

Cosmos Supply Co.,Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th



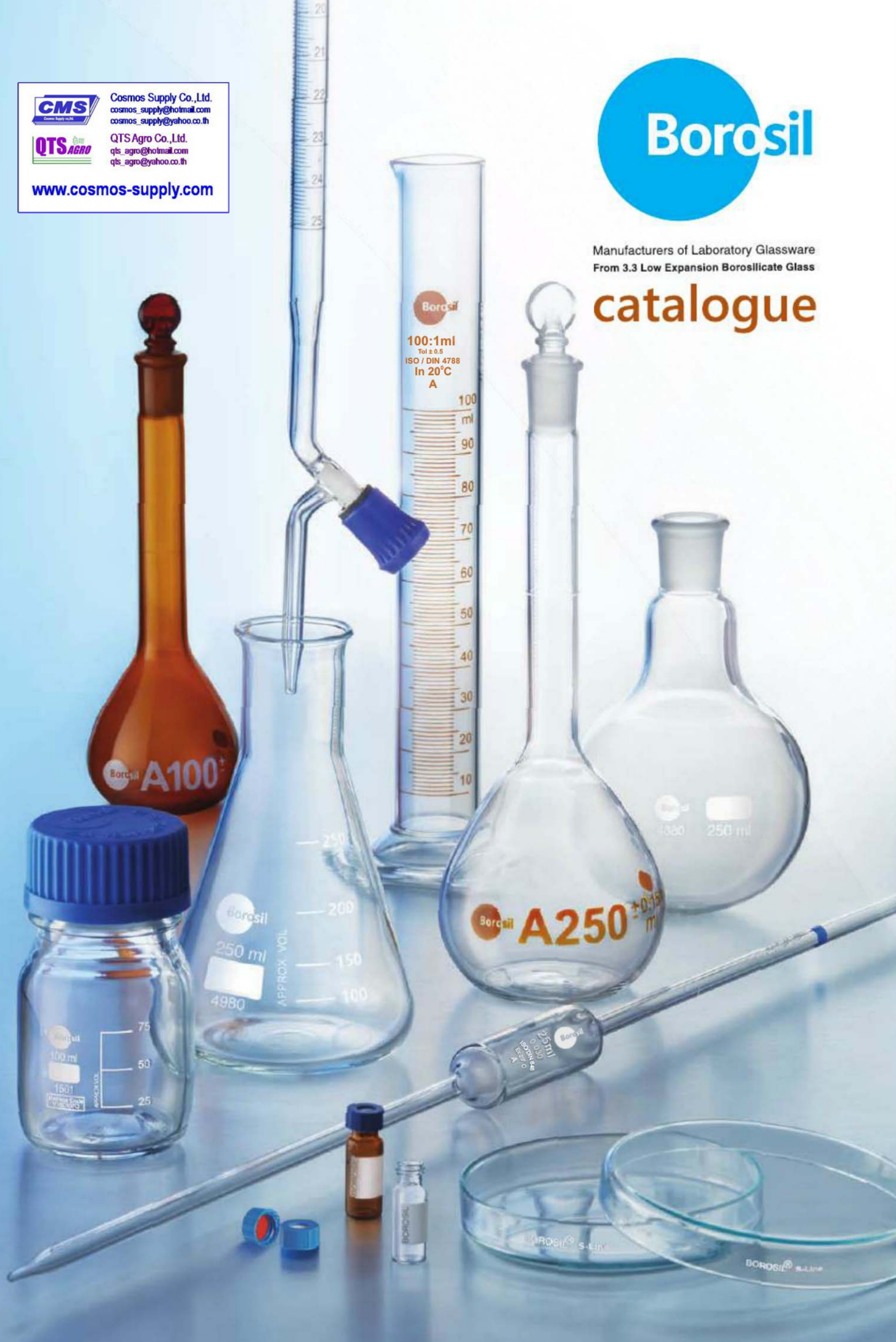
QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

www.cosmos-supply.com

Borosil

Manufacturers of Laboratory Glassware From 3.3 Low Expansion Borosilicate Glass

catalogue





Message from the Managing Director's Desk

S. KHERUKA
Managing Director

Dear Stakeholders,

Warm greetings for the new financial year. It is always my great pleasure to present to you our Catalogue.

