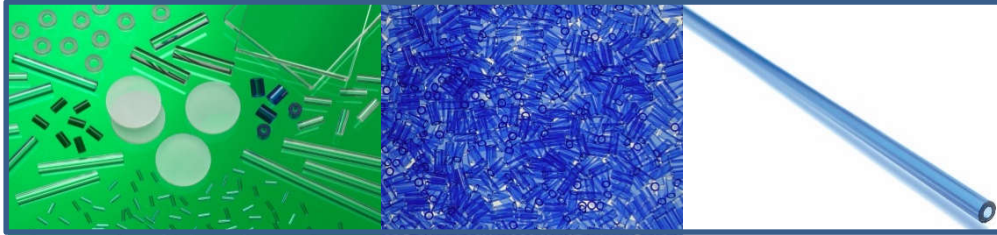


Precision Glass GTMS Sealing Component Specialists



RICHLAND GLASS COMPANY based in Vineland, NJ is an ISO 9001 certified glass manufacturer and component fabricator. Richland has been manufacturing a wide range of precision cut components in our 100,000 sq. ft. facility for over 50 years.

The product line includes straight beads and windows for hermetic sealing; cut rings for anode spacers, end seals for capacitors, enclosures for crystals, diodes, connectors, photodiodes, infrared devices, and special items for semiconductor applications.

Using a diamond abrasive cutting method, Richland has the capability to cut even extremely small items. Our equipment is designed to guarantee accuracy in both length and parallelism. Richland products are free from chips and our cleaning processes ensure a product without contaminants, ready for processing.

Manufacturing & Fabricating Capabilities:

GLASS TYPES MELTED AND USED Richland can draw raw glass frit or cullet and redraw glass tubing and capillaries. Direct drawn glass tubing is available in most electronic glasses plus many special or custom Richland formulas in clear, blue, green, and brown. Custom shapes can be made to meet a specific design requirement.

Glass types commonly available are: Pyrex/Duran Borosilicate glass with high heat resistance, 33 expansion and 51 expansion; Soda Lime glass for sealing to Stainless Steel, high electrical resistance, 93 expansion; Tungsten & Kovar sealing glasses for sealing to Kovar alloys, high electrical resistance, 51 expansion; Reed Switch glass formulations for a wide range of applications.

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BOROSILICATE KOVAR SEALING GLASSES - Seals to Kovar & Kovar Alloys						
Glass Code	RSG4	8250	7052	RG47	Fusite K	7070
Manufacturer	Corning	Schott	Corning	Richland	Fusite	Corning
Color	Clear	Clear	Clear	Green	Green	Green
Expansion $10^{-7} / ^\circ\text{C}$	55	50	47	47	45	32
Density gms / cm ³	2.33	2.28	2.27	2.1	2.2	2.13
Strain Point $^\circ\text{C}$	530	490	440	437	440	456
Annealing Point $^\circ\text{C}$	575	507	484	482	500	496
Softening Point $^\circ\text{C}$	785	720	712	716	695	
Working Point $^\circ\text{C}$	1190	1055	1128	1115	1010	1068
Dielectric Constant 1M H ₂	5.7	4.9	5.1			4.1
Refractive Index	1.49	1.487	1.484			1.47
COMPOSITION	SiO ₂ - BaO B ₂ O ₃	SiO ₂ - B ₂ O ₃	SiO ₂ - BaO B ₂ O ₃	SiO ₂ - BaO B ₂ O ₃		

COMPRESSION SEALING & SODA LIME GLASSES - Seals to Stainless Steel & Iron				
Glass Code	RG93	8061	SG36	WG6
Manufacturer	Richland	Schott	Osram	Nipro
Color	Blue	Blue	Clear	Clear
Expansion $10^{-7} / ^\circ\text{C}$	97	93	92	93
Density gms / cm ³	2.6	2.6	2.62	2.54
Strain Point $^\circ\text{C}$	415	450	455	490
Annealing Point $^\circ\text{C}$	454	480	485	525
Softening Point $^\circ\text{C}$	659	677	675	705
Working Point $^\circ\text{C}$	1045	1035	1020	
Dielectric Constant 1M H ₂	7.35	6.7	6	
Refractive Index		1.514		
COMPOSITION	SiO ₂ - BaO ZnO	SiO ₂ - BaO ZnO	SiO ₂ - BaO Na ₂ O	SiO ₂ - BaO CaO

REED SWITCH GLASSES			
Glass Code	RG92G	SRI	8516
Manufacturer	Richland	NEG	Schott
Color	Green	Green	Green
Expansion $10^{-7} / ^\circ\text{C}$	92.5	92.5	
Density gms / cm ³	2.53	2.53	
Strain Point $^\circ\text{C}$	410	410	
Annealing Point $^\circ\text{C}$	450	450	
Softening Point $^\circ\text{C}$	635	635	
Working Point $^\circ\text{C}$	965	965	
Dielectric Constant 1M H ₂	4.9	4.9	

33 EXPANSION GLASSES - SPACERS, RASCHIG RINGS		
Glass Code	8330	Simax
Manufacturer	Schott	Kavalier
Trade Name	Duran	Simax
Expansion $10^{-7} / ^\circ\text{C}$	33	33.5
Density gms / cm ³	2.2	2.23
Strain Point $^\circ\text{C}$		
Annealing Point $^\circ\text{C}$	560	
Softening Point $^\circ\text{C}$	820	820
Working Point $^\circ\text{C}$	1270	1260
Dielectric Constant 1M H ₂	4.6	
Refractive Index	1.473	
COMPOSITION	SiO ₂ - B ₂ O ₃	SiO ₂ - B ₂ O ₃

Availability Legend	
	Always Available
	Campaigned
	Limited
	Contact us

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DIRECT DRAW AND REDRAW: Richland has the in-house capability for not only redraw of glass tubing but also glass melting and direct draw of tubing. Drawn glass offers homogeneous glass color after sealing. Minimized bubbles and 100% density equal better insulation resistance after sealing.

Proprietary design glass tanks and drawing orifice are built and maintained in-house to keep costs and lead times low

We offer OD dimensions from 0.3mm to 4.0mm, ID dimensions with tolerances out to +/- 0.025mm (0.001 in). Tubing is available in many electronic glasses. Our glass re-draw tubing is also excellent for use in hermetic packaging, lighting and special sealing beads.

PRECISION GLASS CUTTING: Richland's Diamond wheel gang or automated saw cutting processing of glass virtually eliminates chips, leaving no glass particles in the hole and minimize glass splatters on Eyelet and Bonding areas. **Tolerances out to +/-0.03mm (0.0012")** zero in on volume and weight, for uniform glass to metal seals. Designed for accuracy in both length and parallelism

ENGINEERING SERVICES: Richland's experienced and creative engineering staff provides a high level of assistance in helping you find the right glass and the most efficient process for your application. Fast prototyping and no tooling costs for most shapes, Richland can help all the way through from initial concept to production volumes.

QUALITY:

Richland prides ourselves in our quality and quality processes all governed through ISO 9001-2015 certification.

Markets & Applications

TELECOMMUNICATIONS

Modulators, Lasers, Detectors, Switches

AVIONICS, DEFENSE, AERSPACE

Connectors, Sensors, Hybrid Packages



AUTOMOTIVE

Lighting, Airbag Ignitors

ANALYTICS

Raschig Rings, Capillary Tubes

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