.26)	3.03 (0.44)	4.96 (0.72)	6.0 (0.87)	11.03 (1.60)
Force @ 60% Compression kPa (psi)	2.4 (0.35)	4.21 (0.61)	6.89 (1.04)	8.96 (1.25)	15.86 (2.29)
Force @ 70% Compression kPa (psi)	3.9 (0.57)	7.58 (1.1)	13.1 (1.89)	16.34 (2.37)	28.96 (4.19)
Force @ 80% Compression kPa (psi)	9.0 (1.3)	21.4 (3.09)	37.9 (5.5)	51.0 (7.42)	89.63 (13.0)

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\* 12.7mm thick specimen compressed at a rate of 5.1 mm/min

Environmental Properties

Property	CFNT-EGS	CF-40EG	CF-42EG	CF-45EG	CF-47EG
<b>Flammability</b> UL 94	Meets HBF	Listed HF-1 @ 2 mm	Listed HF-1 @ 2 mm	Listed HF-1 @ 2 mm	Listed HF-1 @ 2 mm
<b>RoHS Compliant</b>	Yes	Yes	Yes	Yes	Yes
<b>Halogen Free*</b>	Yes	Yes	Yes	Yes	Yes

\*Halogen-free per IEC 61249-2-21.



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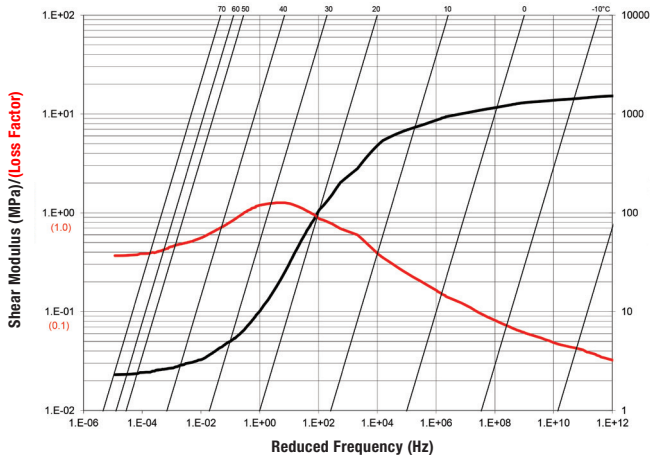
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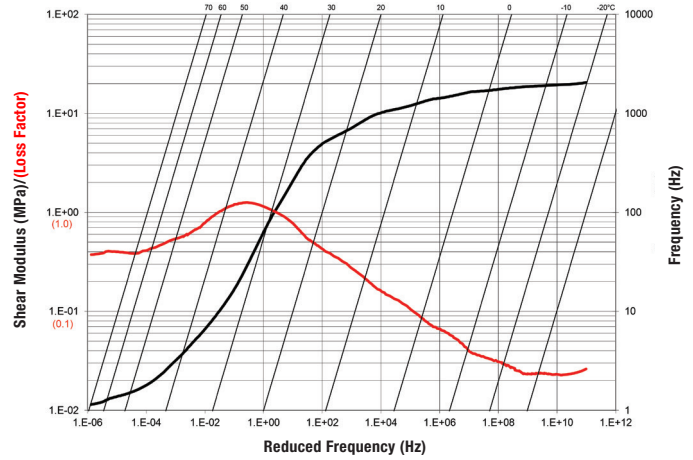
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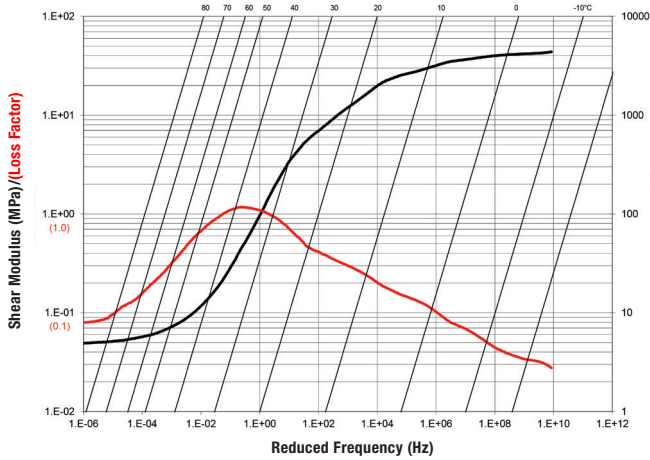
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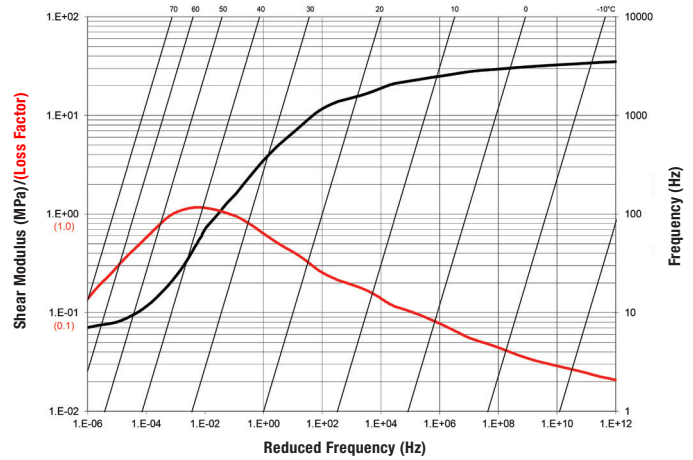
**CF-42EG**



