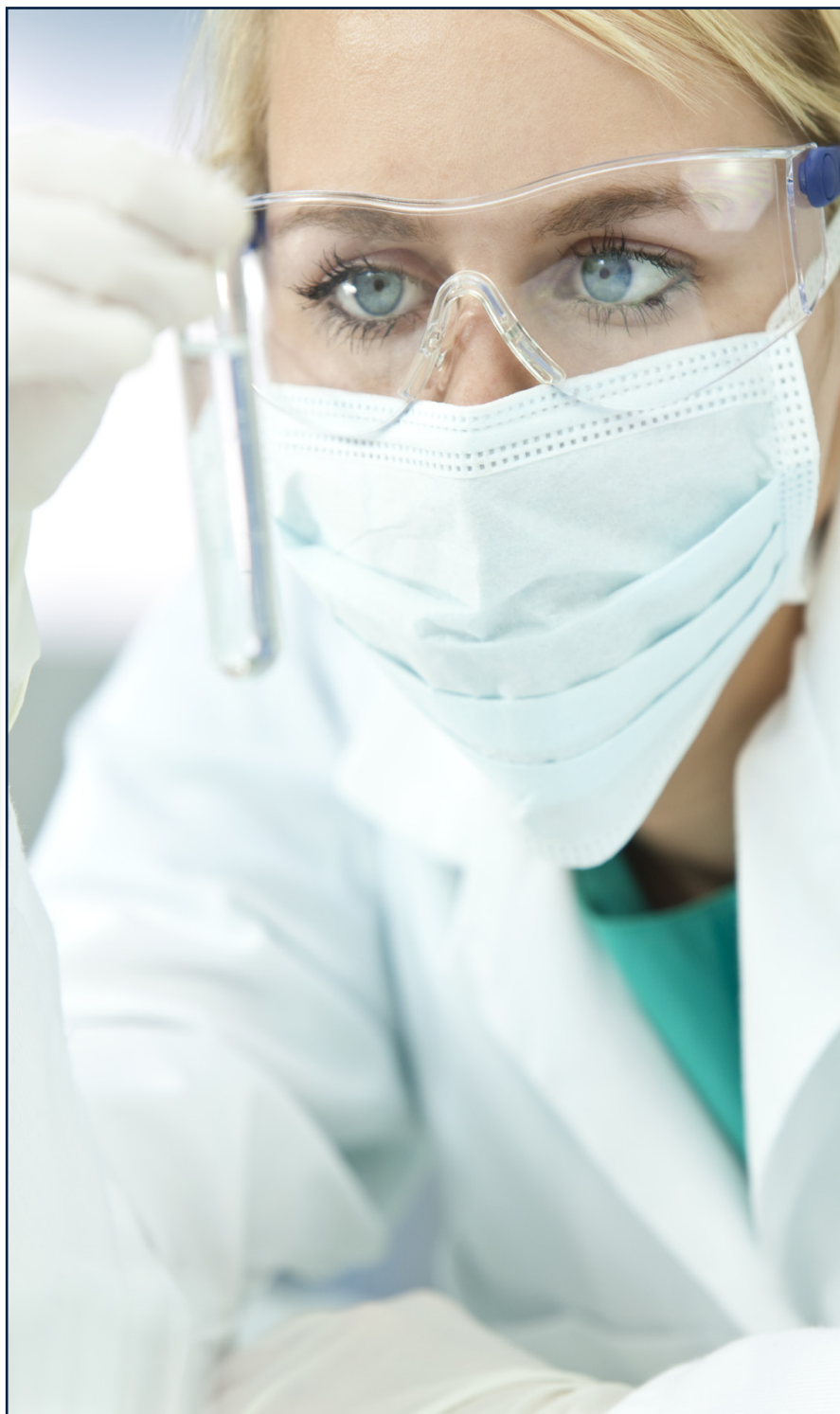
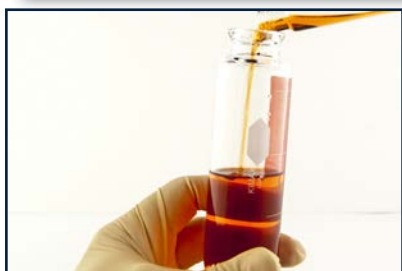


# CENTRIFUGE TUBES

Choose KIMAX® borosilicate tubes for strength, durability and speed.



*Your experienced guide to glass centrifuge tubes . . .*

***Your guide to quality centrifuge tubes.***



**We're here to help.**

If you don't find what you need, please contact us for assistance. Our customer service / technical group has the experience and knowledge to help you make the right choices. We can also custom design and fabricate tubes to your exact requirements. Just let us know how we can help.

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### Disposable Centrifuge Tubes

#### Disposable Screw Thread Centrifuge Tubes, Plain

Tubes are made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class A or B glass requirements. The 5, 10, and 15 mL sizes have conical bottoms and the 50 mL has a bullet nose. These tubes can withstand centrifugation up to 2980 RCF. They are plastic shrink wrapped in modular trays for cleanliness and safety. **Closures are not supplied.** See 73800 and 73802 below.



73785



73790

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | GPI Thread Finish | Case Qty. |
|----------------|-----------|----------------------------|-------------------|-----------|
| 73785-5        | 5         | 13 x 110                   | 13-415            | 125       |
| 73785-10       | 10        | 16 x 114                   | 15-415            | 125       |
| 73785-15       | 15        | 17 x 126                   | 15-415            | 125       |
| 73785-50       | 50        | 29 x 137                   | 24-400            | 72        |

#### Accessory Closures

|             |  |      |
|-------------|--|------|
| 73800-13415 | Phenolic Cap with Rubber Liner, 13-415 | 1000 |
| 73800-15415 | Phenolic Cap with Rubber Liner, 15-415 | 1000 |
| 73802-13415 | Phenolic Cap with PTFE Liner, 13-415   | 500  |
| 73802-15415 | Phenolic Cap with PTFE Liner, 15-415   | 500  |
| 73802-24400 | Phenolic Cap with PTFE Liner, 24-400   | 144  |

