

PARKER CHOMERICS NASA OUTGASSING INFORMATION

Many specifications require that nonmetallic components be virtually free of volatile residues which might out-gas in the hard vacuum environment of space. The standard test method for determining outgassing behavior is ASTM E595, which provides for measurement of total mass loss (TML) and collected volatile condensable materials (CVCM) in a vacuum environment.

Data for a number of Parker Chomerics conductive elastomers, based on ASTM E595 testing done by NASA Goddard Spaceflight Center, is presented below.

The normal specification limits or guide-lines on outgassing for NASA applications are 1% TML max., and 0.1% CVCM max. For further information, please visit <https://outgassing.nasa.gov>.

Parker Chomerics Low NASA Outgassing Products								
Product Name	Description	% TML	% CVCM	Cure Time	Cure Temp °C	At - MOS	% WVR	Data Ref
CHO-SEAL 1212	SILVER FILLED SILICONE 125 GRADE	0.07	0.02	24H	177	AIR	0.00	GSC15576
		0.08	0.02	15M	171	AIR	N/A	GSFC3245
CHO-SEAL 1215	SILVER FILLED SILICONE	0.39	0.08	N/A	N/A	N/A	N/A	GSFC2029
	SILVER FILLED SILICONE (LOT #2L1215-001)	0.32	0.03	N/A	N/A	N/A	0.03	GSC28600
	SILVER FILLED SILICONE 125 GRADE	0.06	0.01	24H	177	AIR	0.00	GSC15579
		0.06	0.02	15M	171	AIR	N/A	GSFC3201
		0.46	0.07	15M	171	AIR	N/A	GSFC3203
CHO-SEAL 1217	SILVER FILLED FLUOROSILICONE 125 GRADE	0.45	0.01	N/A	N/A	N/A	0.00	GSC15231
		0.29	0.01	15M	171	AIR	N/A	GSFC3163
		0.03	0.00	15M	171	AIR	N/A	GSFC3165
CHO-SEAL 1221	SILVER FILLED FLUOROSILICONE	0.35	0.02	N/A	N/A	N/A	0.01	GSC15249
	SILVER FILLED SILICONE AEROSPACE 200	0.3	0.00	15M	171	AIR	N/A	GSFC3101
		0.05	0.00	15M	171	AIR	N/A	GSFC3103
CHO-SEAL 1224	SILVER FILLED SILICONE AEROSPACE 200	0.07	0.04	24H	177	AIR	0.00	GSC15582
		0.43	0.06	15M	171	AIR	N/A	GSFC3105
		0.04	0.02	15M	171	AIR	N/A	GSFC3107
CHO-SEAL 1236	REINFORCED SILICONE GASKET SEAL RED	0.17	0.05	N/A	N/A	N/A	0.00	GSC15235
CHO-SEAL 1250	SILVER FILLED SILICONE	0.15	0.07	N/A	N/A	N/A	0.00	GSC15237
		0.28	0.09	N/A	N/A	N/A	0.01	GSFC8864

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CHO-SEAL 1285	SILVER ALUMINUM FILLED SILICONE	0.12	0.05	24H	177	AIR	0.05	GSC12556
		0.62	0.09	N/A	N/A	N/A	0.27	GSC15251
		0.12	0.01	24H	177	AIR	0.06	GSC15585
		0.11	0.03	24H	177	AIR	0.05	GSC24485
CHO-SEAL 1287	SILVER ALUMINUM FILLED FLUOROSILICONE	0.63	0.03	N/A	N/A	N/A	0.30	GSC15165
CHO-SEAL 1298	SILVER ALUMINUM FILLED SILICONE	0.12	0.02	N/A	N/A	N/A	0.04	GSC28381
CHO-SIL 1401	SILVER FILLED SILICONE	0.05	0.02	24H	177	AIR	N/A	GSFC3706
CHO-SEAL 6503	NICKEL ALUMINUM FILLED SILICONE	0.52	0.04	N/A	N/A	N/A	0.07	NuSil *
CHO-SEAL S6305E	NICKEL GRAPHITE FILLED FLUOROSILICONE	0.15	0.09	15M	177	AIR	0.02	GSC23961
SILICONE SPONGE RUBBER	R10470M RED	0.04	0.01	72H	150	AIR	0.02	GSC22696
CHO-THERM 1671	THERM COND SHEET LOT ZB414 WHITE SILICONE	0.32	0.08	N/A	N/A	N/A	0.03	GSC13957
	THERM COND SHEET WHITE SILICONE	0.08	0.04	24H	150	E-2	0.01	GSC30280
		0.04	0.01	24H	175	E-2	0.01	GSC30283
		0.04	0.01	24H	175	AIR	0.01	GSFC9656
		0.76	0.07	N/A	N/A	N/A	0.00	GSC11099
		0.1	0.05	24H	175	AIR	0.01	GSC11246
		0.17	0.06	N/A	N/A	N/A	0.01	GSC23496
		0.23	0.07	N/A	N/A	N/A	0.01	GSC22822
		0.03	0.01	18H	200	AIR	0.01	GSC22534
0.06	0.05	18H	150	AIR	0.01	GSC22537		
CHO-THERM 1674	THERM COND SHEET BLUE SILICONE	0.12	0.01	24H	175	AIR	0.03	GSC11372
CHO-THERM 1677	ONE SIDE ACRYLIC ADH/F	0.2	0.01	N/A	N/A	N/A	0.02	GSC21597
	THERM COND SHEET WHITE FLUOROSILICONE	0.57	0.01	N/A	N/A	N/A	0.10	GSC11405
CHO-THERM 1679	2 SIDE ACRYLIC ADH/F SANDWICH	0.42	0.07	N/A	N/A	N/A	0.02	GSC21549
THERM-A-FORM T646	SILICONE AS 1/1 BW	0.39	0.06	2D	60	AIR	0.01	GSC26707