I am excited to announce some changes in the format of our Catalogue this year. As you may notice, we have added high resolution color images of all our products in addition to the line diagrams that was traditionally depicted. Moreover, the format and content of our Catalogue has been updated and is now best in class and will stand as a benchmark for the laboratory consumables industry. The idea is to ensure that our customers can interact with our product, understand its look and have many of their questions answered even before they place orders.

Our continuous efforts to upgrade and improve the quality of our product range has resulted in some further product introductions. These can be found on page 26 to 31 of this catalogue.

One of the most important announcements for our organization is the starting up of our second manufacturing unit in Tarapur, India. This unit has been established in order to cater to the growing needs of our worldwide customers. I am confident that with the support of all our valued customers, this unit will achieve a high level of success!

It has always been Borosil's focus to enhance repeatability, traceability and performance across the product range. To this end, we have invested in machinery to further automate our production, calibration and certification facilities. With these improvements, we are confident that we will further consolidate our leadership position in the laboratory consumables industry. Moreover, further enhancements in our warehousing capabilities will help ensure our high quality products will reach our consumers faster than ever before.

For any comments or feedback on how we could serve you better, please feel free to contact me on borosil@borosil.com.

I take this opportunity to wish all of you the very best for the year ahead.

Best regards,

S. Kheruka

Borosil Glass Works Ltd.
an ISO 9001: 2008 certified company

Corporate Office : 1101, Crescenzo, G - Block, Opp. MCA Club,
Bandra Kurla Complex, Bandra (E), Mumbai, India

Phone : +91-22-6740 6300
Website : www.borosil.com

Corporate Profile

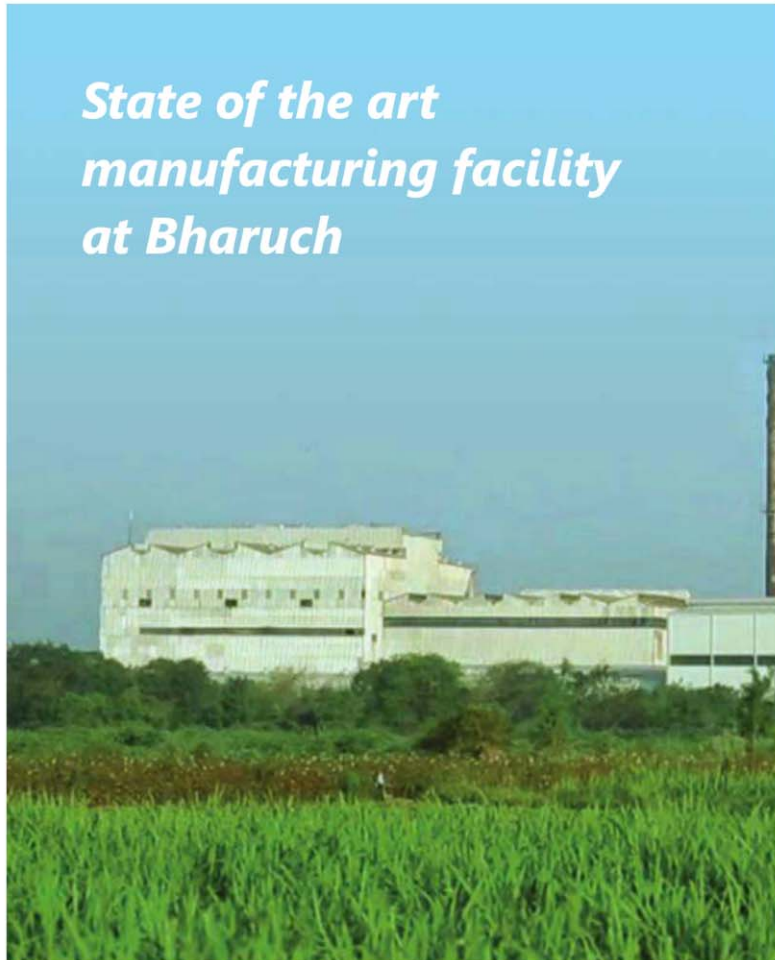
The Borosil Group comprises two independent companies – Borosil Glass Works Ltd. and Gujarat Borosil Ltd.

Borosil Glass Works Ltd. (BGWL) was established in December 1962 in collaboration with Corning Glass Works, USA, to manufacture borosilicate low expansion glass. In December 1988, Corning divested its shareholding to the current Indian promoters, who have been leading manufacturers of sheet glass in India, since 1961.

Borosil is the market leader in laboratory glassware and microwavable kitchenware in India.

