globe® SCIENTIFIC INC.

Diamond RealSeal™
Plastic Laboratory Bottles

Premium bottles engineered to meet the requirements of the most demanding applications.

Diamond RealSeal™

Plastic Laboratory Bottles

Diamond RealSeal™ Plastic Laboratory Bottles from Globe Scientific meet the requirements of the most demanding applications. Rugged and durable, these bottles are a safe, shatterproof alternative to glass bottles for collection, storage, or shipping of samples, media, and reagents. Diamond RealSeal™ Bottles are available in a wide range of shapes, sizes, and materials to accommodate most application needs. Small or large, wide mouth or narrow, natural or amber — even large format with handles — the Diamond RealSeal™ line includes the most frequently used bottles as well as some less common styles.

Diamond RealSeal™ Laboratory bottles are precision molded from virgin resins for consistent wall thickness and smooth interior and exterior surfaces. The bottles include leak-proof polypropylene caps that are engineered with an integrated seal ring for leak-proof closure. Caps are linerless to reduce the contamination risk associated with liners. RealSeal™ bottles and caps employ top quality, semi-buttressed threads with straight shoulders that outperform inferior bottles with round threads. These leak-proof bottles are designed and tested to withstand the highest pressure thresholds in the industry.*

The Diamond RealSeal™ Difference:

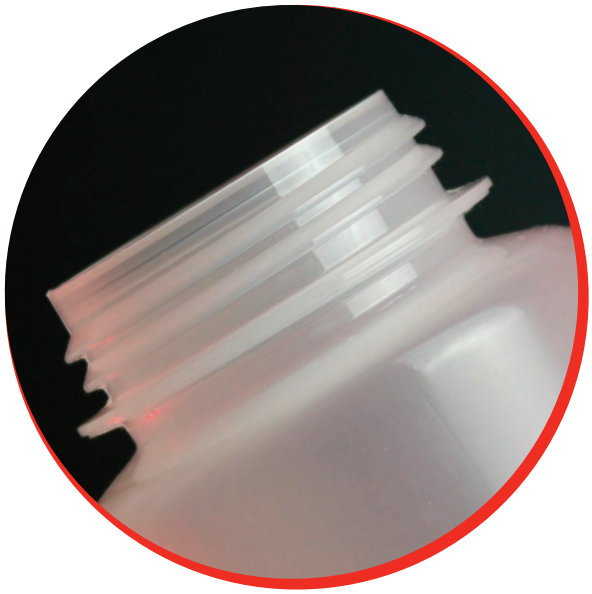
Medical Grade Resins to Meet Demanding Requirements
- USP Class VI for pharma and research applications
- FDA CFR-21 compliant for food contact
- Free of heavy metals and RoHS compliant
- BPA and phthalate free

Precision Molded for Consistent Wall Thickness and Smooth Surfaces
- Improves bottle and seal integrity
- Reduces content "hang-up"
- Manufactured in an ISO 13485 and ISO 9001 certified facility

Leakproof, Linerless Caps for Secure Closure
- Integrated seal ring molded in cap to prevent leaks
- Linerless cap design to reduce contamination risks associated with liners: wrinkles, tears, wear, corrosion, reaction and leakage

Value
- Laboratory bottle quality and performance with savings associated with "economy" bottles
- Reduced shipping costs compared to glass bottles

Safety/Convenience
- Safe, shatter-resistant alternative to glass bottles
- Lighter than glass for improved handling



Diamond RealSeal™ bottles and caps are designed with semi-buttressed threads for superior performance compared to round threads found on inferior bottles.

globe® SCIENTIFIC INC.

Diamond RealSeal™

NEW!

Large Format Plastic Laboratory Bottles

Diamond RealSeal™ Large Format Plastic Laboratory Bottles from Globe Scientific meet the requirements of the most demanding applications. These new additions to the Diamond RealSeal offering expand the application range to volumes up to 8 liters with several material and design options.

Like the rest of the Diamond RealSeal line, these new bottles are precision molded from virgin resins for consistent wall thickness and smooth interior and exterior surfaces. The bottles include leak-proof polypropylene caps that are engineered with an integrated seal ring for leak-proof closure.

