

PROCESS FLOW DIAGRAM

Part Certification

Family name 7306		Date (Orig.) 5/11/2022	Prepared by Steve Long
Part Number 71652117	Eng Chng Lvl / Eng Chng Date 1, 11/19/2021	Date (Rev.) --	Title PPAP Coordinator
Part Name Seal-A1096A		Page N/A	Phone Number 330-425-8472
Cross Functional Team Members Project Engineer - Joe Kidwell, Business Development Manager - Toni Haneburg, Quality Manager - Van Culliton, Program Manager - Coy Goodman, Dim Lab - Howard Coomer, Plant Manager - Srdjan Sudar, PPAP Coordinator - Steve Long			Symbol Key:  Manufacturing/Assembly  Movement of Materials/Parts  Storage of Materials/Parts  Inspection

Step #	Fab	Move	Store	Insp	Operation Description	Item #	Special Characteristics		
1					Receive Raw Material	1	Material Supplier Specification	1	Material Cert.
2					Move to Storage				
3					Store for Weigh-Up				
4					Move to Weigh-Up				
5					Material Weigh-Up	2	Ingredients Proportioned	2	Material Recipe
6					Move to Mixing				
7					Mixing	3	Visual Attributes	3	Process Instructions
8					Move to Milling				
9					Milling	4	Material	4	Master Router
					Lab Tests	5	Physical Properties	5	Tests Results Log
10					Move to Storage				
11					Store for Molding				
12					Move to Molding				
13					Set-Up of Mold & Press	6	Set-Up Instructions	6	1st heat approval
14					Molding	C 7	Molding Process	7	Line Check Procedure
						8	Visual Attributes	8	Line Check Procedure
15					Move to Scale Count				
16					Scale Count	10	Piece Count	10	Work Instruction
17					Move to Finishing				
18					Set-Up of Finishing Equipment	11	Set-Up Instructions	11	Visual
19					Finishing - Power Wash	12	Flash	12	Master Router
20					Move to Storage				
21					Store for Vision				
22					Set-up Vision Machine & Validation	13	Vision Instruction	13	Rabbit Samples
23					Vision	14	Automated Vision System Inspection	14	Automated Vision

24	◆			■	Final Audit /Packaging	15	Visual Attributes	15	Final Inspection Procedure
						16	Standard Pack Quantity	16	Packaging Procedure
25		●			Move to Finished Goods at Warehouse				
26		●			Ship to Customer	17	Label	17	Sales Orders

PRODUCTION CONTROL PLAN

Part Certification

Control Plan Category ☐ Prototype ☐ Pre-Launch ☒ Production		Key Contact Name Van Culliton	Date (Orig) 5/11/2022	Date (Rev) --	Page n/a
Control Plan Number 7306	Compound A5004GN	Key Contact Phone 330-425-8472	Customer Engineering Approval (If Req'd) n/a		Date (If Req'd) n/a
Part Number 71652117	ECL 1, 11/19/2021	Supplier / Plant Approval / Date n/a	Customer Quality Approval (If Req'd) n/a		Date (If Req'd) n/a
Part Name / Description Seal-A1096A		n/a	Other Approval (If Req'd) n/a		Date (If Req'd) n/a
Supplier / Plant Quality Synthetic Rubber Inc.	Supplier Code 017532458	Other Approval Date (If Req'd) n/a			

Core team Members

Project Engineer - Joe Kidwell, Business Development Manager - Toni Haneburg, Quality Manager - Van Culliton,
Program Manager - Coy Goodman, Dim Lab - Howard Coomer, Plant Manager - Srdjan Sudar, PPAP Coordinator - Steve Long

Characteristics												
Methods												
Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	No.	Product	Process	Special Char. Class.	Product / Process Specification / Tolerance	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	Reaction Plan
1	Receive Raw Material		1	Material Supplier Specification			Material Certification	Visual Inspection	1	Each Lot	Review Supplier Certification	Reject Lot, Return to Supplier
2	Move to Storage				Relocate Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
3	Store for Weigh up				Store Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
4	Move to Weigh up				Relocate Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
5	Material Weigh-up		2		Ingredients Proportion		Process Instruction (Matl. Recipe)	Scale	1	Each Batch	Process Instruction (Matl. Recipe)	Reject Lot, Inform Supervisor, Improve Process
6	Move to Mixing				Relocate Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
7	Mixing	Mixer	3	Material	Visual Attributes		Process Instruction (Matl. Recipe)	Lab Test Procedures	1	Each Batch	Process Instruction (Matl. Recipe)	Reject Lot, Inform Supervisor, Improve Process
8	Move to Milling				Relocate Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
9	Milling	Pig form	4	Material	Physical Properties		Preform Specification	Lab Test Procedures	1	Each Lot	Master Router, Bar Code ID	Reject Lot, Inform Supervisor, Improve Process
	Lab Tests		5	Physical Properties	Physical Properties		Reference Material Test Procedure	Lab Procedures	1	Ref. Mat. Test Procedure	Test Results Log	Lab Manager to Evaluate, Reject Lot
10	Move to Storage				Relocate Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
11	Store for Molding				Store Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
12	Move to Molding				Relocate Material			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
13	Set-Up of Mold & Press		6		Set-Up of Mold		Instruction Sheet	Review of Instruction sheet	1	Each Set-Up	1st heat Approval	Reject Lot, Inform Supervisor, Improve Process
14	Molding	Rubber Molding Press	7		Molding		Molding Process Instructions	Visual Inspection	50 Pcs.	4 Times Per Shift	Line Check Procedure	Reject Lot, Inform Supervisor, Improve Process
			8	Visual Attribute			Inspection Instruction					

15	Move to Scale Count				Relocate Production Parts			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
16	Scale Count		10	Piece Count			Work Instruction	Digital Scales	100%	Each Lot	Work Instruction	Investigate, Inform Supervisor
17	Move to Finishing				Relocate Production Parts			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
18	Set-up of Finishing Equipment	Various Finishing Equipment	11		Setup of Fishing Equipment		Instruction Sheet, Visual Inspection Criteria	Review of Instruction sheet	1	Each Setup	Visual	Reject Lot, Inform Supervisor, Improve Process
19	Finishing Power Wash	Various Finishing Equipment	12	Flash			Process Instruction	Visual Inspection	Visual Scan	Each Lot	Master Router	Reject Parts, Inform Supervisor, Improve Process
20	Move to Storage				Relocate Production Parts			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
21	Store for Vision				Store Production Parts			Bar Code Verification	1	Each Lot	Master Router, Bar Code ID	Verify Information and Relocate if Needed
22	Set-Up Vision Machine & Validation		13		Vision Setup		Setup Instructions QS-10-004-I	Visual, Rabbit Samples	Varies	Rabbits Run On Setup	Vision Process	Reject Lot, Inform Supervisor, Improve Process
23	Vision	Automated Camera System	14	Automated Vision Inspection			Go / No Go Attribute	Automated Inspection by Camera. ID Blocked holes,Flash and Chips	100%	Each Box	Master Router, Final Inspection Procedure	Reject Parts
24	Final Audit / Packaging		15	Visual Attribute			Visual Inspection Criteria	Visual Inspection	Per Zero Defect Sample Plan QA-10-003-I	Each Lot	Final Audit Procedure	Reject Parts
			16	Standard Pack Quantity			Packaging Specs	Vision Machine Counter	100%	Each Box	Packaging Procedure	Shipping Manager to Evaluate
25	Move to Finished Goods at Warehouse				Relocate Final Products			Bar Code Verification	1	Each Box	Master Router, Bar Code ID	Verify Information and Relocate if Needed
26	Ship to Customer		17	Container Label			Shipping Procedures	Bar Code	100%	Each Box	Sales Order, Computer Check	Shipping Manager to Evaluate

Quality Synthetic Rubber, Inc.