#### Disposable Snap Cap Centrifuge Tubes, Plain

Tubes are made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class A or B glass requirements. The 5, 10, and 15 mL sizes have conical bottoms and the 50 mL has a bullet nose. These tubes can withstand centrifugation up to 2980 RCF. The 5, 10, and 15 mL sizes have a finished top for a snap-cap closure. The 50 mL size has a tooled top. Tubes are plastic shrink wrapped in modular trays for cleanliness and safety. **Snap cap closures are not supplied.** See 73837 below.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | Snap-Cap Size | Case Qty. |
|----------------|-----------|----------------------------|---------------|-----------|
| 73790-5        | 5         | 13 x 110                   | 1             | 125       |
| 73790-10       | 10        | 16 x 114                   | 2             | 125       |
| 73790-15       | 15        | 17 x 126                   | 2             | 125       |
| 73790-50       | 50        | 29 x 137                   | -             | 72        |

#### Accessory Closures

|         |                                    |     |
|---------|------------------------------------|-----|
| 73837-1 | Snap Cap, Polyethylene, cap size 1 | 500 |
| 73837-2 | Snap Cap, Polyethylene, cap size 2 | 500 |

**Reusable Centrifuge Tubes, Ungraduated**

**Reusable Snap Cap Centrifuge Tubes with Beaded Tops**

Plain, ungraduated, KIMAX conical centrifuge tube with a beaded top.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|----------------------------|-----------|
| 411800-0015    | 15        | 20 x 120                   | 125       |
| 411800-1015    | 15        | 20 x 120                   | 10        |

**Replacement Part**

|         |                                    |     |
|---------|------------------------------------|-----|
| 73837-2 | Snap Cap, Polyethylene, cap size 2 | 500 |
|---------|------------------------------------|-----|

**Reusable Micro Centrifuge Tubes with Beaded Tops**

Plain KIMAX tube with a regular beaded top. Designed from ASTM Specification E237.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|----------------------------|-----------|
| 45150-2        | 2         | 11 x 66                    | 12        |
| 45150-5        | 5         | 13 x 101                   | 12        |

**Reusable Centrifuge Tube with Beaded Top**

Plain, standard taper, KIMAX tube. Top is beaded for strength. Designed from Federal Specification NNN-T-780, Type II ungraduated requirements.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|----------------------------|-----------|
| 45160-15       | 15        | 17 x 118                   | 12        |

**Reusable Threaded Centrifuge Tubes with Attached Caps**

Plain, conical KIMAX tube with a PTFE / rubber lined black phenolic screw cap attached.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | GPI Thread Size | Case Qty. |
|----------------|-----------|----------------------------|-----------------|-----------|
| 410090-0015    | 15        | 17 x 130                   | 15-415          | 12        |
| 410090-0050    | 50        | 28 x 158                   | 24-410          | 12        |

**Replacement Parts**

|           |                                      |     |
|-----------|--------------------------------------|-----|
| 45066C-15 | Cap with PTFE / Rubber Liner, 15-415 | 300 |
| 45066C-24 | Cap with PTFE / Rubber Liner, 24-410 | 150 |

**Reusable Round Bottom Centrifuge Tubes with ⌘ Glass Flat Head Stoppers**

Plain, round bottom ungraduated KIMAX centrifuge tube with a flat head ⌘ stopper. The flat head design permits stoppers to be placed on work surfaces without contaminating the ground zone and also facilitates the use of this vessel as a shaking tube. Do not centrifuge with stopper in tube.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length with Stopper (mm) | ⌘ Stopper | Case Qty. |
|----------------|-----------|---|-----------|-----------|
| 411050-0050    | 50        | 28 x 140                                | 13        | 1         |
| 411050-0100    | 100       | 32 x 210                                | 16        | 1         |



411800



45150



45160



410090



411050

Reusable Centrifuge Tubes, Standard Wall



45186



45165



45164



45225

Reusable Beaded Top Centrifuge Tube, Graduated with White Scale, Pour Spout

KIMAX tube with a short tapered bottom. Graduated and calibrated "to contain". Top end has a pour spout. Scale and marking spot are durable white ceramic enamel.

| Catalog Number | Cap. (mL) | Subdivision (mL)          | ±Tolerance (mL)  | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|---------------------------|--|----------------------------|-----------|
| 45186-50       | 50        | 0-10 in 0.5<br>10-50 in 1 | 0 to 2 - ±0.2<br>Above 2 to 10 - 0.3<br>Above 10 - 0.5 | 29 x 118                   | 12        |

Reusable Beaded Top Centrifuge Tubes, Graduated with White Scales

Standard taper KIMAX tube. Graduated and calibrated "to contain". Top is beaded for strength. Scale and marking spot are printed in durable white ceramic enamel.

| Catalog Number | Cap. (mL) | Subdivision (mL)          | ±Tolerance (mL)  | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|---------------------------|--|----------------------------|-----------|
| 45165-10       | 10        | 0.1                       | 0 to 0.2 - ±0.05   | 17 x 108                   | 12        |
| 45165-15       | 15        | 0.1                       | Above 0.2 to 1 - ±0.10<br>Above 1 to 3 - 0.15<br>Above 3 - 0.20  | 17 x 118                   | 12        |
| 45165-50       | 50        | 0-10 in 0.5<br>10-50 in 1 | 0 to 1 - ±0.075<br>Above 1 to 2 - 0.15<br>Above 2 to 5 - 0.30<br>Above 5 to 10 - 0.50<br>Above 10 - 1.00 | 29 x 133                   | 12        |

Reusable Beaded Top Centrifuge Tube, Graduated with Red Stain Scale

Standard taper KIMAX tube calibrated "to contain". Top is beaded for strength. Scale is permanent red stain. Marking spot is sandblasted. **For a 50 mL tube with finer lower end subdivisions, see 45167**. Designed from Federal Specification NNN-T-780, Type I requirements.