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Product Name	Description	% TML	% CVCM	Cure Time	Cure Temp °C	At - MOS	% WVR	Data Ref
THERM-A-GAP G574	WHITE SILICONE FIBER RENIF/W CERAMIC FILLER	0.07	0.00	24H	125	AIR	0.01	GSC28402
THERM-A-GAP G579	THERMALLY COND PAD P/N 61-02-0404-G579	0.15	0.07	N/A	N/A	N/A	0.00	GSC32236
THERMATTACH T-404	THERMALLY COND 2 SIDED TAPE/F	0.56	0.02	N/A	N/A	N/A	0.18	GSC20671
THERMATTACH T-405	AL TAPE W ACRYLIC ADH 2 SIDES/F	0.25	0.01	N/A	N/A	N/A	0.07	GSC24777
THERMATTACH T-412	AL TAPE W ACRYLIC ADH 2 SIDES/F	0.14	0.00	N/A	N/A	N/A	0.05	GSC24774
CHO-THERM T444	THERMALLY CONDUCTIVE, NON-SILICONE CONDUCTOR	0.53	0.00	N/A	N/A	N/A	0.35	GSC33106
CHO-BOND 1024	CONDUCTIVE SILICONE	0.02	0.00	48H	177	AIR	0.00	GSC10598
CHO-BOND 360-208	CONDUCTIVE EPOXY ADHESIVE	0.66	0.06	24H	25	AIR	0.08	GSFC9683
CHO-BOND SV-712	ELECTRICALLY CONDUCTIVE EPOXY ADH	0.36	0.01	N/A	N/A	N/A	0.05	GSC26509
TECKNIT 72-00002	SILVER FILLED SILICONE	0.6	0.21	24H	25	AIR	N/A	GSFC4756
		0.02	0.00	48H	121	E-5	N/A	GSFC4758
TECKNIT 72-00005	SILVER FILLED ACETATE	0.21	0.02	7D	25	AIR	0.03	GSC14638
CHO-FOIL 101	COPPER FOIL/COND ACRYLIC ADHESIVE	0.11	0.02	N/A	N/A	N/A	0.03	GSC28354
CHO-FOIL 201	ALUMINUM FOIL/COND ACRYLIC ADHESIVE	0.17	0.02	N/A	N/A	N/A	0.06	GSC28357
CHO-FOIL 301	COPPER FOIL/NON COND ADH/FABRIC	0.11	0.01	N/A	N/A	N/A	0.03	GSC16907
CHO-FOIL CCE	EMBOSSED CU EMI SHIELDING TAPE	0.09	0.00	N/A	N/A	N/A	0.03	GSC29161
MESH COMBO STRIP	GRAY SILICONE	0.24	0.05	24H	163	AIR	0.07	GSC18468
CHO-SEAL EX4370-10-2	FILLED SILICONE 125 GRADE	0.21	0.09	N/A	N/A	N/A	0.01	GSC17228
CHO-SHRINK 1061	COPPER COND INNER SURFACE	0.56	0.03	N/A	N/A	N/A	0.05	GSC16319
CHO-SHRINK TUBING	SILVER COND INNER SURFACE	0.61	0.06	5M	121	AIR	N/AAS	GSFC4606

*Product was tested by NuSil, inquire further for more information.

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