Gage:	OGP Flash
Gage Number:	810
Specification Max.:	16.7
Specification Min.:	16.2
Total Tolerance:	0.5

ndc < 5: Gage may not have adequate discrimination

Coordinated by: DAVE GIBSON



Production Part Approval Dimensional Test Results

[illegible]

Blanket statements of conformance are unacceptable for any test results.

DATE
2/23/2022

DATE _____

2/23/2022

Production Part Approval
Dimensional Test Results



ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS	PART NUMBER: 7165-2117
SUPPLIER/VENDOR CO	SEAL-A1096A
NAME OF INSPECTION FACILITY:	DESIGN RECORD CHANGE LEVEL: 5L3T-10C9030-AA
Sumitomo Electric Wiring Systems Pht. 5	ENGINEERING CHANGE DOCUMENTS: NA
	11/29/21
	F2

ITEM	DIMENSION / SPECIFICATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)																									NOT OK
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1	16.45	-0.50	0.50	4/11/22	326	16.466	16.459	16.464	16.465	16.477	16.483	16.462	16.462	16.466	16.470	16.482	16.478	16.477	16.480	16.473	16.471	16.469	16.485	16.475	16.478	16.466	16.462	16.469	O	
2	4.75	-0.30	0.30			4.696	4.697	4.697	4.700	4.702	4.702	4.703	4.697	4.703	4.709	4.703	4.697	4.703	4.709	4.696	4.700	4.702	4.702	4.700	4.703	4.703	4.697	4.693	4.698	O
3	6.00	-0.30	0.30			6.004	6.004	6.000	5.973	5.996	6.005	5.990	5.998	6.008	6.004	5.996	6.004	5.996	5.989	5.989	5.985	6.001	5.981	5.997	6.000	5.993	6.003	5.983	5.998	O
4	15.15	-0.50	0.50			15.101	15.108	15.109	15.115	15.114	15.113	15.107	15.118	15.107	15.108	15.115	15.112	15.108	15.110	15.108	15.112	15.117	15.112	15.114	15.108	15.104	15.116	15.113	15.124	O
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
16.471	16.466	16.470	16.454	16.471	16.476	16.477	16.478	16.475	16.479	16.481	16.477	16.479	16.479	16.477	16.485	16.482	16.477	16.475	16.477	16.477	16.472	16.472	16.479	16.488	O					
4.704	4.699	4.699	4.697	4.701	4.703	4.704	4.704	4.698	4.700	4.700	4.700	4.700	4.700	4.700	4.700	4.696	4.703	4.696	4.699	4.699	4.698	4.697	4.699	4.699	4.697	4.705	4.704	4.704	O	
6.003	6.003	6.004	6.014	5.999	5.980	5.988	6.012	5.987	6.007	5.981	5.997	5.996	5.991	5.987	5.979	5.999	5.982	5.994	6.001	5.994	5.994	6.004	5.998	6.001	O					
15.117	15.113	15.120	15.142	15.111	15.105	15.113	15.115	15.115	15.118	15.109	15.110	15.107	15.110	15.112	15.110	15.123	15.127	15.124	15.111	15.116	15.132	15.134	15.133	15.120	15.116	O				
51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75						
16.480	16.474	16.477	16.477	16.481	16.480	16.471	16.473	16.465	16.465	16.468	16.467	16.473	16.468	16.468	16.481	16.472	16.484	16.473	16.474	16.465	16.472	16.466	16.470	16.466	O					
4.703	4.696	4.703	4.697	4.701	4.705	4.698	4.697	4.693	4.687	4.702	4.696	4.698	4.695	4.692	4.704	4.703	4.705	4.703	4.695	4.705	4.695	4.695	4.695	4.692	O					
5.982	6.004	5.988	5.990	6.003	6.000	5.991	6.013	6.008	5.999	6.001	5.999	5.998	5.990	5.992	5.998	6.014	6.002	6.013	5.979	6.003	6.005	5.995	6.008	5.989	O					
15.129	15.123	15.109	15.117	15.118	15.119	15.116	15.117	15.115	15.107	15.106	15.106	15.106	15.109	15.116	15.119	15.111	15.117	15.112	15.116	15.116	15.113	15.114	15.110	15.104	O					
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100						
16.472	16.471	16.469	16.470	16.475	16.471	16.469	16.474	16.479	16.469	16.480	16.466	16.478	16.478	16.470	16.468	16.468	16.470	16.471	16.463	16.470	16.465	16.469	16.474	16.475	O					
4.692	4.700	4.698	4.692	4.703	4.700	4.701	4.712	4.703	4.696	4.710	4.696	4.704	4.691	4.700	4.699	4.699	4.706	4.699	4.692	4.696	4.701	4.698	4.712	4.690	O					
5.992	5.997	6.010	6.006	5.996	5.993	5.999	5.983	5.991	5.989	5.989	5.988	5.988	6.005	6.000	5.992	5.996	6.003	5.999	5.972	5.987	6.009	6.017	6.000	5.993	O					
15.106	15.108	15.126	15.112	15.103	15.108	15.116	15.118	15.121	15.127	15.122	15.118	15.118	15.117	15.111	15.108	15.103	15.102	15.107	15.101	15.104	15.103	15.103	15.105	15.114	O					
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125						
16.477	16.475	16.486	16.472	16.473	16.466	16.474	16.469	16.466	16.472	16.466	16.463	16.461	16.461	16.459	16.470	16.476	16.477	16.481	16.475	16.476	16.473	16.469	16.455	16.463	O					
4.701	4.704	4.708	4.705	4.694	4.699	4.698	4.697	4.694	4.701	4.707	4.698	4.696	4.698	4.698	4.697	4.699	4.701	4.701	4.696	4.710	4.700	4.698	4.688	4.697	O					
6.003	6.014	6.011	5.993	5.981	5.993	5.999	5.979	6.000	5.992	5.994	6.007	5.986	6.000	5.993	5.993	5.988	6.001	5.998	6.000	6.004	6.003	6.007	5.995	5.991	O					
15.112	15.116	15.129	15.119	15.105	15.116	15.107	15.110	15.121	15.130	15.103	15.104	15.124	15.122	15.103	15.102	15.104	15.112	15.117	15.121	15.123	15.108	15.114	15.109	15.109	O					
126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150						
16.486	16.467	16.462	16.472	16.474	16.472	16.483	16.486	16.474	16.478	16.475	16.468	16.465	16.467	16.470	16.472	16.475	16.482	16.497	16.481	16.484	16.475	16.469	16.475	16.475	O					
4.706	4.693	4.696	4.695	4.691	4.697	4.700	4.706	4.703	4.700	4.697	4.695	4.695	4.699	4.696	4.696	4.696	4.695	4.703	4.704	4.704	4.700	4.693	4.692	4.698	4.699	O				
5.990	6.005	5.981	5.997	5.990	5.978	5.990	5.986	6.010	5.995	5.997	5.986	5.988	5.995	5.990	6.002	6.002	5.995	6.008	6.009	5.987	6.000	6.001	5.971	5.993	O					
15.105	15.127	15.128	15.107	15.105	15.111	15.111	15.124	15.115	15.122	15.121	15.110	15.129	15.129	15.113	15.112	15.105	15.119	15.128	15.130	15.118	15.112	15.124	15.111	15.107	O					
151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175						
16.463	16.467	16.471	16.477	16.480	16.483	16.489	16.488	16.480	16.476	16.477	16.479	16.475	16.486	16.483	16.479	16.476	16.486	16.492	16.487	16.487	16.483	16.474	16.475	16.474	O					
4.694	4.698	4.696	4.694	4.698	4.694	4.694	4.707	4.701	4.700	4.691	4.705	4.704	4.708	4.699	4.698	4.704	4.702	4.694	4.704	4.699	4.705	4.695	4.710	4.700	4.691	O				
5.977	5.994	5.991	5.992	5.996	5.993	6.013	5.982	5.987	5.984	6.001	5.994	5.987	5.996	6.004	6.004	6.017	5.991	6.017	5.975	5.985	5.995	6.002	6.000	6.002	O					
15.108	15.124	15.109	15.105	15.115	15.114	15.125	15.127	15.124	15.120	15.121	15.115	15.117	15.126	15.128	15.122	15.116	15.112	15.123	15.130	15.124	15.121	15.103	15.104	15.113	O					