| Catalog Number | Cap. (mL) | Subdivision (mL) | ±Tolerance (mL)  | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|------------------|--|----------------------------|-----------|
| 45164-15       | 15        | 0.1              | 0 to 0.2 - ±0.05<br>Above 0.2 to 1 - 0.10<br>Above 1 to 3 - 0.15<br>Above 3 - 0.20 | 17 x 118                   | 12        |

Reusable Beaded Top Centrifuge Tube, Graduated with White Scale, Hopkins Vaccine

KIMAX tube used to standardize vaccines. Calibrated "to contain". The stem is graduated 0.01 mL to 0.05 mL in 0.01 mL subdivisions and the body has graduations at 1, 5 and 10 mL. Scale and marking spot are durable white ceramic enamel.

| Catalog Number | Cap. (mL) | ±Tolerance Stem | ±Tolerance Body | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------|-----------------|-----------------|----------------------------|-----------------|-----------|
| 45225-10       | 10        | 0.0025          | 0.20            | 17 x 119                   | 4               | 12        |

**Reusable Centrifuge Tubes, Standard Wall**

**Reusable Threaded Centrifuge Tubes, Graduated with White Scales, Unattached Caps**

Standard taper KIMAX tube with a screw thread finish. Graduated and calibrated "to contain". Cap supplied has white rubber liner. Scale and marking spot are durable white ceramic enamel. Replacement caps are 45066B-15 and 45066B-24.

| Catalog Number | Cap. (mL) | Subdivision (mL)          | ±Tolerance (mL)  | O.D. x Approx. Length (mm) | GPI Thread Finish | Case Qty. |
|----------------|-----------|---------------------------|--|----------------------------|-------------------|-----------|
| 45166-15       | 15        | 0.1                       | 0 to 0.2 - ±0.050<br>Above 0.2 to 1 - 0.100<br>Above 1 to 3 - 0.150<br>Above 3 - 0.200                       | 17 x 130                   | 15-415            | 12        |
| 45166-50       | 50        | 0-10 in 0.5<br>10-50 in 1 | 0 to 1 - ±0.075<br>Above 1 to 2 - 0.150<br>Above 2 to 5 - 0.300<br>Above 5 to 10 - 0.500<br>Above 10 - 1.000 | 29 x 147                   | 24-410            | 12        |

**Reusable Threaded Centrifuge Tube, Graduated with White Scale, Unattached Cap**

Large-capacity, 100 mL KIMAX tube with 28-410 GPI screw thread closure. Cap supplied has PTFE-faced liner. Graduated and calibrated "to contain". Scale and marking spot are durable white ceramic enamel. Dimensions from 8" oil and weathering tube used in ASTM D2158. For replacement cap, use 45066C-28.

| Catalog Number | Cap. (mL) | Subdivision (mL)  | Tolerance ±(mL)  | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------|---|--|----------------------------|-----------------|-----------|
| 45246-100      | 100       | 0-1 in 0.05<br>1-3 in 0.1<br>3-6 in 0.2<br>6-10 in 0.5<br>10-100 in 1 | 0-0.1 - ±0.02<br>Above 0.1-0.30 - 0.03<br>Above 0.3-1 - 0.05<br>Above 1-3 - 0.10<br>Above 3-5 - 0.20<br>Above 5-10 - 0.50<br>Above 10 - 1.00 | 37 x 203                   | 6               | 12        |

**Reusable Centrifuge Tubes, Graduated with White Scales, ⌘ Glass Pennyhead Stoppers**

KIMAX tube with a top finished to accept a ⌘ stopper. Graduated and calibrated "to contain". Scale and marking spot are durable white ceramic enamel. Do not centrifuge with stopper in tube.

| Catalog Number | Cap. (mL) | Subdivision (mL)          | ±Tolerance (mL)  | O.D. x Approx. Length with Stopper (mm) | ⌘ Stopper Size | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------|---------------------------|--|---|----------------|-----------------|-----------|
| 45153-15       | 15        | 0.1                       | 0 to 0.2 - ±0.050<br>Above 0.2 to 1 - 0.100<br>Above 1 to 3 - 0.150<br>Above 3 - 0.200 | 17 x 156                                | 13             | 6               | 12        |
| 45153-50       | 50        | 0-10 in 0.5<br>10-50 in 1 | 0 to 1 - ±0.075<br>Above 1 to 2 - 0.15<br>Above 2 to 5 - 0.30<br>Above 5 to 10 - 0.50  | 29 x 173                                | 19             | 6               | 12        |

**Reusable Centrifuge Tubes, Graduated with Red Scales, ⌘ Glass Flat Head Stoppers**

KIMAX conical-type graduated centrifuge tube with a flat head ⌘ stopper. Flat head design permits stoppers to be placed on work surfaces without contaminating the ground zone and also facilitates the use of this vessel as a shaking tube. Do not centrifuge with stopper in tube.

| Catalog Number   | Cap. (mL)              | ⌘ Stopper | Subdivision (mL) | O.D. x Approx. Length with Stopper (mm) | Case Qty. |
|------------------|------------------------|-----------|------------------|---|-----------|
| 410550-0025      | 2.5                    | 9         | 0.1              | 11 x 103                                | 1         |
| 410550-0005      | 5                      | 9         | 0.1              | 13 x 128                                | 1         |
| 410550-0013      | 13                     | 13        | 0.1              | 17 x 150                                | 1         |
| <b>Tube Only</b> |                        |           |                  |   |           |
| 410551-0005      | Centrifuge Tube, 5 mL  |           |                  |   | 1         |
| 410551-0013      | Centrifuge Tube, 13 mL |           |                  |   | 1         |



45166



45246



45153



410550

**Reusable Centrifuge Tubes, Heavy-Duty**



45196



45194



45212



45174



14720

**Reusable Beaded Top Centrifuge Tube, Heavy-Duty**

Plain, standard taper KIMAX tube is a heavy-duty version of 45160-15. Made with heavier walled tubing to withstand higher centrifugation speed. Top is beaded for strength.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|----------------------------|-----------|
| 45194-12       | 12        | 17 x 118                   | 12        |