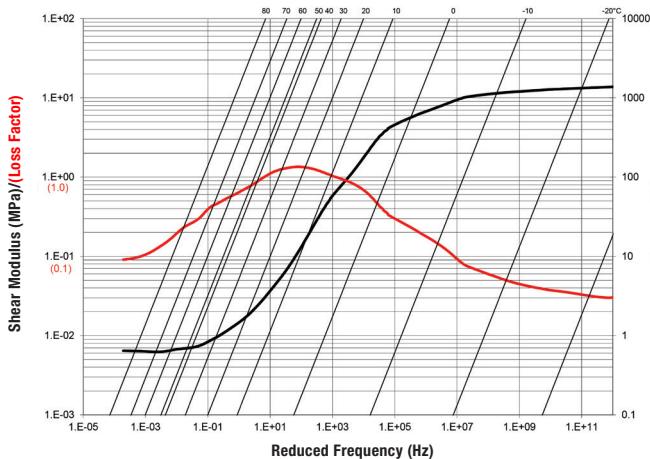
**CF-45EG**



**CF-47EG**



**CFNT-EGS**





## Typical Properties

Property	CF-42SC	CF-47SC
<b>Density Nominal kg/m3 (lbs/ft3)</b> ASTM D 3574-03 Test A	101 kg/m3 (6.3 lbs/ft.³)	101 kg/m3 (6.3 lbs/ft.³)
<b>Tensile Strength kPa (psi)</b> ASTM D 3574-03 Test E	131 (19.1)	288.82 (41.89)
<b>Tear Resistance kN/m (lbf/in)</b> ASTM D 3574-03 Test F	0.53 (3.0)	1.26 (7.19)
<b>Elongation</b> ASTM D 3574-03 Test F	181%	142%
<b>Compression Set (%)</b> ASTM D3574-03 Test D- 50% Compression 22 hr at 22C (72F) 22 hr at 60C (140F)	<2%	<1%
<b>Compression Load Deflection kPa (psi)</b> ASTM D3574-03 Test C Modified		
@ 10% Deflection	3.22 (0.47)	12.4 (1.80)
@ 20% Deflection	3.64 (0.53)	13.5 (1.96)
@ 30% Deflection	4.17 (0.60)	13.9 (2.02)
@ 40% Deflection	4.98 (0.72)	15.8 (2.30)
@ 50% Deflection	6.30 (0.91)	19.8 (2.87)
@ 60% Deflection	8.73 (1.30)	27.6 (4.00)
@ 70% Deflection	14.8 (2.10)	48.8 (7.07)
@ 80% Deflection	39.8 (5.80)	147.0 (21.30)
<b>Dust Resistance</b> IEC 60529-Category 2 50% Compression 70% Compression	IP 5X Rating Dust Proof Dust Proof	IP 5X Rating Dust Proof Dust Proof

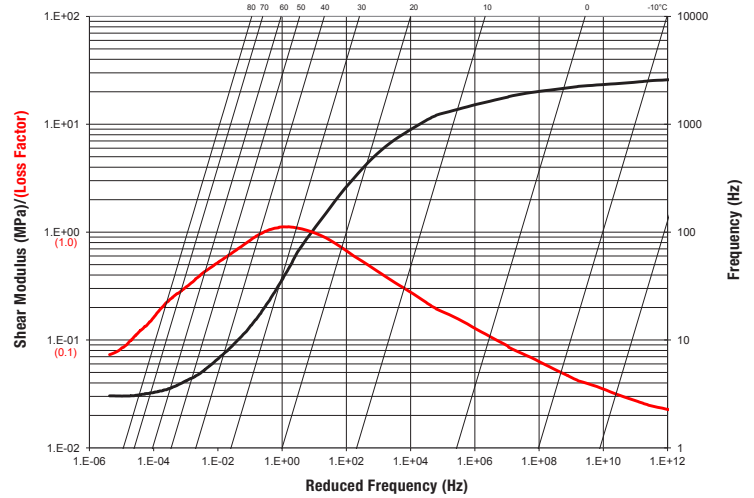
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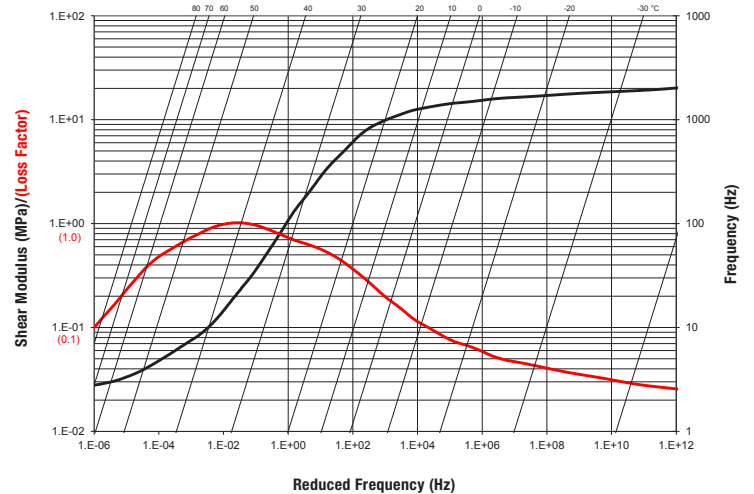
Property	CF-42SC	CF-47SC
<b>Flammability</b> UL 94	Listed HF-1 @ 0.5 mm – 3.0mm	Meets HF-1 @ 1.6 mm – 3.5mm
<b>RoHS Compliant</b>	Yes	Yes
<b>Halogen Free*</b>	Yes	Yes