Blanket statements of conformance are unacceptable for any test results.

CFG-1003

MARCH 2006

SIGNATURE
Dave Gibson

TITLE
Metrology Technician

DATE
4/11/2022

Quality Synthetic Rubber

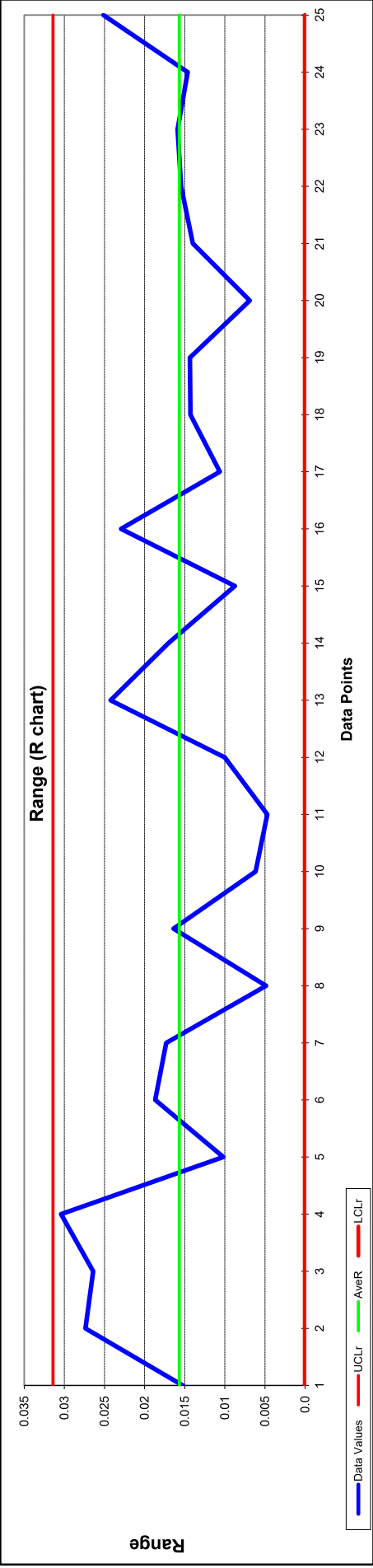
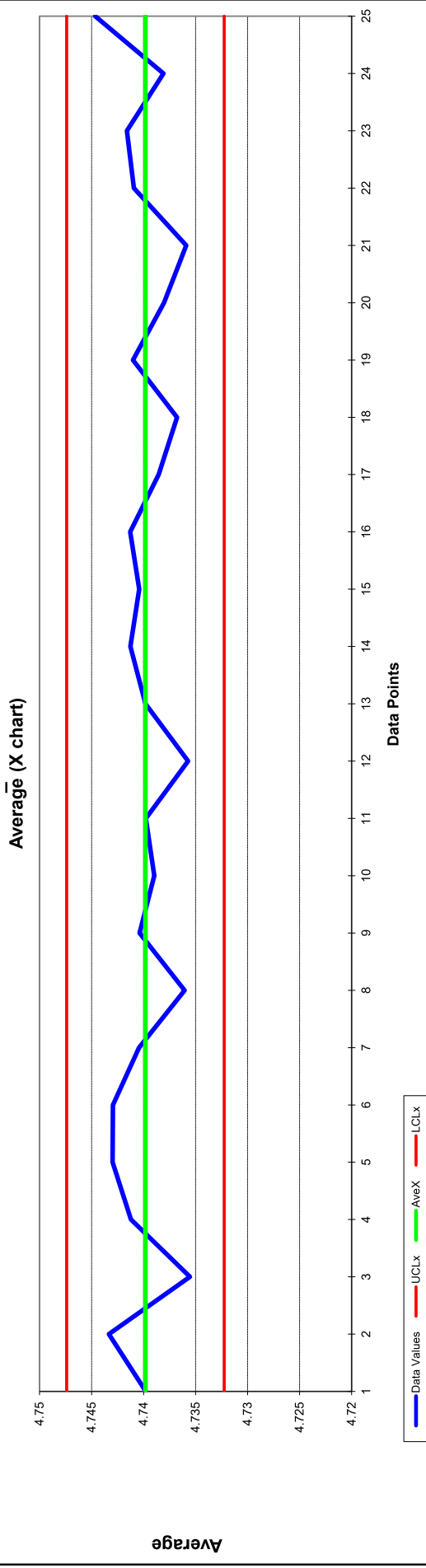
PROCESS CAPABILITY CERTIFICATION REPORT