Borosil's Scientific and Industrial Products (SIP) Division offers a wide range of equipment including laboratory glassware, instruments, disposable plastics, liquid handling systems and explosion-proof lighting glassware, through a network of 150 dealers spread across the length and breadth of the country. Quality, accuracy and dependability have become the hallmarks of the Borosil brand. For 50 years, Borosil has enjoyed the trust of its loyal customers that include leading pharmaceutical companies, R&D laboratories, scientific, health and educational institutions. Borosil glass is used in over 2,000 different products and applications, as diverse Microbiology, Biotechnology, Photo Printing, Process Systems and Lighting.

*State of the art
manufacturing facility
at Bharuch*





Borosil's Consumer Products Division sells microwavable and flameproof kitchenware, glass tumblers, melamine dinner and serveware, home appliances, and home décor products through over 10,000 retail outlets. Our products are synonymous with elegance, dependability, safety and ease of use. In the kitchenware segment in India, Borosil is a generic term for microwavable glassware. BOROSIL continues to remain amongst India's best known and most trusted brands for the last 50 years.

Gujarat Borosil Ltd. (GBL) was established in 1994 for the production of sheet glass using the Updraw Pittsburg process. Gujarat Borosil's 230 ton-per-day sheet glass furnace has the ability to manufacture glass that ranges from 3 mm to 12 mm thickness. Borosil sheet glass is used all over India for a variety of architectural applications. Recently, Gujarat Borosil has established a 150 ton-per-day low iron patterned glass furnace for the manufacture of high transmission glass that is used in the solar industry. The manufacturing unit comprises top-of-the-line European equipment. Leading solar module manufacturing companies worldwide are customers of this product. This plant is the first and only one of its kind in India, and has been developed specifically for the fast-growing solar industry.



ACCURACY

- Computer Controlled Calibration
- Reliability in experiments through individually certified volumetric glassware
- Facilitates audit procedures in the laboratory
- Enhanced production from new facility



MECHANICAL STRENGTH

- Optimum wall thickness
- Annealed glassware imparts better mechanical strength
- Ideal for vacuum application, wet and dry sterilization
- Harder, hence lasts longer



THERMAL SHOCK RESISTANCE

- Safely withstands thermal shock
- Annealed to remove residual thermal Stress
- Thinner, uniform wall, hence lasts longer



CHEMICAL DURABILITY

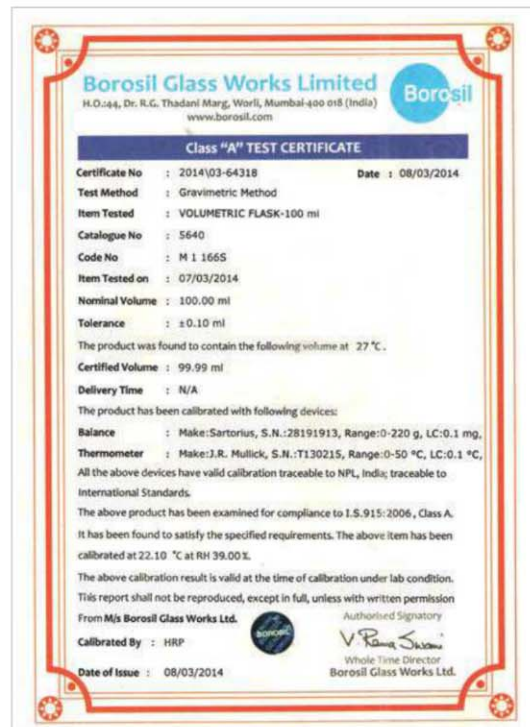
- High resistance to attack from acids, salt solutions and organic solvents
- Low alkalinity, hence less leaching
- Low alkalinity makes glass harder, hence lasts longer

certification

ISO certificate



Individual calibration certificate



Gost-R Certificate



*Individual Calibration Certificate
will be available on our website shortly*

automatic blank production facility



- State-of-art auto blowing facility used to produce blanks with uniform wall thickness and ensure exact shape and dimension according to the standards.
- All the blanks are manufactured from 3.3 Low Expansion Borosilicate Glass with controlled Internal Diameter tubing.



unique annealing facility



- All **Borosil** glasswares pass through annealing Lehr chamber where the stresses are eliminated under controlled heating and cooling process
- This annealing process ensures the long lasting printing quality. In order to get highest level of precision, carefully controlled gradual heating and cooling procedures are essential



petri dish manufacturing facility





Borosil is India's single largest manufacturer of a complete range of Volumetric Glassware. Borosil's Volumetric products are used in all laboratories from high-end pharmaceutical production companies to high schools and colleges.