\*Halogen-free per IEC 61249-2-21.

### CF-42 SC



### CF-47 SC



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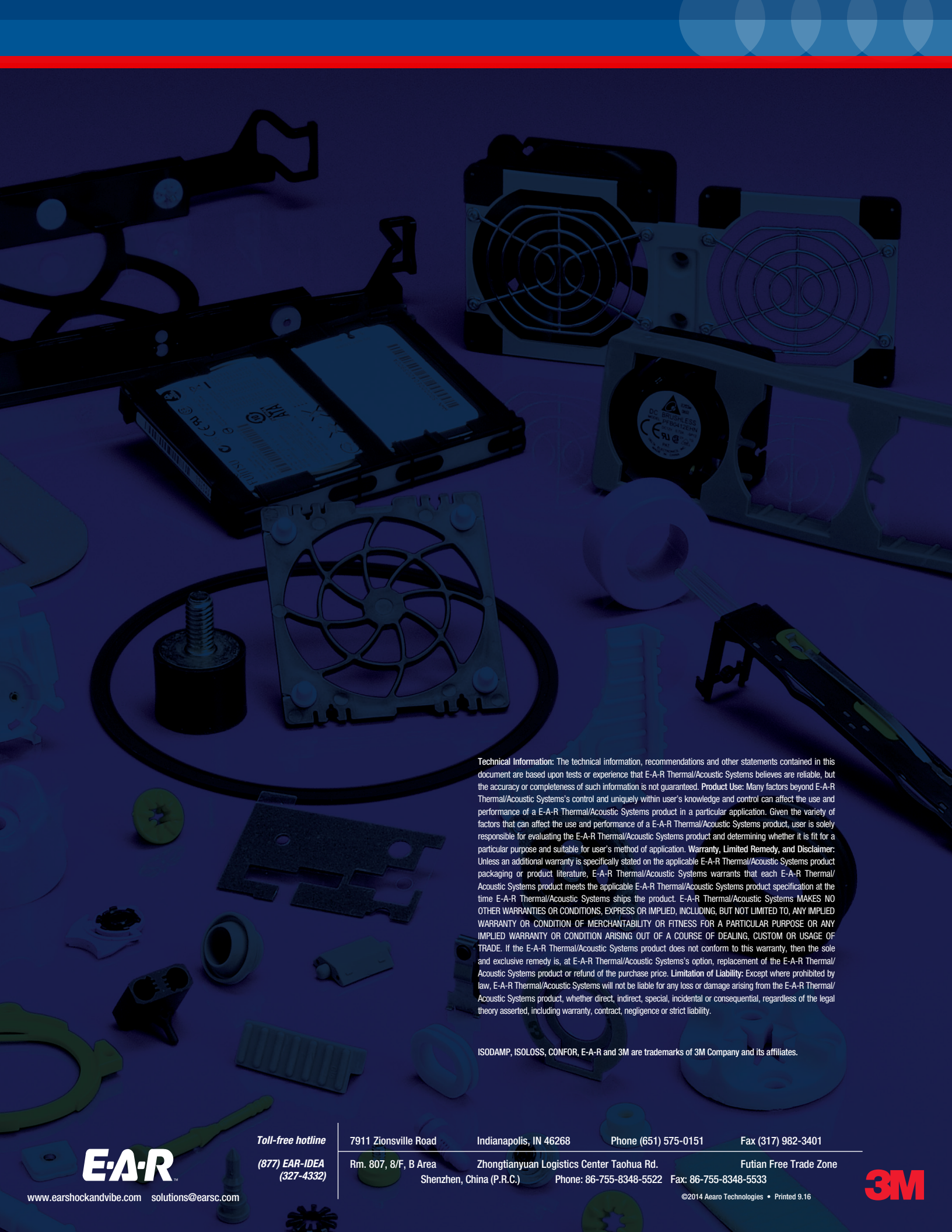
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