PROCESS IS CAPABLE

LOCATION		CUSTOMER	SEWS
PART	Part number:	7165-2117	Date: 2/22/2022
	Drawing number	269668	Part description 9.5mm CABLE SEAL AND PLUG
	Tool number	7176A	Eng. chg. level 1
TOOL	Description	# Cavities 6	
		Units mm	
DIMENSION	SPEC	PLUS 4.75	MINUS 0.16
	Lwr Spec Limit	4.59	UPR Spec Limit
		NOMINAL	4.91

☒ Two sided spec (bilateral)
 ☐ One sided (MAX)

Number of readings per subgroup **6**



LOCATION		Customer		SEWS		Dept:		Twinsburg Metrology		Date:		2/22/2022		DESCRIPTIVE		STATISTICS		VALUES				
PART	TOOL	DIMENSION	Part number:		Part description		Eng. chg. level		Compound		A5103BL		Number of readings				150					
			Drawing number		7165-2117		269668		1				Lower spec limit (LSL)				4.5900					
			Tool number		7176A		# Cavities		6				Nominal				4.7500					
			Description		Inside Diameter		Units		mm				Upper spec limit (USL)				4.9100					
SPEC		Lwr Spec Li		4.75		4.59		PLUS		0.16		MINUS		0.16		Total sum		710.9729				
				NOMINAL		4.75		Upr Spec Li		4.91		Average readings ($\bar{x}$)				4.7398		4.7398				
																		Maximum		4.7604		
																		Minimum		4.7202		
																		Readings below LSL		0		
																		Readings above USL		0		
																		Average Range (R)		0.0157		
																		D ₂ Value		2.5340		
																		Upper capability index (CPU)		9.1700		
																		Lower capability index (CPL)		8.0729		
																		Capability index (C _p)		8.6215		
																		Process Capability (C _{pk})		8.0729		
																		Capability ratio (CR)		0.1160		
																		Std Deviation (n-1)		0.0064		
																		Std Deviation (n)		0.0064		
																		Variance (n-1)		0.0000		
																		Variance (n)		0.0000		
																		Performance index (P _p)		8.3026		
																		Performance ratio (P _R)		0.1204		
																		Performance index (P _{pk})		7.7743		
																				</		

Quality Synthetic Rubber

PROCESS CAPABILITY CERTIFICATION REPORT

PROCESS IS CAPABLE

Part Certification

☒ Two sided spec (bilateral)

☐ One sided (MIN)

☐ One sided (MAX)

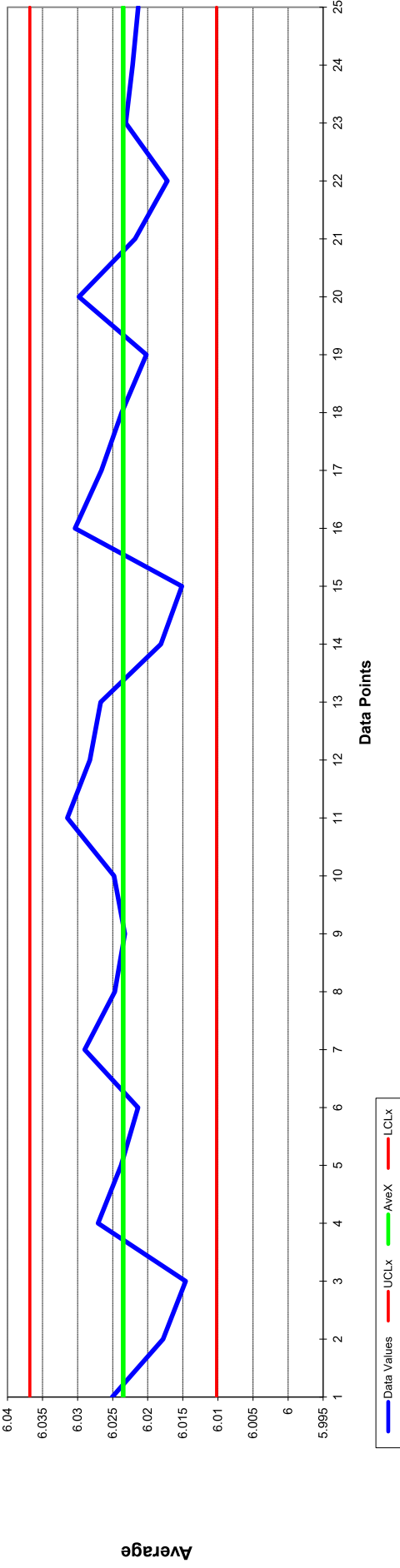
Number of readings per subgroup

6

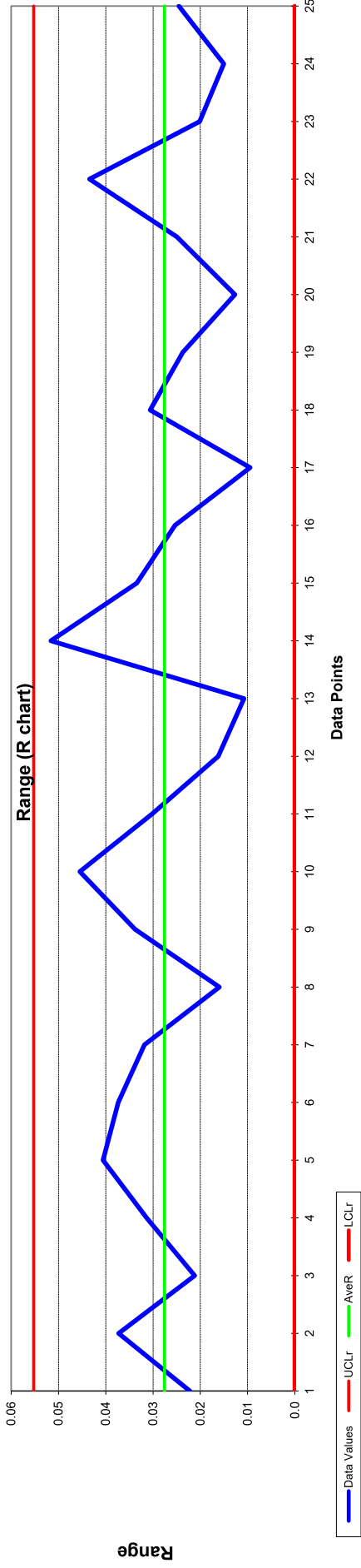
LOCATION PART TOOL DIMENSION	Customer	SEWS		Dept:	Twinsburg Metrology		Date:	2/22/2022	
	Part number:	7165-2117		Part description	9.5mm CABLE SEAL AND PLUG				
	Drawing number	269668		Eng. chg. level	1		Compound	A5103BL	
	Tool number	7176A		# Cavities	6				
	Description	Height		Units	mm				
SPEC		6.00		PLUS	0.16		MINUS	0.16	
Lwr Spec Limit		5.84		NOMINAL	6.0		Upr Spec Limit	6.16	