The Diamond RealSeal™ Difference:

Medical Grade Resins to Meet Demanding Requirements
- USP Class VI for pharma and research applications
- FDA CFR-21 compliant for food contact
- Free of heavy metals and RoHS compliant
- BPA and phthalate free

Precision Molded for Consistent Wall Thickness and Smooth Surfaces
- Improves bottle and seal integrity
- Reduces content "hang-up"
- Manufactured in an ISO 13485 and ISO 9001 certified facility

Leakproof, Linerless Caps for Secure Closure
- Integrated seal ring molded in cap to prevent leaks
- Linerless cap design to reduce contamination risks associated with liners: wrinkles, tears, wear, corrosion, reaction and leakage

Value
- Laboratory bottle quality and performance with savings associated with "economy" bottles
- Reduced shipping costs compared to glass bottles

Safety/Convenience
- Safe, shatter-resistant alternative to glass bottles
- Lighter than glass for improved handling

Diamond RealSeal™ bottles and caps are designed with semi-buttressed threads for superior performance compared to round threads found on inferior bottles.

Diamond RealSeal™ Leak Testing Protocol

Leak testing and "Leak proof" designation for bottles above 1000mL:

- Bottles are filled to 80% of nominal capacity, closed per minimum torque requirements
- Bottles are inverted and inspected for leakage
- Bottles are partially inverted with water in contact with closure for 24 hours and are inspected for leakage

Standard leak testing of Diamond RealSeal™ bottles is performed with water. Testing with other liquids may yield different results.

Wide Mouth Bottles

Wide mouth bottles are perfect for sample collection and facilitate the rapid filling and emptying of solids, powders, and viscous liquids.

High-Density Polyethylene (HDPE)

- Safe for freezer storage down to -100°C
- Resistant to most corrosives and suitable for a wide variety of laboratory uses

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7010030	30mL	28mm	21mm	36mm	63mm	12 & 72
7010060	60mL	28mm	21mm	39mm	85mm	12 & 72
7010125	125mL	38mm	28mm	50mm	99mm	12 & 72
7010250	250mL	43mm	33mm	61mm	133mm	12 & 72
7010500	500mL	53mm	44mm	73mm	170mm	12 & 48
7011000	1000mL	63mm	53mm	91mm	199mm	6 & 24

Polypropylene (PP)

- Suitable for autoclaving at 121°C
- Improved chemical resistance and clarity
- Resistant to most corrosives and suitable for a wide variety of laboratory uses
- Approved for use from -40 to 121°C

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7000030	30mL	28mm	21mm	36mm	63mm	12 & 72
7000060	60mL	28mm	21mm	39mm	85mm	12 & 72
7000125	125mL	38mm	28mm	50mm	99mm	12 & 72
7000250	250mL	43mm	33mm	61mm	133mm	12 & 72
7000500	500mL	53mm	44mm	73mm	170mm	12 & 48
7001000	1000mL	63mm	53mm	91mm	199mm	6 & 24

Low-Density Polyethylene (LDPE)

- Better clarity than HDPE
- Flexible with excellent impact resistance

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7020030	30mL	28mm	21mm	36mm	63mm	12 & 72
7020060	60mL	28mm	21mm	39mm	85mm	12 & 72
7020125	125mL	38mm	28mm	50mm	99mm	12 & 72
7020250	250mL	43mm	33mm	61mm	133mm	12 & 72
7020500	500mL	53mm	44mm	73mm	170mm	12 & 48
7021000	1000mL	63mm	53mm	91mm	199mm	6 & 24

Narrow Mouth Bottles

Narrow mouth bottles improve pouring of liquid contents making them perfect for storing and shipping liquids.