**Reusable Threaded Centrifuge Tube, Heavy-Duty, with Unattached Cap**

Plain standard taper KIMAX tube made with heavier walled tubing to withstand higher centrifugation speeds. Top has screw thread finish. Cap with rubber liner is included but not attached. Replacement cap is 45066B.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | GPI Thread Finish | Case Qty. |
|----------------|-----------|----------------------------|-------------------|-----------|
| 45196-40       | 40        | 29 x 140                   | 24-410            | 12        |

**Replacement Part**

|           |  |     |
|-----------|--|-----|
| 45066B-24 | Phenolic Cap with Rubber Liner, 24-410 | 150 |
|-----------|--|-----|

**Reusable Threaded Centrifuge Tubes, Heavy-Duty, with Unattached Caps**

KIMAX tube with a heavy wall to withstand higher centrifuge speeds. Useful for clinical work and in many microbiological applications. Marking spot is sandblasted. Supplied with autoclavable caps with rubber liners. Cap is not attached. Replacement cap is 45066B.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | GPI Thread Finish | Case Qty. |
|----------------|-----------|----------------------------|-------------------|-----------|
| 45212-35       | 35        | 29 x 100                   | 24-410            | 12        |
| 45212-50       | 50        | 29 x 123                   | 24-410            | 12        |

**Replacement Part**

|           |  |     |
|-----------|--|-----|
| 45066B-24 | Phenolic Cap with Rubber Liner, 24-410 | 150 |
|-----------|--|-----|

**Reusable Centrifuge Tubes, Heavy-Duty, with Flathead PTFE Stoppers**

Standard taper KIMAX tube with color-coded PTFE stopper. Made with heavier walled tubing to withstand higher centrifugation speeds. (Do not centrifuge with stopper in tube).

| Catalog Number | Cap. (mL) | Stopper Size | O.D. x Approx. Length with Stopper (mm) | Case Qty. |
|----------------|-----------|--------------|---|-----------|
| 45174-13       | 13        | 13           | 17 x 145                                | 6         |
| 45174-50       | 50        | 16           | 29 x 170                                | 6         |

**Reusable Threaded Centrifuge Tube, Heavy-Duty, with Unattached Cap**

KIMAX tube with a screw thread finish and a small bottom area for better concentration of sediment thus facilitating decanting of liquid. Supplied with an unattached, white polypropylene closure with a pulp / vinyl coated liner.

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | GPI Thread Finish | Case Qty. |
|----------------|-----------|----------------------------|-------------------|-----------|
| 14720-200      | 200       | 60 x 145                   | 38-400            | 1         |

*See Oil Centrifuge Tubes on pages 9 and 10.*

**Reusable Centrifuge Tubes, Heavy Duty**

**Reusable Beaded Top Centrifuge Tube, Heavy-Duty, Graduated with White Scale**

Standard taper KIMAX tube is a heavy-duty version of 45165-15. Made with heavier walled tubing to withstand higher centrifugation speeds. Top is beaded for strength. Calibrated "to contain". Scale is durable white ceramic enamel.

| Catalog Number | Cap. (mL) | Subdivision (mL) | ±Tolerance (mL)   | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|------------------|---|----------------------------|-----------|
| 45199-12       | 12        | 0.1              | 0 to 0.2 - ± 0.05<br>Above 0.2 to 1 - 0.10<br>Above 1 to 3 - 0.15<br>Above 3 - 0.20 | 17 x 118                   | 12        |

**Reusable Threaded Centrifuge Tubes, Heavy-Duty, Graduated with White Scales, Unattached Caps**

Standard taper KIMAX tube is a heavy-duty version of 45166. Calibrated "to contain". Scale is durable white ceramic enamel. Made with heavier walled tubing to withstand higher centrifugation speeds. Top has a screw thread finish. Autoclavable cap with rubber liner is included but not attached. Replacement cap is 45066B.

| Catalog Number | Cap. (mL) | Subdivision (mL)          | ±Tolerance (mL)  | O.D. x Approx. Length (mm) | GPI Thread Finish | Case Qty. |
|----------------|-----------|---------------------------|--|----------------------------|-------------------|-----------|
| 45200-10       | 10        | 0.1                       | 0 to 0.2 - ±0.05<br>Above 0.2 to 1 - 0.10<br>Above 1 to 3 - 0.15<br>Above 3 - 0.20                       | 17 x 116                   | 15-415            | 12        |
| 45200-40       | 40        | 0-10 in 0.5<br>10-40 in 1 | 0 to 1 - ± 0.10<br>Above 1 to 2 - 0.20<br>Above 2 to 5 - 0.30<br>Above 5 to 10 - 0.50<br>Above 10 - 1.00 | 29 x 140                   | 24-410            | 12        |

**Replacement Parts**

|           |  |  |  |  |     |
|-----------|--|--|--|--|-----|
| 45066B-15 | Phenolic Cap with Rubber Liner, 15-415 |  |  |  | 150 |
| 45066B-24 | Phenolic Cap with Rubber Liner, 24-410 |  |  |  | 150 |

**Reusable Centrifuge Tubes, Heavy-Duty, Graduated with Amber Scales, ⌘ PTFE Flathead Stoppers**

KIMAX tube with a standard taper bottom and a graduated scale. Calibrated "to contain". With top finish to accept a ⌘ stopper. Scale is printed in permanent amber stain. Marking spot is sandblasted. (Do not centrifuge with stopper in tube.)

| Catalog Number | Cap. (mL) | Subdivision (mL)          | ±Tolerance (mL)   | O.D. x Approx. Length with Stopper (mm) | ⌘ Stopper Size | Case Qty. |
|----------------|-----------|---------------------------|---|---|----------------|-----------|
| 45176-13       | 13        | 0.1                       | 0 to 0.2 - ±0.05<br>Above 0.2 to 1 - 0.10<br>Above 1 to 3 - 0.15<br>Above 3 - 0.20                      | 17 x 140                                | 13             | 6         |
| 45176-50       | 50        | 0-10 in 0.5<br>10-50 in 1 | 0 to 1 - ±0.10<br>Above 1 to 2 - 0.20<br>Above 2 to 5 - 0.30<br>Above 5 to 10 - 0.50<br>Above 10 - 1.00 | 29 x 170                                | 16             | 6         |