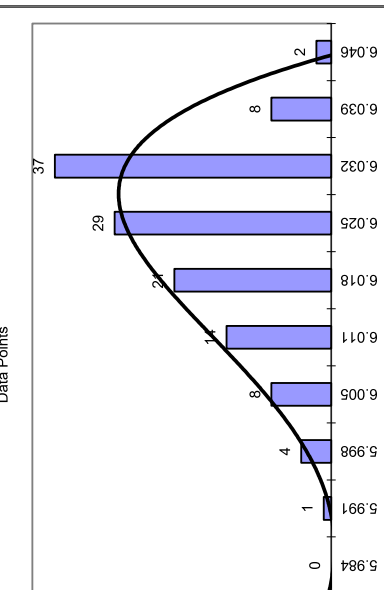
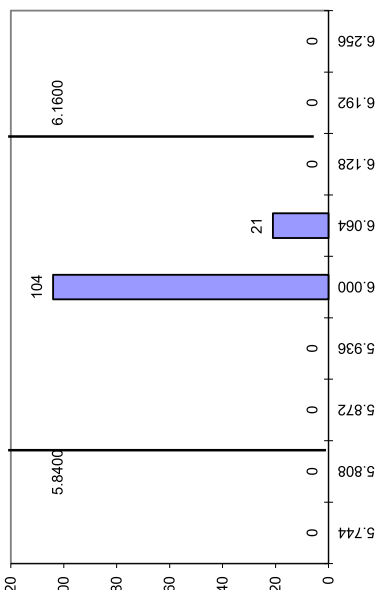
PROCESS		INFORMATION	
Significant trends of data points:		X Chart	R Chart
Increasing		RUN LENGTH	3
		HOW MANY RUNS	1
Decreasing		RUN LENGTH	5
		HOW MANY RUNS	1
Out of control limits			0
Consecutive data points above avg.			4
Consecutive data points below avg.			5

Average (X chart)



Range (R chart)



