# PYREX® Volumetric Ware from Corning

Trusted for Over 90 Years











Corning offers a selection of PYREX® Volumetric Flasks and Graduated Cylinders with the following features:

- Class A
- Class B
- TC "to contain"
- TD "to deliver"
- Certified/Serialized
- ▶ Verified/Lot numbered

#### **Volumetric Ware**

The accuracy of volumetric ware depends on the care used in calibrating it, using the correct type of ware for the application, handling the ware properly and ensuring the ware is clean. Calibration of volumetric ware is usually done at 20°C, and the ware should be used at approximately this temperature. Refrigerated liquids should be allowed to come to room temperature before measuring them. Under normal use and care the calibration of volumetric are will not change. Do not expose volumetric ware to excessive heat, approaching PYREX upper service limit.

#### **Types of Ware**

**Serialized/Certified Ware:** Certified ware is calibrated to Class A specifications. Each piece is individually serialized and furnished with a Certificate of Identification and Capacity, traceable to NIST standards, guaranteeing its calibration.

**Class A Ware:** Class A ware is manufactured to tolerances established by ASTM E-694 for volumetric ware, ASTM E-542 for calibration of volumetric ware, and ASTM E-288 for volumetric flasks. Utilizes the same tolerances as Certified Ware but is not certified and has no certificate.

**Class B Ware:** Class B ware is generally calibrated to twice the tolerance of Class A ware.

#### **Calibrated Ware Markings**

Lines of graduated ware may be acid etched, wheel engraved, abrasive blasted, enameled or permanently stained into the glass. Etched or engraved lines are usually colored by fired-in enamels. The width of the line should not exceed 0.4 mm for subdivided ware or 0.6 mm for single-line ware. In addition to the lines, the ware should be marked with its capacity, the temperature at which the ware should be used and whether the piece was calibrated TC, "to contain" or TD, "to deliver" the stated volume. TC means that the ware is calibrated so that the mark indicates the volume held in the container. TD means the mark indicates the amount of airfree distilled water at 20°C that is delivered when it is poured out. Numbers indicating volume at certain lines are placed immediately above the line. Volumetric flask markings must cover at least 90% of the neck circumference.

#### **Reading the Volumetric**

ASTM E-542 details the method of reading the meniscus as follows:

For all apparatus calibrated by this procedure, the reading or setting is made on the lowest point of the meniscus. In order that the lowest point may be observed, it is necessary to position a shade or some dark material immediately below the meniscus, which renders the profile of the meniscus dark and clearly visible against a dark background. A convenient device for this purpose is a collar-shaped section of thick black rubber cut open at the side and of such a size as to clasp to the tube firmly. Alternatively, black paper may be used.



#### 5580 PYREX® Class A Volumetric Flask with Snap-Cap

The strength of these flasks has been increased appreciably through machine-blown bodies to which are sealed heavy-beaded, heavy-tubing necks, tooled for snap-cap fit. The graduation line is sharp and permanent and large white block letters make the inscription easy to read. The 1 mL and 2 mL sizes are test tube shaped. The 10 mL through 2000 mL sizes are supplied with snap-caps.

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	Snap-Cap No.	Qty/Pk	Qty/Cs
5580-1*	1	0.01	10 x 55	_	6	12
5580-2*	2	0.015	9 x 85	_	6	12
5580-10	10	0.02	28 x 78	10	_	12
5580-25	25	0.03	40 x 100	25	6	12
5580-50	50	0.05	51 x 130	50	6	12
5580-100	100	0.08	60 x 160	100	6	12
5580-200	200	0.10	74 x 198	200	6	12
5580-250	250	0.12	78 x 225	250	6	12
5580-500	500	0.20	100 x 259	500	6	12
5580-1L	1000	0.30	125 x 310	1000	1	6
5580-2L	2000	0.50	158 x 357	2000	1	4

<sup>\*</sup>No snap-caps for 1 mL and 2 mL sizes. For snap-caps only, see Cat. No. 7666.



The strength of these flasks has been increased appreciably through machine-blown bodies to which are sealed heavy-tubing necks tooled for \$ glass stoppers. The graduation line is sharp and permanent and large white block letters make the inscription easy to read. The 1 mL and 2 mL sizes are test tube shaped. Sizes 3L thru 6L have pennyhead \$ stoppers.