**Reusable Centrifuge Tube, Heavy-Duty, Graduated with White Scale, ⌘ Glass Pennyhead Stopper**

Standard taper KIMAX tube is a heavy-duty version of 45153-15. Calibrated "to contain". Scale and marking spot are durable white ceramic enamel. Tooled for a ⌘ stopper, which is included. (Do not centrifuge with stopper in tube.) Replacement stopper is 41900R-13.

| Catalog Number | Cap. (mL) | Subdivision (mL) | ±Tolerance (mL)  | O.D. x Approx. Length with Stopper (mm) | ⌘ Stopper Size | Case Qty. |
|----------------|-----------|------------------|--|---|----------------|-----------|
| 45201-10       | 10        | 0.1              | 0 to 0.2 - ±0.05<br>Above 0.2 to 1 - 0.15<br>Above 1 to 3 - 0.10<br>Above 3 - 0.20 | 17 x 137                                | 13             | 6         |



45199



45200



45176



45201



**Reusable Centrifuge Tubes, High Strength**

**Reusable High Strength Centrifuge Tubes**

Plain KIMBLE (HS) High Strength 15 mL and 30 mL reusable centrifuge tubes are manufactured from Type 1, Class B, borosilicate glass. The tubes have been chemically strengthened to achieve a greater mechanical strength than standard borosilicate centrifuge tubes. These tubes can be centrifuged up to 13,100 RCF when used with an accessory rubber adapter sleeve in a 50 mL rotor cavity. Excluding caps, the tubes can withstand temperatures up to 300°C. Screw cap tube is supplied with 73802 cap with PTFE-faced rubber liner.



45500



45600



45550

**Plain**

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|----------------------------|-----------|
| 45500-15       | 15        | 18 x 102                   | 6         |
| 45500-30       | 30        | 24 x 106                   | 6         |

**Screw Thread**

| Catalog Number | Cap. (mL) | O.D. x Approx. Length (mm) | GPI Thread Size | Case Qty. |
|----------------|-----------|----------------------------|-----------------|-----------|
| 45600-15       | 15        | 18 x 102                   | 20-400          | 6         |
| 45600-30       | 30        | 24 x 106                   | 24-400          | 6         |

**Replacement Parts**

|             |   |     |
|-------------|---|-----|
| 45550-15    | Rubber Adapter Sleeve, 15 mL                  | 2   |
| 45550-30    | Rubber Adapter Sleeve, 30 mL                  | 2   |
| 73802-20400 | Phenolic Cap with PTFE / Rubber Liner, 20-400 | 144 |
| 73802-24400 | Phenolic Cap with PTFE / Rubber Liner, 24-400 | 144 |

**Reusable Centrifuge Tube, Graduated with White Scale, for Solubility Index**

KIMAX tube with standard taper. Calibrated "to contain". Scale is durable black ceramic enamel. Marking spot is white. Top is beaded for strength. Used in the determination of the solubility index of dry milk solids or whey products as specified by the American Dairy Products Institute.



45167

| Kimble Article No. | Cap. (mL) | Subdivision (mL)   | ±Tolerance (mL)   | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|--------------------|-----------|--|---|----------------------------|-----------------|-----------|
| 45167-50           | 50        | 0-1 in 0.1<br>1-2 in 0.2<br>2-10 in 0.5<br><br>10-20 in 1<br>and at 50 | 0 to 1 - ±0.075<br>Above 1 to 2 - 0.150<br>Above 2 to 5 - 0.300<br>Above 5 to 10 - 0.50<br>Above 10 - 1.0 | 29 x 133                   | 6               | 12        |

Centrifuge Tubes for Petroleum Testing

**Centrifuge Tube, Graduated with White Scale, API**

KIMAX tube with a long taper calibrated "to contain". Used to determine the bottom sediment and water in petroleum. Made in accordance with the specifications of the American Petroleum Institute. (API Standard 2542). Scale and marking spot are durable white ceramic enamel.

| Catalog Number | Cap. (%)         | Subdivision (%)                                       | ±Tolerance (%)  | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|------------------|---|---|----------------------------|-----------|
| 45170-125      | 100<br>(12.5 mL) | 0-3 in 0.2<br>3-10 in 0.5<br>10-50 in 1<br>and at 100 | 0 to 1 - ± 0.10<br>Above 1 to 2 - 0.15<br>Above 2 to 5 - 0.20<br>Above 5 to 10 - 0.40<br>Above 10 to 25 - 0.50<br>Above 25 - 1.00 | 17 x 118                   | 12        |



45170

**Centrifuge Tube, Goetz, Graduated with Black Scale, ₣ Glass Pennyhead Stopper**

KIMAX tube used for the determination of small quantities of solids in large volumes of liquids. Calibrated "to contain". Stem is graduated in 0.01 mL to 0.2 mL and the body has graduations at 25, 50, and 100 mL. Recommended for the determination of free water and sediment in diesel and other distillate fuels, as a pass-fail indication of product quality (ASTM D2709). Durable black ceramic enamel scale. White marking spot. Stopper is size 16. (Do not centrifuge with stopper in tube.)

| Catalog Number | Cap. (mL) | ±Tolerance (mL)                                      | O.D. x Approx. Length with Stopper (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------|--|---|-----------------|-----------|
| 45220-100      | 100       | 0 to 0.2 - ± 0.01<br>At 25 - 1.00<br>Above 25 - 2.00 | 58 x 185                                | 2               | 6         |



45220

**Centrifuge Tube, Oil, Graduated with Red Scale**

KIMAX graduated tube is used for the determination of water and sediment in petroleum products per ASTM method D3904. Calibrated "to contain". Top is tooled for a size 5 rubber stopper.