High-Density Polyethylene (HDPE)

- Safe for freezer storage down to -100°C
- Resistant to most corrosives and suitable for a wide variety of laboratory uses

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7060030	30mL	20mm	14mm	36mm	62mm	12 & 72
7060060	60mL	20mm	14mm	41mm	85mm	12 & 72
7060125	125mL	24mm	18mm	51mm	99mm	12 & 72
7060250	250mL	24mm	18mm	61mm	133mm	12 & 72
7060500	500mL	28mm	21mm	73mm	170mm	12 & 48
7061000	1000mL	38mm	28mm	92mm	216mm	6 & 24

Polypropylene (PP)

- Suitable for autoclaving at 121°C
- Improved chemical resistance and clarity
- Resistant to most corrosives and suitable for a wide variety of laboratory uses
- Approved for use from -40 to 121°C

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7050030	30mL	20mm	14mm	36mm	62mm	12 & 72
7050060	60mL	20mm	14mm	41mm	85mm	12 & 72
7050125	125mL	24mm	18mm	51mm	99mm	12 & 72
7050250	250mL	24mm	18mm	61mm	133mm	12 & 72
7050500	500mL	28mm	21mm	73mm	170mm	12 & 48
7051000	1000mL	38mm	28mm	92mm	216mm	6 & 24

Low-Density Polyethylene (LDPE)

- Better clarity than HDPE
- Flexible with excellent impact resistance

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7070030	30mL	20mm	14mm	36mm	62mm	12 & 72
7070060	60mL	20mm	14mm	41mm	85mm	12 & 72
7070125	125mL	24mm	18mm	51mm	99mm	12 & 72
7070250	250mL	24mm	18mm	61mm	133mm	12 & 72
7070500	500mL	28mm	21mm	73mm	170mm	12 & 48
7071000	1000mL	38mm	28mm	92mm	216mm	6 & 24

Rectangular Bottles

Rectangular bottles store and pack efficiently to maximize space utilization.

High-Density Polyethylene (HDPE)

- Safe for freezer storage down to -100°C
- Resistant to most corrosives and suitable for a wide variety of laboratory uses

Item #	Capacity	Closure Size	Neck I.D.	Dimensions w/Cap (L x W x H)	Units
7100125	125mL	28mm	21mm	59 x 40 x 99mm	12 & 72
7100250	250mL	38mm	28mm	75 x 52 x 116mm	12 & 72
7100500	500mL	48mm	38mm	100 x 64 x 144mm	12 & 48
7101000	1000mL	53mm	44mm	127 x 67 x 178mm	6 & 24

Large Format Bottles

Select large format wide mouth bottles (2L rectangular, 4L round and 4L square) include a strong, integrated easy-grip handle for safe and convenient pouring of contents.

- Ideal for storage and sterilization of bulk reagents, contaminated slides, or other small laboratory items

High-Density Polyethylene (HDPE)

- Safe for freezer storage down to -100°C
- Resistant to most corrosives and suitable for a wide variety of laboratory uses

Item #	Capacity	Closure Size	Neck I.D.	Bottle Dims	Height w/Cap	Units
7012000	2L Round	100mm	90mm	119mm Dia.	245mm	EA & 6
7102000	2L Rect.	63mm	52mm	150 x 97mm	237mm	4 & 12
7174000	4L Round	100mm	86mm	163mm Dia.	302mm	EA & 6
7184000	4L Square	100mm	87.5mm	148mm Sq.	297mm	EA & 6

Polypropylene (PP)

- Suitable for autoclaving at 121°C
- Improved chemical resistance and clarity
- Resistant to most corrosives and suitable for a wide variety of laboratory uses
- Approved for use from -40 to 121°C

Item #	Capacity	Closure Size	Neck I.D.	Bottle Dims	Height w/Cap	Units
7002000	2L Round	100mm	90mm	119mm Dia.	245mm	EA & 6
7154000	4L Round	100mm	86mm	163mm Dia.	302mm	EA & 6
7164000	4L Square	100mm	87.5mm	148mm Sq.	297mm	EA & 6

Diamond RealSeal™

Amber Bottles

Amber bottles reduce UV light transmission to protect light sensitive contents during storage and transport. All Diamond RealSeal™ amber bottles comply with US Pharmacopeia requirements for maximum light transmission.