Cat. No.	Description	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	§ Stopper No.	Qty/ Pk	Qty/ Cs
5640-1	Complete	1	0.01	9 x 79	8	_	12
5640-2	Complete	2	0.015	9 x 114	8	_	12
5640-5	Complete	5	0.02	26 x 91	8	_	12
5640-10	Complete	10	0.02	28 x 99	9	_	12
5640-25	Complete	25	0.03	40 x 121	9	6	12
5640-50	Complete	50	0.05	51 x 151	9	6	12
5640-100	Complete	100	0.08	60 x 181	13	6	12
5640-200	Complete	200	0.10	74 x 214	13	6	12
5640-250	Complete	250	0.12	78 x 252	16	6	12
5640-500	Complete	500	0.20	100 x 287	19	6	12
5640-1L	Complete	1000	0.30	125 x 342	22	1	6
5640-2L	Complete	2000	0.50	158 x 388	27	1	4
5640-3L	Complete	3000	1.0	180 x 440	32	_	1
5640-4L	Complete	4000	1.0	205 x 480	38	_	1
5640-5L	Complete	5000	1.5	225 x 510	38	_	1
5640-6L	Complete	6000	2.0	230 x 550	38	_	1
5640-10FO	Flask only	10	_	_	_	_	12
5640-25FO	Flask only	25	_	_	_	_	1
5640-50FO	Flask only	50	_	_	_	_	1
5640-100FO	Flask only	100	_	_	_	_	12
5640-200FO	Flask only	200	_	_		_	1
5640-250FO	Flask only	250	_	_	_	_	1
5640-500FO	Flask only	500	_	_	_	_	1
5640-1LFO	Flask only	1000	_	_	-	_	1

For stopper only on sizes 1 mL thru 2L, see Cat. No. 7650; for sizes 3L thru 6L, see Cat. No. 7660.



#### 55640 PYREX® Class A Low Actinic Volumetric Flask with PYREX \$ Stopper

Low actinic stained glass provides protection for materials sensitive to light. The protective color is an integral part of the flask, which retains the mechanical strength, chemical stability and thermal resistance of PYREX Brand labware. Supplied with \$\\\\\$ PYREX stopper.

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	§ Stopper No.	Qty/ Pk	Qty/ Cs
55640-10	10	0.02	28 x 99	9	_	12
55640-25	25	0.03	40 x 121	9	6	12
55640-50	50	0.05	51 x 151	9	6	12
55640-100	100	0.08	60 x 181	13	6	12
55640-200	200	0.1	74 x 214	13	6	12
55640-200FO	200	0.1	74 x 214	13	6	12
55640-250	250	0.12	78 x 252	16	6	12
55640-250FO	250	0.12	78 x 252	16	6	12
55640-500	500	0.20	100 x 287	19	_	1
55640-1L	1000	0.30	125 x 342	22	_	1
55640-2L	2000	0.15	158 x 388	27	_	1



#### 65640 PYREXPLUS® Class A Volumetric Flask with PYREX ₹ Stopper

Flask features a protective PVC coating for longer product life and safety. Protective coating helps prevent glass from shattering and reduces spills. Autoclavable (121°C) and resistant to thermal shock. The graduation mark is easy to read. Supplied with \$\\\\\$ PYREX stopper.

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	\$ Stopper No.	Qty/ Pk	Qty/ Cs
65640-100	100	0.08	60 x 181	13	6	12
65640-200	200	0.10	74 x 214	13	6	12
65640-250	250	0.12	78 x 252	16	6	12
65640-500	500	0.20	100 x 287	19	6	12
65640-1L	1000	0.30	125 x 342	22	1	4
65640-2L	2000	0.50	158 x 388	27	1	2

For stopper only, see Cat. No. 7650. Do not place over direct heat or flame. Do not heat above 121°C moist heat or 110°C dry heat.



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Economy flasks designed for those that do not require the precision accuracy of our Class A capacity flasks. Capacity tolerances are twice those specified for Class A volumetric ware. The graduation line is sharp and permanent; large white block letters make inscriptions easy to read. Supplied with interchangeable \$\mathbf{T}\$ ground glass stoppers.

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	\$ Stopper No.	Qty/Pk	Qty/Cs
5641-10	10	0.04	28 x 99	9	_	12
5641-25	25	0.06	40 x 121	9	6	12
5641-50	50	0.10	51 x 151	9	6	12
5641-100	100	0.16	60 x 181	13	6	12
5641-200	200	0.20	74 x 214	13	6	12
5641-250	250	0.24	78 x 252	16	6	12
5641-500	500	0.40	100 x 287	19	6	12
5641-1000	1000	0.60	125 x 342	22	1	6
5641-2L	2000	1.0	158 x 388	27	1	4

For stopper only, see Cat. No. 7650.