| Catalog Number | Cap. (mL) | Subdivisions (mL)   | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------|---|----------------------------|-----------|
| 412510-0000    | 100       | 0-3 in 0.1,<br>3-10 in 0.5,<br>and at 15, 20, 25, 50, and 100 | 58 x 170                   | 1         |



412510

**Centrifuge Tubes, Oil, Graduated with White Scales**

KIMAX tube used in the determination of bottom sediment and water in petroleum products and in the determination of foots in raw linseed oil by the gravimetric method (ASTM D1966). Calibrated "to contain". Stem diameter holds 1.5 mL. Scale and marking spot are durable white ceramic enamel.

| Catalog Number | Cap. (mL) | Subdivision (mL)  | ±Tolerance (mL)  | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------|---|--|----------------------------|-----------------|-----------|
| 45244-100      | 100       | 0-1.5 in 0.1<br>1.5-5 in 0.5<br><br>5-10 in 1<br>10-25 in 5<br>and at 50, 100 | 0 to 1.5 - ±0.03<br>Above 1.5 to 3 - 0.20<br>Above 3 to 5 - 0.30<br>Above 5 to 10 - 0.50<br>Above 10 to 25 - 1.00<br>Above 25 - 2.00 | 58 x 158                   | 6               | 12        |



1.5 mL stem capacity

45244-100

**Graduated in %. 100 mL equals 200%**

| Catalog Number | Cap. (%)        | Subdivision (mL)   | ±Tolerance (mL)   | O.D. x Approx. Length (mm) | Case Qty. |
|----------------|-----------------|--|---|----------------------------|-----------|
| 45244-200      | 200<br>(100 mL) | 0-3% in 0.10%<br>3-5 in 0.50<br>5-10 in 1<br>10-100 in 10<br>100-200 in 20 | 0 to 1.5 - ±0.03<br>Above 1.5 to 3 - 0.20<br>Above 3 to 5 - 0.30<br>Above 5 to 10 - 0.50<br>Above 10 to 25 - 1.00<br>Above 25 to 100 - 2.00 | 58 x 158                   | 6         |



45244-200

**Centrifuge Tubes for Petroleum Testing**

**Polyethylene Snap Caps fit all the tubes on this page.**



**Accessory Snap Caps, 6 / Case**  
**28150R-6** Size #6, Yellow  
**Case Price: 23.90**



**45240**

**Centrifuge Tube, Oil, Graduated with White Scale, 8"**

KIMAX tube used in the determination of water and sediment in crude mineral oils, fuel oils and other petroleum products (D1796 and MPMS 10.4 standards); in determination of volume of precipitate formed by centrifuging definite quantities of steam cylinder stocks and black oils and other lubricating oils (ASTM D91 and D128); in tests for water-insoluble solids in methylcellulose (ASTM D1347); and in testing for acidity of distillation residues or hydrocarbon liquids of gasoline or petroleum solvents (ASTM D1093). Calibrated "to contain". Scale and marking spot are durable white ceramic enamel. Also referenced in ASTM D4007. Top is tooled for a snap cap.

| Catalog Number | Cap. (mL) | Subdivision (mL) | ±Tolerance (mL)         | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------|------------------|-------------------------|----------------------------|-----------------|-----------|
| 45240-100      | 100       | 0-0.5 in 0.05    | 0 to 0.1 - ±0.02        | 37 x 203                   | 6               | 12        |
|                |           | 0.5-2 in 0.1     | Above 0.1 to 0.3 - 0.03 |                            |                 |           |
|                |           | 2-3 in 0.2       | Above 0.3 to 1 - 0.05   |                            |                 |           |
|                |           | 3-5 in 0.5       | Above 1 to 3 - 0.10     |                            |                 |           |
|                |           | 5-10 in 1        | Above 3 to 5 - 0.20     |                            |                 |           |
|                |           | 10-25 in 5       | Above 5 to 10 - 0.50    |                            |                 |           |
|                |           | 25-100 in 25     | Above 10 - 1.00         |                            |                 |           |

**Centrifuge Tube, Oil and Weathering (End Point Index), Graduated with White Scale, 8"**

KIMAX tube used extensively in California for the determination of residues in Liquefied Petroleum (LP) gases, ASTM Method D2158. Calibrated "to contain". Different graduations than 45240. Scale and marking spot are durable white ceramic enamel. Top is tooled for a snap cap.

| Catalog Number | Cap. (mL)       | Subdivision (mL) | ±Tolerance (mL)          | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------------|------------------|--------------------------|----------------------------|-----------------|-----------|
| 45241-100      | 100             | 0-1 in 0.05      | 0 to 0.1 - ±0.02         | 37 x 203                   | 6               | 12        |
|                |                 |                  | Above 0.1 to 0.30 - 0.03 |                            |                 |           |
|                |                 |                  | Above 0.3 to 1 - 0.05    |                            |                 |           |
|                |                 | 1-3 in 0.1       | Above 1 to 3 - 0.10      |                            |                 |           |
|                |                 | 3-6 in 0.2       | Above 3 to 5 - 0.20      |                            |                 |           |
|                |                 | 6-10 in 0.5      | Above 5 to 10 - 0.50     |                            |                 |           |
| 10-100 in 1    | Above 10 - 1.00 |                  |                          |                            |                 |           |



**45241**

**Centrifuge Tubes, Oil, Graduated with White Scales, Short Cone, 6"**

KIMAX tube designed for field use in testing petroleum. Calibrated "to contain". Scale and marking spot are durable white ceramic enamel. Referenced in ASTM D4007. Top is tooled for a snap cap.