High-Density Polyethylene (HDPE)

- Safe for freezer storage down to -100°C
- Resistant to most corrosives

Wide Mouth

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7010030AM	30mL	28mm	21mm	36mm	63mm	12 & 72
7010060AM	60mL	28mm	21mm	39mm	85mm	12 & 72
7010125AM	125mL	38mm	28mm	50mm	99mm	12 & 72
7010250AM	250mL	43mm	33mm	61mm	133mm	12 & 72
7010500AM	500mL	53mm	44mm	73mm	170mm	12 & 48
7011000AM	1000mL	63mm	53mm	91mm	199mm	6 & 24

Narrow Mouth

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7060030AM	30mL	20mm	14mm	36mm	62mm	12 & 72
7060060AM	60mL	20mm	14mm	41mm	85mm	12 & 72
7060125AM	125mL	24mm	18mm	51mm	99mm	12 & 72
7060250AM	250mL	24mm	18mm	61mm	133mm	12 & 72
7060500AM	500mL	28mm	21mm	73mm	170mm	12 & 48
7061000AM	1000mL	38mm	28mm	92mm	216mm	6 & 24

Large Format Wide Mouth Bottles

- Wide mouth provides easy filling and access to bulk reagents and large samples
- Suitable for freezer storage down to -100° C

Low-Density Polyethylene (LDPE)

- Better clarity than HDPE
- Flexible with excellent impact resistance

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7022000	2L	100mm	90mm	118mm	245mm	EA & 6

Amber High-Density Polyethylene (HDPE)

- Reduce UV Light transmission to protect light sensitive contents during storage and transport
- Comply with US Pharmacopeia requirements for maximum light transmission

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7012000AM	2L	100mm	90mm	118mm	245mm	EA & 6

Large Format Narrow Mouth Bottles

- Narrow mouth bottles improve pouring of liquid contents making them perfect for collecting and storing liquids
- 4 Liter and 8 Liter bottles have an integrated shoulder loop for attaching an I.D. tag

Polypropylene (PP)

- Suitable for autoclaving at 121°C
- Improved chemical resistance and clarity
- Resistant to most corrosives and suitable for a wide variety of laboratory uses
- Amber polypropylene bottles reduce UV Light transmission to protect light sensitive contents during storage and transport
- Amber bottles comply with US Pharmacopeia requirements for maximum light transmission

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7052000	2L	38mm	27mm	118mm	252mm	EA & 6
7054000	4L	38mm	26mm	154mm	340mm	EA & 6
7058000	8L	53mm	39mm	195mm	415mm	EA & 6
AMBER						
7052000AM	2L	24mm	27mm	118mm	252mm	EA & 6
7054000AM	4L	28mm	26mm	154mm	340mm	EA & 6
7058000AM	8L	38mm	39mm	195mm	415mm	EA & 6

Low-Density Polyethylene (LDPE)

- Better clarity than HDPE
- Flexible with excellent impact resistance
- Suitable for freezer storage down to -100° C

Item #	Capacity	Closure Size	Neck I.D.	Bottle O.D.	Height w/Cap	Units
7072000	2L	38mm	27mm	118mm	252mm	EA & 6
7074000	4L	38mm	26mm	154m	340mm	EA & 6
7078000	8L	53mm	39mm	195m	415mm	EA & 6

Diamond RealSeal™ Leak Testing Protocol

Standard leak testing of Diamond RealSeal™ bottles is performed with water.*

Leak testing and "Leak proof" designation for bottles up to 1000mL:

- Bottles are filled to 80% of nominal capacity, closed per minimum torque requirement
- Inverted bottles are subjected to pressure test of 85kPa and inspected for leakage.

NOTE: *This test protocol applies more than 5x the pressure used by competitors to claim "leak proof" closures.*

Leak testing and "Leak proof" designation for bottles above 1000mL:

- Bottles are filled to 80% of nominal capacity, closed per minimum torque requirements
- Bottles are inverted and inspected for leakage
- Bottles are partially inverted with water in contact with closure for 24 hours and are inspected for leakage

*NOTE: Testing with other liquids may yield different results.