#### 5646 PYREX® Verified Class A Volumetric Flask with Polyethylene and ₲ Glass Stoppers

These volumetric flasks exceed the current standard (ASTM E-542) for manufacturing volumetric flasks, because each individual flask is verified to meet the Class A volumetric tolerances in ASTM E-288. Each flask is also labeled with a lot number, enabling you to access a Certificate of Analysis with lot-specific data regarding both measurements and methods, trace your glassware, and track usage. All flasks are provided with both a polyethylene and \$ PYREX glass stopper.

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	§ Stopper No.	Qty/ Pk	Qty/ Cs
5646-5	5	0.02	26 x 91	8	1	12
5646-10	10	0.02	28 x 99	9	1	12
5646-25	25	0.03	40 x 121	9	2	12
5646-50	50	0.05	51 x 151	9	2	12
5646-100	100	0.08	60 x 181	13	2	12
5646-200	200	0.10	74 x 214	13	2	12
5646-250	250	0.12	78 x 252	16	2	12
5646-500	500	0.20	100 x 287	19	2	12
5646-1L	1000	0.30	125 x 342	22	6	6
5646-2L	2000	0.50	158 x 388	27	4	4



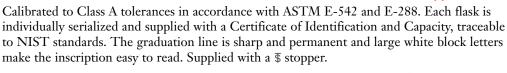


The capacity mark is a fine line etched through a narrow red band into clear glass, making a filler unnecessary and giving high legibility, accuracy and permanence. With \$ stopper. Calibrated "to contain."

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	§ Stopper No.	Qty/ Pk	Qty/ Cs
5660-25	25	0.03	40 x 122	9	6	12
5660-50	50	0.05	51 x 152	9	6	12
5660-100	100	0.08	60 x 182	13	6	12
5660-200	200	0.10	74 x 214	13	6	12
5660-250	250	0.12	78 x 253	16	6	12
5660-500	500	0.20	100 x 289	19	6	12
5660-1L	1000	0.30	125 x 344	22	1	6
5660-2L	2000	0.50	158 x 309	27	1	4

For stopper only, see Cat. No. 7650.

#### 5680 PYREX Class A Serialized/Certified Volumetric Flask with PYREX \$ Stopper





Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	\$ Stopper No.	Qty/ Cs
10	0.02	28 x 99	9	1
25	0.03	40 x 122	9	1
50	0.05	51 x 152	9	1
100	0.08	60 x 182	13	1
200	0.10	74 x 214	13	1
250	0.12	78 x 253	16	1
500	0.20	100 x 288	19	1
1000	0.30	125 x 344	22	1
2000	0.50	158 x 390	27	1
	(mL)  10  25  50  100  200  250  500  1000	(mL)         (mL)           10         0.02           25         0.03           50         0.05           100         0.08           200         0.10           250         0.12           500         0.20           1000         0.30	(mL)         (mL)         Height (mm)           10         0.02         28 x 99           25         0.03         40 x 122           50         0.05         51 x 152           100         0.08         60 x 182           200         0.10         74 x 214           250         0.12         78 x 253           500         0.20         100 x 288           1000         0.30         125 x 344	(mL)         (mL)         Height (mm)         No.           10         0.02         28 x 99         9           25         0.03         40 x 122         9           50         0.05         51 x 152         9           100         0.08         60 x 182         13           200         0.10         74 x 214         13           250         0.12         78 x 253         16           500         0.20         100 x 288         19           1000         0.30         125 x 344         22

For stopper only, see Cat. No. 7650.



#### 55680 PYREX® Class A Serialized/Certified, Low Actinic Volumetric Flask with PYREX \$ Stopper

Calibrated to Class A tolerances in accordance with ASTM E-542 and E-288. Each flask is individually serialized and supplied with a Certificate of Identification and Capacity, traceable to NIST standards. The graduation line is sharp and permanent and large white block letters make the inscription easy to read. Low actinic stained glass provides protection for materials sensitive to light. The protective color is an integral part of the flask, which retains the mechanical strength, chemical stability, and the thermal resistance of PYREX brand labware. Supplied with a \$ stopper.