LOCATION		Customer / SEWS		Dept:		Twinsburg Metrology		Date:		2/22/2022		DESCRIPTIVE STATISTICS		VALUES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
PART		Part number:		7165-2117		Part description		9.5mm CABLE SEAL AND PLUG				Number of readings		150																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		Drawing number		269668		Eng. chg. level		1		Compound		A5103BL		Lower spec limit (LSL)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		Tool number		7176A		# Cavities		6				Nominal		6.0000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
TOOL		Description		Height		Units		mm				Upper spec limit (USL)		6.1600																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
DIMENSION		SPEC		6.0		PLUS		0.16		MINUS		0.16		Total sum																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		Lwr Spec Li		5.84		NOMINAL		6.0		Upr Spec Li		6.16		Average readings ($\bar{x}$)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
HISTOGRAM WITHOUT LIMITS														HISTOGRAM WITH LIMITS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Average Range														0.0222		6.0251		6.0178		6.0212		6.0271		6.0238		6.0214		0.0373		0.0406		6.0273		6.0236		6.0199		6.0248		6.0287		6.0131		6.0248		6.0251		6.0235		6.0279		6.0282		6.0289		6.0297		6.0303		6.0317		6.0326		6.0338		6.0344		6.0353		6.0362		6.0371		6.0380		6.0389		6.0398		6.0407		6.0416		6.0425		6.0434		6.0443		6.0452		6.0461		6.0470		6.0479		6.0488		6.0497		6.0506		6.0515		6.0524		6.0533		6.0542		6.0551		6.0560		6.0569		6.0578		6.0587		6.0596		6.0605		6.0614		6.0623		6.0632		6.0641		6.0650		6.0659		6.0668		6.0677		6.0686		6.0695		6.0704		6.0713		6.0722		6.0731		6.0740		6.0749		6.0758		6.0767		6.0776		6.0785		6.0794		6.0803		6.0812		6.0821		6.0830		6.0839		6.0848		6.0857		6.0866		6.0875		6.0884		6.0893		6.0902		6.0911		6.0920		6.0929		6.0938		6.0947		6.0956		6.0965		6.0974		6.0983		6.0992		6.1001		6.1010		6.1019		6.1028		6.1037		6.1046		6.1055		6.1064		6.1073		6.1082		6.1091		6.1100		6.1109		6.1118		6.1127		6.1136		6.1145		6.1154		6.1163		6.1172		6.1181		6.1190		6.1199		6.1208		6.1217		6.1226		6.1235		6.1244		6.1253		6.1262		6.1271		6.1280		6.1289		6.1298		6.1307		6.1316		6.1325		6.1334		6.1343		6.1352		6.1361		6.1370		6.1379		6.1388		6.1397		6.1406		6.1415		6.1424		6.1433		6.1442		6.1451		6.1460		6.1469		6.1478		6.1487		6.1496		6.1505		6.1514		6.1523		6.1532		6.1541		6.1550		6.1559		6.1568		6.1577		6.1586		6.1595		6.1604		6.1613		6.1622		6.1631		6.1640		6.1649		6.1658		6.1667		6.1676		6.1685		6.1694		6.1703		6.1712		6.1721		6.1730		6.1739		6.1748		6.1757		6.1766		6.1775		6.1784		6.1793		6.1802		6.1811		6.1820		6.1829		6.1838		6.1847		6.1856		6.1865		6.1874		6.1883		6.1892		6.1901		6.1910		6.1919		6.1928		6.1937		6.1946		6.1955		6.1964		6.1973		6.1982		6.1991		6.2000		6.2009		6.2018		6.2027		6.2036		6.2045		6.2054		6.2063		6.2072		6.2081		6.2090		6.2099		6.2108		6.2117		6.2126		6.2135		6.2144		6.2153		6.2162		6.2171		6.2180		6.2189		6.2198		6.2207		6.2216		6.2225		6.2234		6.2243		6.2252		6.2261		6.2270		6.2279		6.2288		6.2297		6.2306		6.2315		6.2324		6.2333		6.2342		6.2351		6.2360		6.2369		6.2378		6.2387		6.2396		6.2405		6.2414		6.2423		6.2432		6.2441		6.2450		6.2459		6.2468		6.2477		6.2486		6.2495		6.2504		6.2513		6.2522		6.2531		6.2540		6.2549		6.2558		6.2567		6.2576		6.2585		6.2594		6.2603		6.2612		6.2621		6.2630		6.2639		6.2648		6.2657		6.2666		6.2675		6.2684		6.2693		6.2702		6.2711		6.2720		6.2729		6.2738		6.2747		6.2756		6.2765		6.2774		6.2783		6.2792		6.2801		6.2810		6.2819		6.2828		6.2837		6.2846		6.2855		6.2864		6.2873		6.2882		6.2891		6.2900		6.2909		6.2918		6.2927		6.2936		6.2945		6.2954		6.2963		6.2972		6.2981		6.2990		6.2999		6.3008		6.3017		6.3026		6.3035		6.3044		6.3053		6.3062		6.3071		6.3080		6.3089		6.3098		6.3107		6.3116		6.3125		6.3134		6.3143		6.3152		6.3161		6.3170		6.3179		6.3188		6.3197		6.3206		6.3215		6.3224		6.3233		6.3242		6.3251		6.3260		6.3269		6.3278		6.3287		6.3296		6.3305		6.3314		6.3323		6.3332		6.3341		6.3350		6.3359		6.3368		6.3377		6.3386		6.3395		6.3404		6.3413		6.3422		6.3431		6.3440		6.3449		6.3458		6.3467		6.3476		6.3485		6.3494		6.3503		6.3512		6.3521		6.3530		6.3539		6.3548		6.3557		6.3566		6.3575		6.3584		6.3593		6.3602		6.3611		6.3620		6.3629		6.3638		6.3647		6.3656		6.3665		6.3674		6.3683		6.3692		6.3701		6.3710		6.3719		6.3728		6.3737		6.3746		6.3755		6.3764		6.3773		6.3782		6.3791		6.3800		6.3809		6.3818		6.3827		6.3836		6.3845		6.3854		6.3863		6.3872		6.3881		6.3890		6.3899		6.3908		6.3917		6.3926		6.3935		6.3944		6.3953		6.3962		6.3971		6.3980		6.3989		6.3998		6.4007		6.4016		6.4025		6.4034		6.4043		6.4052		6.4061		6.4070		6.4079		6.4088		6.4097		6.4106		6.4115		6.4124		6.4133		6.4142		6.4151		6.4160		6.4169		6.4178		6.4187		6.4196		6.4205		6.4214		6.4223		6.4232		6.4241		6.4250		6.4259		6.4268		6.4277		6.4286		6.4295		6.4304		6.4313		6.4322		6.4331		6.4340		6.4349		6.4358		6.4367		6.4376		6.4385		6.4394		6.4403		6.4412		6.4421		6.4430		6.4439		6.4448		6.4457		6.4466		6.4475		6.4484		6.4493		6.4502		6.4511		6.4520		6.4529		6.4538		6.4547		6.4556		6.4565		6.4574		6.4583		6.4592		6.4601		6.4610		6.4619		6.4628		6.4637		6.4646		6.4655		6.4664		6.4673		6.4682		6.4691		6.4700		6.4709		6.4718		6.4727		6.4736		6.4745		6.4754		6.4763		6.4772		6.4781		6.4790		6.4799		6.4808		6.4817		6.4826		6.4835		6.4844		6.4853		6.4862		6.4871		6.4880		6.4889		6.4898		6.4907		6.4916		6.4925		6.4934		6.4943		6.4952		6.4961		6.4970		6.4979		6.4988		6.4997		6.5006		6.5015		6.5024		6.5033		6.5042		6.5051		6.5060		6.5069		6.5078		6.5087		6.5096		6.5105		6.5114		6.5123		6.5132		6.5141		6.5150		6.5159		6.5168		6.5177		6.5186		6.5195		6.5204		6.5213		6.5222		6.5231		6.5240		6.5249		6.5258		6.5267		6.5276		6.5285		6.5294		6.5303		6.5312		6.5321		6.5330		6.5339		6.5348		6.5357		6.5366		6.5375		6.5384		6.5393		6.5402		6.5411		6.5420		6.5429		6.5438		6.5447		6.5456		6.5465		6.5474		6.5483		6.5492		6.5501		6.5510		6.5519		6.5528		6.5537		6.5546		6.5555		6.5564		6.5573		6.5582		6.5591		6.5600		6.5609		6.5618		6.5627		6.5636		6.5645		6.5654		6.5663		6.5672		6.5681		6.5690		6.5699		6.5708		6.5717		6.5726		6.5735		6.5744		6.5753		6.5762		6.5771		6.5780		6.5789		6.5798		6.5807		6.5816		6.5825		6.5834		6.5843		6.5852		6.5861		6.5870		6.5879		6.5888		6.5897		6.5906		6.5915		6.5924		6.5933		6.5942		6.5951		6.5960		6.5969		6.5978		6.5987		6.5996		6.6005		6.6014		6.6023		6.6032		6.6041		6.6050		6.6059		6.6068		6.6077		6.6086		6.6095		6.6104		6.6113		6.6122		6.6131		6.6140		6.6149		6.6158		6.6167		6.6176		6.6185		6.6194		6.6203		6.6212		6.6221		6.6230		6.6239		6.6248		6.6257		6.6266		6.6275		6.6284		6.6293		6.6302		6.6311		6.6320		6.6329		6.6338		6.6347		6.6356		6.6365		6.6374		6.6383		6.6392		6.6401		6.6410		6.6419		6.6428		6.6437		6.6446		6.6455		6.6464		6.6473		6.6482		6.6491		6.6500		6.6509		6.6518		6.6527		6.6536		6.6545		6.6554		6.6563		6.6572		6.6581		6.6590		6.6599		6.6608		6.6617		6.6626		6.6635		6.6644		6.6653		6.6662		6.6671		6.6680		6.6689		6.6698		6.6707		6.6716		6.6725		6.6734		6.6743		6.6752		6.6761		6.6770		6.6779		6.6788		6.6797		6.6806		6.6815		6.6824		6.6833		6.6842		6.6851		6.6860		6.6869		6.6878		6.6887		6.6896		6.6905		6.6914		6.6923		6.6932		6.6941		6.6950		6.6959		6.6968		6.6977		6.6986		6.6995		6.7004		6.7013		6.7022		6.7031		6.7040		6.7049		6.7058		6.7067		6.7076		6.7085		6.7094		6.7103		6.7112		6.7121		6.7130		6.7139		6.7148		6.7157		6.7166		6.7175		6.7184		6.7193		6.7202		6.7211		6.7220		6.7229		6.7238		6.7247		6.7256		6.7265		6.7274		6.7283		6.7292		6.7301		6.7310		6.7319		6.7328		6.7337		6.7346		6.7355		6.7364		6.7373		6.7382		6.7391		6.7400		6.7409		6.7418		6.7427		6.7436		6.7445	

Quality Synthetic Rubber

PROCESS CAPABILITY CERTIFICATION REPORT

PROCESS IS CAPABLE

Two sided spec (bilateral)

One sided (MIN)

One sided (MAX)