Application Torques

	Bottle Capacity (mL)	Neck Finish (mm)	Minimum Torque (in-lb)	Maximum Torque (in-lb)
Wide Mouth				
	30	28-415	15.6	21.7
	60	28-415	15.6	21.7
	125	38-415	21.7	30.4
	250	43-415	27.8	38.2
	500	53-415	33	45.1
	1000 HDPE/LDPE	63-415	40	55.5
	1000 PP	63-415	50	55.5
Narrow Mouth				
	30	20-415	9.5	13.9
	60	20-415	9.5	13.9
	125	24-415	11.3	16.5
	250	24-415	11.3	16.5
	500	28-415	15.6	21.7
	1000	38-430	26.9	33
Rectangular				
	125	28-415	15.6	21.7
	250	38-415	21.7	30.4
	500	48-415	29.5	41.6
	1000	53-415	33	45.1
Large Format				
	2000 Round	100-415	46.8	64.2
	2000 Rectangular	63-415	50	55.5
	4000 Round	100-415	46.8	64.2
	4000 Rectangular	100-415	46.8	64.2

Sterilization Guidelines

Observe the tolerated temperature range of plastic type when autoclaving. Remove any stoppers, fittings, or caps prior to autoclaving. Plastic vessels should be autoclaved separately from their closures and other fittings. Autoclaving with closures in place can lead to deformation and destruction of the vessel. Verify that no contamination or residues are present before sterilization as their presence could destroy plastics during sterilization or autoclaving. All statements are advisory only, and imply no liability on the part of Globe Scientific Inc. All statements relating to the resistances of plasticware to high temperatures, chemicals, and to sterilization and cleaning procedures have been carefully formulated, based on statements of raw materials manufacturers and experience gained in practical use.

	Plastic Type		
Sterilization Method	**HDPE**	**PP**	**LDPE**
Autoclave		●	
Gas Sterilization	●	●	●
Dry Sterilization @ 160° C			
Chemical Sterilization in Formalin	●	●	●
Gamma Irradiation	●	●	
Microwave	●	●	●

*Sterilizing reduces mechanical strength.

Chemical Resistance Guidelines

	Plastic Type		
Substance Group	**HDPE**	**PP**	**LDPE**
Alcohols, aliphatic	H	H	H
Aldehydes	G	G	G
Alkalis	H	H	H
Esters	G	G	G
Hydrocarbons, aliphatic	G	G	M
Hydrocarbons, aromatic	G	M	M
Hydrocarbons, halogenated	M	M	N
Ketones	G	G	G
Oxidants (oxidizing acids), strong	M	M	M
Acids (diluted), weak	H	H	H
Acids (concentrated), strong	H	H	H

H **High Resistance**

G **Good Resistance;** no damage or only minor damage resulting from exposures of more than 30 days

M **Marginal Resistance;** for some types of plastics, extended exposure can result in damage (hairline cracks, loss of mechanical strength, discoloration, etc.)

N **Non-Resistance;** exposure can lead to deformation and destruction

Physical Properties of Plastics

Resin	Max use Temp (°C/°F)	Brittleness Temp (°C/°F)	Transparency	Flexibility	Autoclave	Specific Gravity (g/mL)	Permeability Approx. cc-mm/m2-24hr-Br N_2	0_2	$C0_2$
HDPE	120/248	-100/-148	Translucent	Rigid	No	0.95	651	2868	8990
PP	135/275	0/32	Translucent	Rigid	Yes	0.90	744	3720	12.400
LDPE	80/176	-100/-148	Translucent	Flexible	No	0.92	2790	7750	41.850

HDPE – High-Density Polyethylene **PP** – Polypropylene **LDPE** – Low-Density Polyethylene

Cleaning Laboratory Plasticware

All polyolefins, such as Low Density Polyethylene (LDPE), High Density Polyethylene (HDPE) and Polypropylene (PP) have wettable surfaces that are both highly resistant to high temperatures and chemical attack and easy to clean. Slight contamination can be removed using a chemically neutral (pH7) cleaning agent. Heavy contamination can be removed using an alkaline (pH up to 12) cleaning agent. Never use scouring powders or abrasive sponges when cleaning laboratory plasticware.