Cat. No.	Capacity (mL)	Tol. ± (mL)	Approx. O.D. x Height (mm)	§ Stopper No.	Qty/ Cs
55680-10	10	0.02	28 x 99	9	1
55680-25	25	0.03	40 x 122	9	1
55680-50	50	0.05	51 x 152	9	1
55680-100	100	0.08	60 x 182	13	1
55680-200	200	0.10	74 x 214	13	1
55680-250	250	0.12	78 x 253	16	1
55680-500	500	0.20	100 x 288	19	1
55680-1L	1000	0.30	125 x 344	22	1
55680-2L	2000	0.50	158 x 390	27	1

#### 2982 PYREX Single Metric Scale Graduated Cylinder with PYREX \$ Stopper, TC

Calibrated "to contain." Useful as a mixing cylinder. Each features the PYREX stopper. Graduations are in durable white enamel. See Cat. No. 3002 for the equivalent cylinder supplied with a Corning® test certificate.



Cat. No.	Capacity (mL)	Grad. Interval (mL)	ASTM Tol. ± (mL)	Approx. O.D. x Height (mm)	\$ Stopper No.	Qty/ Pk	Qty/ Cs
2982-10	10	0.1	0.2	13 x 195	9	2	24
2982-25	25	0.2	0.3	18 x 225	13	1	18
2982-50	50	1.0	0.5	24 x 255	16	1	12
2982-100	100	1.0	1.0	29 x 295	16	1	8
2982-250	250	2.0	2.0	39 x 385	22	1	8
2982-500	500	5.0	4.0	50 x 445	27	1	6
2982-1L	1000	10.0	6.0	64 x 520	32	_	1
2982-2L	2000	20.0	12.0	83 x 590	38	_	1

For stopper only, see Cat. No. 7650.

## 3002 PYREX Class A Serialized/Certified, Single Metric Scale Graduated Cylinder, TC with \$ PYREX Stopper

Useful as a mixing cylinder. Calibrated "to contain" in accordance with ASTM E-1272 and ASTM E-542. Each cylinder is individually serialized and supplied with a Corning Certificate of Identification and Capacity, traceable to NIST standards. Each features the PYREX stopper. Graduation markings are in durable white enamel.



Cat. No.	Capacity (mL)	Grad. Interval (mL)	ASTM Tol. ± (mL)	Approx. O.D. x Height (mm)	\$ Stopper No.	Qty/ Cs
3002-10	10	0.1	0.10	13 x 195	9	1
3002-25	25	0.2	0.17	18 x 225	13	1
3002-50	50	1.0	0.25	24 x 255	16	1
3002-100	100	1.0	0.50	29 x 295	16	1
3002-250	250	2.0	1.0	39 x 385	22	1
3002-500	500	5.0	2.0	50 x 445	27	1
3002-1L	1000	10.0	3.0	64 x 520	32	1
3002-2L	2000	20.0	6.0	83 x 550	38	1

For stopper only, see Cat. No. 7650.



#### 3022 PYREX® Single Metric Scale Graduated Cylinder, TC

Calibrated "to contain," with white enamel graduations. The 100 mL capacity is in accordance with ASTM E-133 and E-1272 and is used in ASTM tests D-86, D-216 and D-447. The 10 mL size has a funnel top. Bumper guards are supplied with 25 mL thru 2000 mL sizes inclusive.

Cat. No.	Capacity (mL)	Grad. Interval (mL)	ASTM Tol. ± (mL)	Approx. O.D. x Height (mm)	Qty/ Pk	Qty/ Cs
3022-10	10	0.1	0.2	13 x 178	2	24
3022-25	25	0.2	0.3	18 x 192	1	18
3022-50	50	1.0	0.5	24 x 225	1	18
3022-100	100	1.0	1.0	29 x 254	1	12
3022-250	250	2.0	2.0	39 x 340	1	12
3022-500	500	5.0	4.0	50 x 392	1	8
3022-1L	1000	10.0	6.0	64 x 465	1	1
3022-2L	2000	20.0	12.0	83 x 520	1	1



#### 3023 PYREX Class A Double Metric Scale Graduated Cylinder, TD

Cylinders are calibrated "to deliver" in accordance with ASTM E-1272 and ASTM E-542. The double scale, numbered up and down, is in durable white enamel. Supplied with shock absorbing polyethylene bumper guards.