| Catalog Number | Cap. (mL)       | Subdivision (mL) | ±Tolerance (mL)         | O.D. x Approx. Length (mm) | Shelf-Pack Qty. | Case Qty. |
|----------------|-----------------|------------------|-------------------------|----------------------------|-----------------|-----------|
| 45243-100      | 100             | 0-0.5 in 0.05    | 0 to 0.1 - ±0.02        | 45 x 165                   | 6               | 12        |
|                |                 |                  | Above 0.1 to 0.3 - 0.03 |                            |                 |           |
|                |                 |                  | Above 0.3 to 0.5 - 0.05 |                            |                 |           |
|                |                 | 0.5-2 in 0.1     | Above 0.5 to 1 - 0.075  |                            |                 |           |
|                |                 |                  | Above 1 to 1.5 - 0.10   |                            |                 |           |
|                |                 |                  | Above 1.5 to 2 - 0.20   |                            |                 |           |
|                |                 | 2-3 in 0.2       | Above 2 to 3 - 0.30     |                            |                 |           |
|                |                 |                  | 3-5 in 0.5              |                            |                 |           |
|                |                 | 5-10 in 1        |                         |                            |                 |           |
|                |                 | 10-25 in 5       | Above 10 to 25 - 1.00   |                            |                 |           |
| and at 50,100  | Above 25 - 1.50 |                  |                         |                            |                 |           |

**Graduated in %. 100 mL equals 200%.**

| Catalog Number  | Cap. (%)     | Subdivision (mL) | ±Tolerance (mL)         | O.D. x Approx. Length (mm) | Case Qty. |
|-----------------|--------------|------------------|-------------------------|----------------------------|-----------|
| 45243-200       | 200 (100 mL) | 0-0.1% in 0.10%  | 0 to 0.1 - ±0.02        | 45 x 165                   | 6         |
|                 |              |                  | Above 0.1 to 0.3 - 0.03 |                            |           |
|                 |              |                  | Above 0.3 to 0.5 - 0.05 |                            |           |
|                 |              |                  | Above 0.5 to 1 - 0.075  |                            |           |
|                 |              |                  | Above 1 to 1.5 - 0.10   |                            |           |
|                 |              |                  | Above 1.5 to 2 - 0.20   |                            |           |
|                 |              |                  | Above 2 to 3 - 0.30     |                            |           |
|                 |              |                  | Above 3 to 5 - 0.50     |                            |           |
|                 |              |                  | Above 5 to 10 - 0.75    |                            |           |
|                 |              |                  | Above 10 to 25 - 1.00   |                            |           |
| Above 25 - 1.50 |              |                  |                         |                            |           |



**45243-100**



**45243-200**

**Nomogram for Computing Relative Centrifugal Force**

One of the questions asked most frequently in the field of centrifugation is how does one relate revolutions per minute (R.P.M.) to relative centrifugal force (R.C.F.)? The following nomogram may be used directly or the R.C.F. may be calculated from the formula.

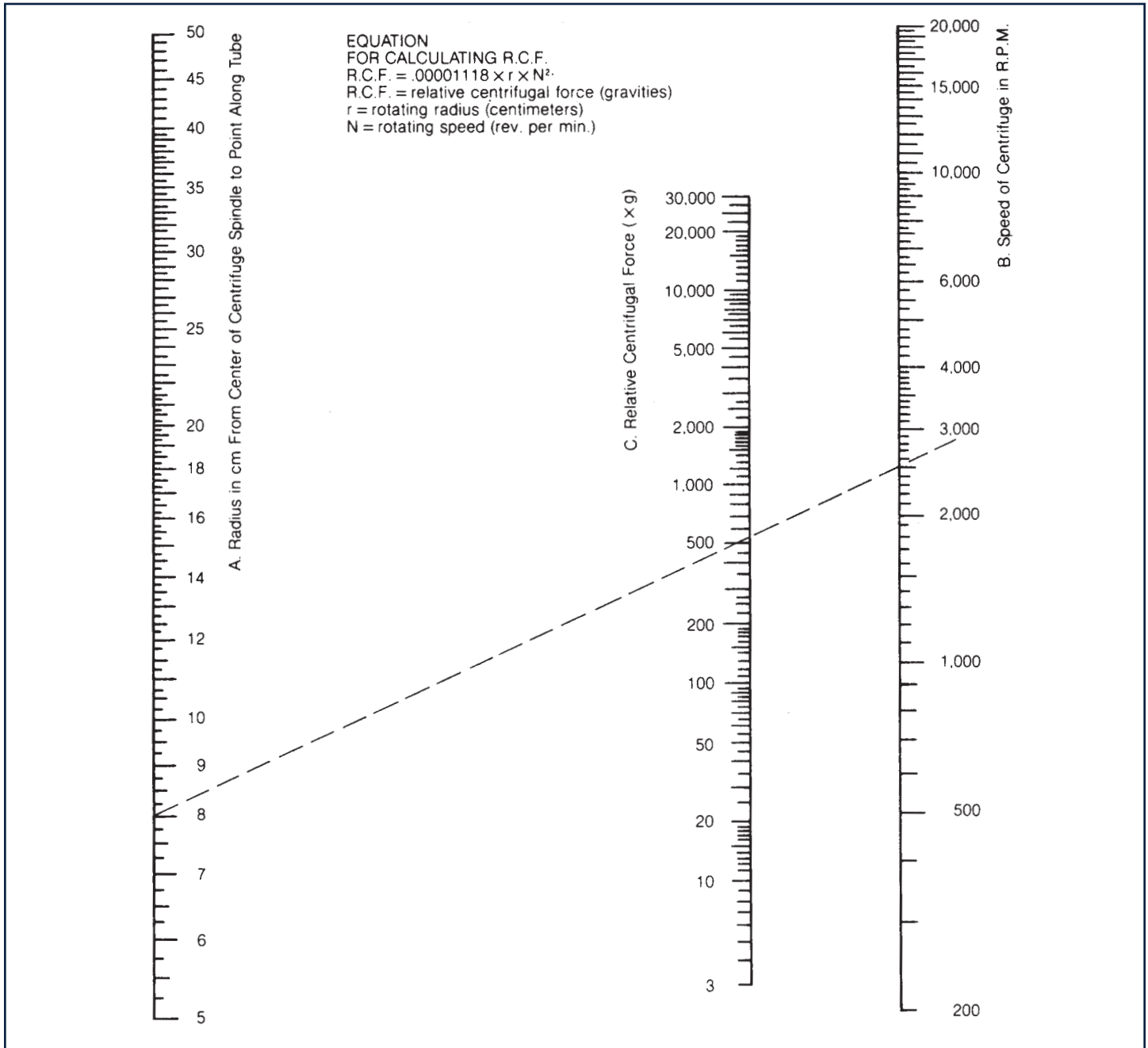
Equation for Calculating R.C.F.