Number of readings per subgroup6

LOCATION

CustomerSEWS

Dept:Twinsburg Metrology

Date:2/22/2022

PART

Part number:7165-2117

Part description9.5mm CABLE SEAL AND PLUG

Drawing number269668

Eng. chg. level1

CompoundA5103BL

TOOL

Tool number7176A

Cavities6

Unitsmm

DIMENSION

DescriptionOutside Diameter

SPEC16.45

PLUS0.25

MINUS0.25

Lwr Spec Limit16.2

NOMINAL16.45

Upr Spec Limit16.7

PROCESS

INFORMATION

Significant trends of data points:

IncreasingRUN LENGTH4

DecreasingRUN LENGTH3

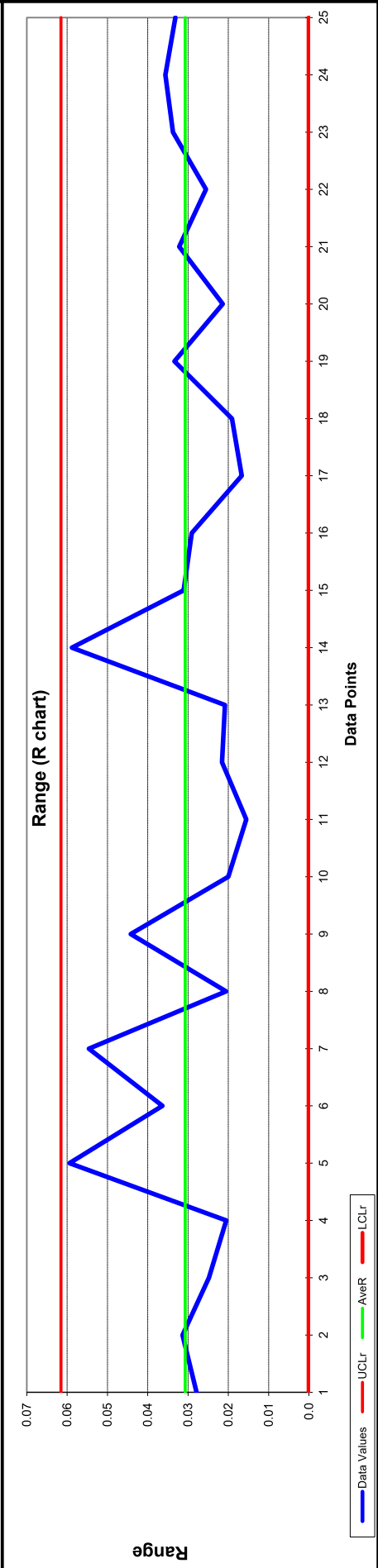
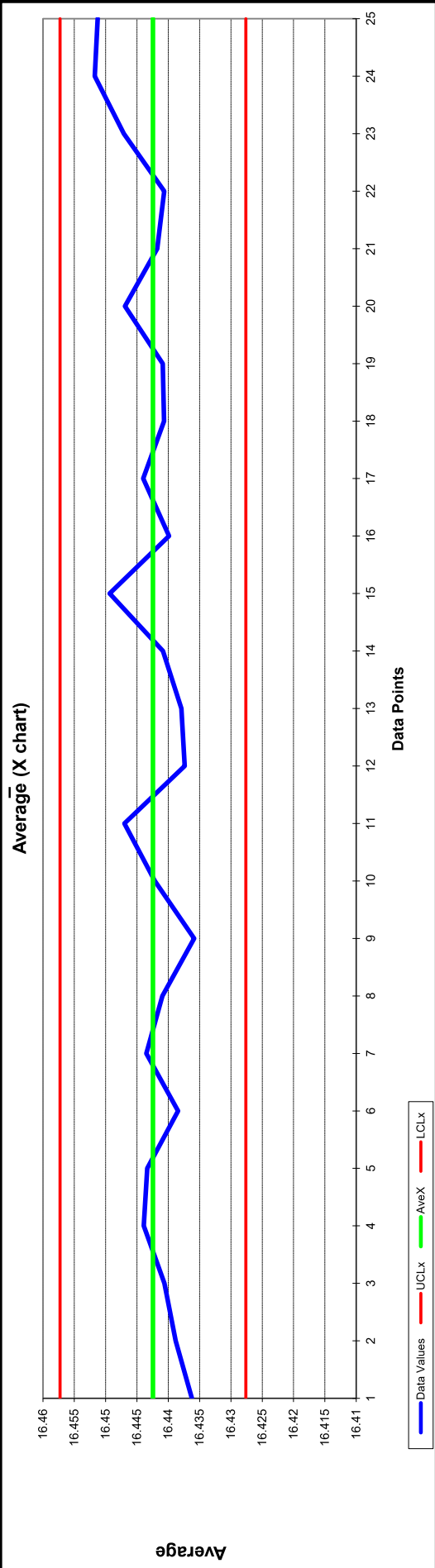
Out of control limitsHOW MANY RUNS3

Consecutive data points above avg.0

Consecutive data points below avg.3

X Chart

R Chart



Quality Synthetic Rubber

PROCESS CAPABILITY CERTIFICATION REPORT

PROCESS IS CAPABLE

Part Certification

☒ Two sided spec (bilateral)

☐ One sided (MIN)