Cat. No.	Capacity (mL)	Grad. Interval (mL)	ASTM Tol. ± (mL)	Approx. O.D. x Height (mm)	Qty/ Pk	Qty/ Cs
3023-25	25	0.2	0.17	18 x 192	1	18
3023-50	50	1.0	0.25	24 x 225	1	18
3023-100	100	1.0	0.50	29 x 254	1	12
3023-250	250	2.0	1.0	39 x 340	1	12
3023-500	500	5.0	2.0	50 x 390	1	8
3023-1L	1000	10.0	3.0	64 x 465	_	1
3023-2L	2000	20.0	6.0	83 x 520	_	1



#### 3024 PYREX Single Metric Scale Graduated Cylinder, TD

Calibrated "to deliver," with white enamel graduations. Bumper guards are supplied on  $25~\mathrm{mL}$  through  $4000~\mathrm{mL}$  sizes.

Cat. No.	Capacity (mL)	Grad. Interval (mL)	ASTM Tol. ± (mL)	Approx. O.D. x Height (mm)	Qty/ Pk	Qty/ Cs
3024-5*	5	0.1	0.1	12 x 117	2	12
3024-10*	10	0.1	0.2	13 x 177	2	24
3024-25	25	0.2	0.3	18 x 192	1	18
3024-50	50	1.0	0.5	24 x 225	1	18
3024-100	100	1.0	1.0	29 x 254	1	12
3024-250	250	2.0	2.0	39 x 340	1	12
3024-500	500	5.0	4.0	50 x 390	1	8
3024-1L	1000	10.0	6.0	64 x 465	1	1
3024-2L	2000	20.0	12.0	83 x 520	1	1
3024-4L	4000	50.0	29.0	110 x 585	_	1
3024-PACK**	Assortn	nent Pack				

<sup>\*</sup>Funnel top

<sup>\*\*</sup>The assortment pack includes one each of the 10 mL, 25 mL, 50 mL, 100 mL and 250 mL sizes.





Cylinder features a protective polymer coating for longer product life and safety. Autoclavable (121°C) and resistant to thermal shock. The cylinder is calibrated "to deliver." Bumper guards not supplied.

Cat. No.	Capacity (mL)	Grad. Interval (mL)	$\begin{array}{c} ASTM \\ Tol. \pm (mL) \end{array}$	Approx. O.D. x Height (mm)	Qty/ Pk	Qty/ Cs
63024-100	100	1.0	1.0	29 x 254	1	4
63024-250	250	2.0	2.0	39 x 340	1	4
63024-500	500	5.0	4.0	50 x 390	1	4
63024-1L	1000	10.0	6.0	64 x 460	1	4
63024-2L	2000	20.0	12.0	83 x 520	1	2

#### 3046 PYREX® Lifetime Red,™ Single Metric Scale Graduated Cylinder, TC

Calibrated "to contain." A reinforced bead of glass near the top helps to reduce breakage, if the cylinder upsets. The 100 mL cylinder is in accordance with ASTM E-133 and E-1272 and is used in ASTM D-86, D-216, and D-447.

Cat. No.	Capacity (mL)	Grad. Interval (mL)	ASTM Tol. ± (mL)	Approx. O.D. x Height (mm)	Qty/ Pk	Qty/ Cs
3046-10	10	0.1	0.2	13 x 179	1	24
3046-25	25	0.2	0.3	18 x 205	1	18
3046-50	50	1.0	0.5	24 x 238	1	18
3046-100	100	1.0	1.0	29 x 267	1	12
3046-250	250	2.0	2.0	39 x 353	1	12



Calibrated "to deliver" in accordance with ASTM E-1272 and ASTM E-542. Each cylinder is individually serialized and supplied with a Certificate of Identification and Capacity, traceable to NIST standards. Permanent white graduations are easy to read. Bumper guards are supplied with 25 mL through 2000 mL inclusive. The 10 mL size has a funnel top.



Cat. No.	Capacity (mL)	Grad. Interval (mL)	$\begin{array}{c} ASTM \\ Tol. \pm (mL) \end{array}$	Approx. O.D. x Height (mm)	Qty/ Pk	Qty/ Cs
3062-10	10	0.1	0.10	13 x 178	1	1
3062-25	25	0.2	0.17	18 x 192	1	1
3062-50	50	1.0	0.25	24 x 225	1	1
3062-100	100	1.0	0.50	29 x 254	1	1
3062-250	250	2.0	1.0	39 x 340	1	1
3062-500	500	5.0	2.0	50 x 390	1	1
3062-1L	1000	10.0	3.0	64 x 465	1	1
3062-2L	2000	20.0	6.0	83 x 520	1	1

### CORNING

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