$R.C.F. = .00001118 \times r \times N^2$  (R.C.F. = relative centrifugal force (gravities); r = rotating radius; N = rotating speed)

**Sample Calculation**

The relative centrifugal force (R.C.F.) at a radial distance of 8 cm from the center of centrifuge spindle when operating at a speed of 2500 R.P.M., may be determined by placing a straight edge on the nomogram connecting the 8 cm point on the Radius from Center Spindle Scale (A), with the 2500 R.P.M. point on the Speed Scale (B). The point of intersection on the Relative Centrifugal Force Scale (C), or 550 g is the relative centrifugal force ( $550 \times 32 = 17600$  psi).

If the desired R.C.F. is known, the speed of rotation for a given radius may be found by connecting the two points and reading the Speed Scale at intersection.



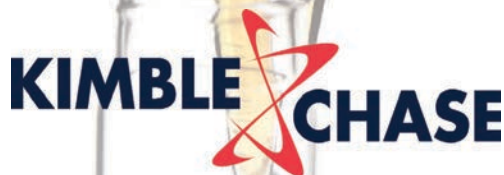
## KIMBLE CHASE - CENTRIFUGE TUBES

| Centrifuge Tube Quick Reference Chart and Page Index |      |           |                 |               |        |        |               |         |   |
|--|------|-----------|-----------------|---------------|--------|--------|---------------|---------|---|
| Cat. No.   | Page | Shape     | Graduations     | Stopper / Cap | < 15mL | ≥ 15mL | Heavy Duty    | Max RCF | Test Reference                                  |
| 14720  | 6    | round     | ungraduated     | screw cap     |        | x      |               | 3550    |   |
| 45150  | 3    | conical   | ungraduated     | beaded        | x      |        |               | 2980    |   |
| 45153  | 5    | conical   | white ceramic   | pennyhead     | x      | x      |               | 2980    | D2792   |
| 45160  | 3    | conical   | ungraduated     | beaded        |        | x      |               | 2980    |   |
| 45164  | 4    | conical   | red stain       | beaded        |        | x      |               | 2980    |   |
| 45165  | 4    | conical   | white ceramic   | beaded top    | x      | x      |               | 2980    |   |
| 45166  | 5    | conical   | white ceramic   | screw cap     | x      | x      |               | 2980    |   |
| 45167  | 8    | conical   | black           | beaded        |        | x      |               | 2980    | ADPI  |
| 45170  | 9    | conical   | white ceramic   | beaded        | x      |        |               | 2980    | API 2542, D96                                   |
| 45174  | 6    | conical   | ungraduated     | flathead      | x      | x      | x             | 2050    |   |
| 45176  | 7    | conical   | red/brown stain | flathead      | x      | x      | x             | 2050    |   |
| 45186  | 4    | conical   | white ceramic   | beaded top    |        | x      |               | 2000    |   |
| 45194  | 6    | conical   | ungraduated     | beaded        | x      |        | x             | 2980    |   |
| 45196  | 6    | conical   | ungraduated     | screw cap     |        | x      | x             | 3550    |   |
| 45199  | 7    | conical   | white ceramic   | beaded        | x      |        | x             | 2980    |   |
| 45200  | 7    | conical   | white ceramic   | screw cap     | x      | x      | x             | 2980    |   |
| 45201  | 7    | conical   | white ceramic   | pennyhead     | x      |        | x             | 2980    |   |
| 45212  | 6    | round     | ungraduated     | screw cap     |        | x      | x             | 3550    |   |
| 45220  | 9    | conical   | black ceramic   | pennyhead     |        | x      |               | 800     | ASTM D2709                                      |
| 45225  | 4    | capillary | white ceramic   | beaded        | x      |        |               | 2980    |   |
| 45240  | 10   | conical   | white ceramic   | snap cap      |        | x      |               | 800     | ASTM D91, D96, D128, D1093, D1347, D1796, D4007 |
| 45241  | 10   | conical   | white ceramic   | snap cap      |        | x      |               | 800     | ASTM D2158                                      |
| 45243  | 10   | conical   | white ceramic   | snap cap      |        | x      |               | 800     | ASTM D96, D3326, D4007,                         |
| 45244  | 9    | conical   | white ceramic   | —             |        | x      |               | 800     | ASTM D96, D1966                                 |
| 45246  | 5    | conical   | white ceramic   | screw cap     |        | x      |               | 2980    |   |
| 45500  | 8    | round     | ungraduated     | —             | x      | x      | high strength | 13100*  |   |
| 45600  | 8    | round     | ungraduated     | screw cap     | x      | x      | high strength | 13100*  |   |
| 73785  | 2    | conical   | ungraduated     | screw cap     | x      | x      |               | 2980    |   |
| 73790  | 2    | conical   | ungraduated     | snap cap      | x      | x      |               | 2980    |   |
| 410090   | 3    | conical   | ungraduated     | screw cap     | x      | x      |               | 2980    |   |
| 410550   | 5    | conical   | red ceramic     | flathead      | x      | x      |               | 2980    |   |
| 411050   | 3    | round     | ungraduated     | flathead      |        | x      |               | 2980    |   |
| 411800   | 3    | conical   | ungraduated     | snap cap      |        | x      |               | 2980    |   |
| 412510   | 9    | conical   | red ceramic     | #5 stopper    |        | x      |               | 800     |   |

\* when used with rubber adapter sleeve



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