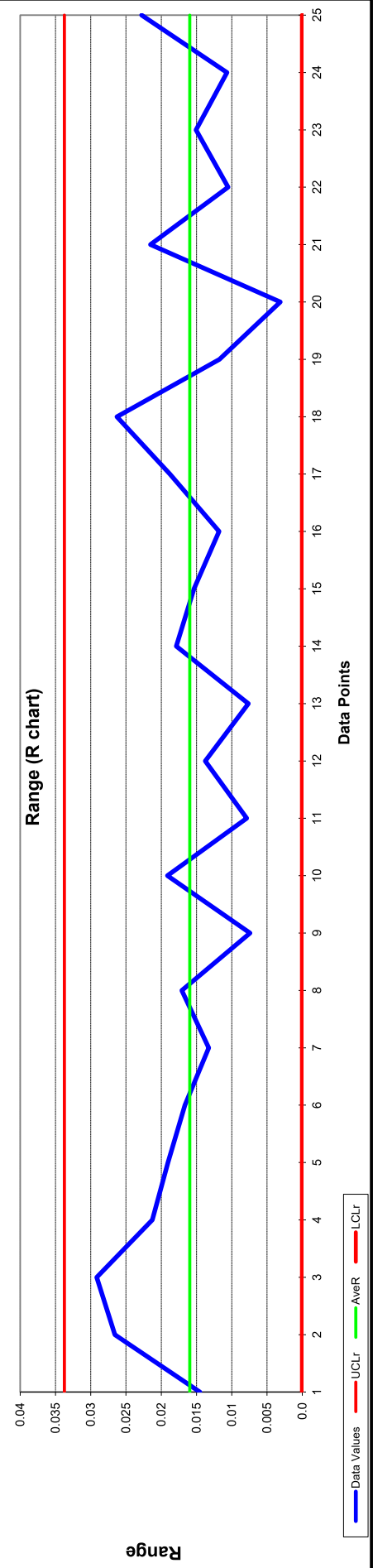
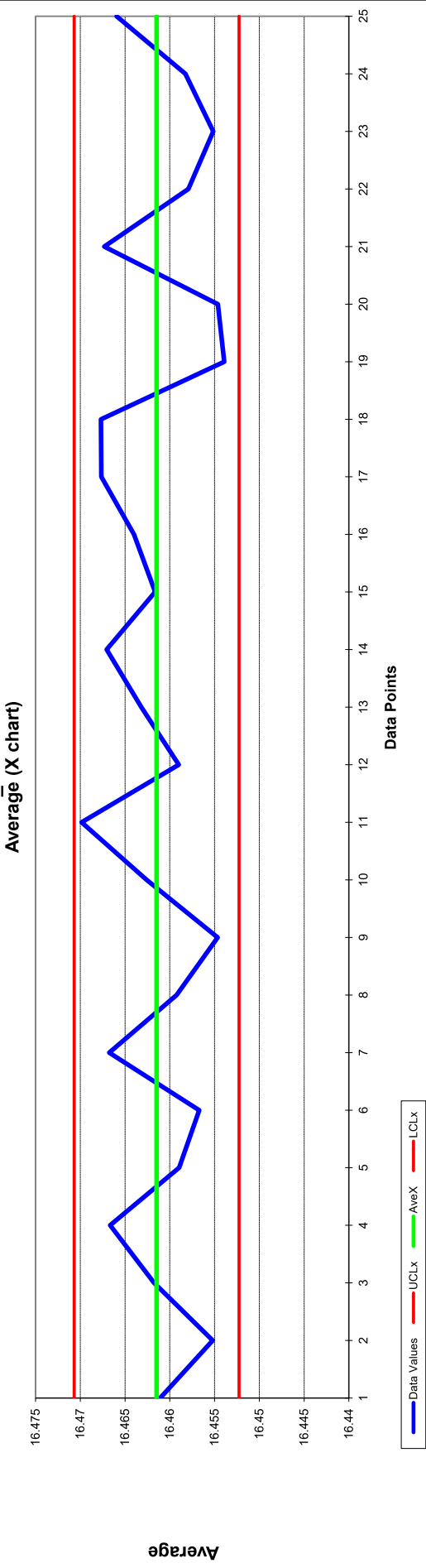
☐ One sided (MAX)

Number of readings per subgroup

5

LOCATION PART TOOL DIMENSION	Customer	SEWS		Dept:	Twinsburg Metrology		Date:	4/11/2022	
	Part number:	7165-2117		Part description	9.5mm CABLE SEAL AND PLUG				
	Drawing number	T-2696681		Eng. chg. level	1		Compound A5004GN		
	Tool number	7306		# Cavities	326				
	Description	Outside Diameter		Units	mm				
	SPEC	16.45	PLUS	0.25	MINUS				
	Lwr Spec Limit	16.2	NOMINAL	16.45	Upr Spec Limit				
					16.7				

PROCESS		INFORMATION	
Significant trends of data points:		X Chart	R Chart
Increasing	RUN LENGTH	4	3
Decreasing	HOW MANY RUNS	1	2
	RUN LENGTH	3	5
	HOW MANY RUNS	3	1
Out of control limits		0	0
Consecutive data points above avg.		6	5
Consecutive data points below avg.		3	3



LOCATION		Customer		SEWS		Dept:		Twinsburg Metrology		Date:		4/11/2022		DESCRIPTIVE		STATISTICS		VALUES			
PART	Part number:		7165-2117		Part description		9.5mm CABLE SEAL AND PLUG		1		Compound		A5004GN		Number of readings				125		
	Drawing number		T-2696681		Eng. chg. level		1		326						Lower spec limit (LSL)				16.2000		
	Tool number		7306		# Cavities				326						Nominal				16.4500		
	Description		Outside Diameter		Units		mm								Upper spec limit (USL)				16.7000		
TOOL	SPEC		16.45		PLUS		0.25		MINUS		0.25				Total sum				2,057.6846		
	Lwr Spec Li		16.2		NOMINAL		16.45		Upr Spec Li		16.7				Average readings ($\bar{x}$)				16.4615		
															Maximum				16.4807		
															Minimum				16.4420		
HISTOGRAM WITH LIMITS																					
HISTOGRAM WITHOUT LIMITS																					
PERFORMANCE INDEX (Ppk)																					
n		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
R E A D I N G S	1	16.4654	16.4538	16.4422	16.4787	16.4696	16.4475	16.4624	16.4632	16.4564	16.4528	16.4733	16.4682	16.4683	16.4644	16.4705	16.4595	16.4599	16.4777	16.4554	16.4528
	2	16.4654	16.46	16.4653	16.4655	16.4559	16.4595	16.4639	16.462	16.4533	16.4661	16.4726	16.4555	16.4633	16.4635	16.4623	16.4713	16.4642	16.4803	16.46	16.4533
	3	16.4803	16.4685	16.4639	16.4637	16.4506	16.4543	16.466	16.4621	16.4507	16.4568	16.4657	16.4545	16.459	16.4672	16.4601	16.4628	16.4599	16.4663	16.4561	16.4556
	4	16.4635	16.442	16.466	16.4685	16.4572	16.4641	16.4757	16.4629	16.4547	16.4654	16.4723	16.457	16.4641	16.479	16.4603	16.4622	16.4756	16.4609	16.45	16.4546
	5	16.4509	16.4519	16.4714	16.4574	16.458	16.4618	16.4659	16.4461	16.4581	16.4719	16.4654	16.4603	16.4666	16.4612	16.4551	16.4642	16.4787	16.454	16.4482	16.4559



Accredited Laboratory

A2LA has accredited

QUALITY SYNTHETIC RUBBER, INC.

North Canton, OH

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 4th day of November 2020.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0763.01
Valid to September 30, 2022



ANNUAL TESTING

LABORATORY MATERIAL TEST REPORT

serial no.: 05102225

CUSTOMER :	SEWS	COMPOUND:	A5004
PART NO. :	71652117	LOT NO. :	13625212
PART NAME:	SEAL-A1096A	MATR'L. :	SILICONE
TEST DATE:	02-05-22	SPEC.NO.:	PRINT

TYPE OF TEST	/ SPECIFICATION	/ TEST RESULTS
ORIGINAL PROPERTIES, ASTM D2240		
HARDNESS, SHORE A,	50 +- 5	49

Approved by Richard Rybka
Richard Rybka, Technical Manager

Date: May 10, 2022

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