Borosil adheres to the highest quality standards, right from the raw material used to the measurement and calibration of the finished product. Visual and physical quality checks are undertaken at each stage of production, in order to ensure the highest quality product for customers.

Borosil ensures that every Volumetric Glassware product is of the highest quality in the following parameters:

1. **Accuracy:** Please see 'Calibration Process' for a detailed understanding of how Borosil Volumetric Glassware is the most accurate in the world.
2. **Mechanical Strength:** All Borosil laboratory glassware products are annealed in a special chamber wherein the stress developed during the manufacturing process is eliminated with a controlled heating and cooling process. Moreover, Borosil's production processes ensure uniform wall thickness across all products, thereby enhancing their mechanical strength.
3. **Thermal Shock Resistance:** The annealing process further ensures that Borosil products are free of residual stress. The uniform wall thickness of Borosil products prevents damage owing to repeated heating and cooling in laboratories.
4. **Chemical Durability:** All Borosil laboratory glassware products are manufactured using 3.3 low expansion ASTM E-438 Type 1 Class A borosilicate glass. This glassware, by nature, is resistant to attack from acids, salt solutions and organic solvents.

calibration process



Computer controlled automatic calibration machine with optical laser beams to prevent human error and ensure highest level of accuracy and precision

Borosil performs the calibration process with fully automatic state-of-the-art calibration machines that eliminate any possibility of human error. This also ensures a high degree of repeatable measurements for all Borosil Volumetric products.

Borosil has an in-house set-up of a well-equipped temperature-controlled calibration laboratory with precision electronic balances, thermometers and stopwatches that are traceable to national standards. Calibration of Volumetric Glassware is entrusted to only trained and experienced technicians.

The following steps are carried out by highly precise, fully automated computer-controlled machines:

1. Filling the Volumetric blanks with a precisely-defined amount of de-mineralized water under controlled temperature.
2. The meniscus is determined with a laser-controlled camera at the exact lowest point of the water level, and the calibration mark is made with a fine diamond wheel. This gives accuracies that cannot be achieved by manual calibration.
3. Cylinders, Burettes and Pipettes are marked at a minimum of two calibration points.
4. The wet surface area factor is always taken into account, throughout the process.
5. The calibration laboratory is temperature, light controlled and temperature is maintained at $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

All Volumetric Glassware is calibrated either as

To contain TC / In

The contained quantity of liquid corresponds exactly to the capacity indicated on the article (e.g. graduated cylinders and volumetric flasks).

To deliver TD / Ex

The delivered quantity of liquid corresponds exactly to the capacity indicated on the article. (e.g. pipette and burettes).

These steps ensure that each and every Volumetric product leaving the **Borosil** facility meets the highest international standards and can be used for various purposes with the highest degree of repeatability and accuracy.





Rain water harvesting has been deployed in our 110 acre facility in Gujarat, since 2003.

Wind energy is the source of 48% of all the electricity that we consume.

Our Borosolar water heating systems are used to heat the water supplied in all Borosil Guesthouses and Colonies.

Our other energy efficient measures include advanced waste heat recovery systems and solar lighting.

Our in-house 9 hole par 36 Golf Course is maintained by using the water from our rain water harvesting initiative.

Borosil supports and runs a school, for children from neighbouring villages and employees' children.

Borosil proposes to open a hospital in the near future.







We nurture





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from BOROSIL



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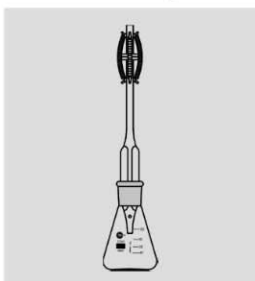
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Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th

QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

www.cosmos-supply.com



technical data

Borosil Low Expansion Borosilicate Glass:

From the 16th century to the present day, chemical research teams have been using glass containers for a very simple reason... As the glass container is transparent, the contents and the reaction are clearly visible. However, since chemists need to heat, cool and mix chemical substances, ordinary glass is not always appropriate for laboratory work.

Laboratory work requires apparatus made of glass that can readily be moulded into any desired shape or form. It requires glass that offers maximum inertness when in contact with the widest range of chemical substances. The glass should have the capability to withstand thermal shock without fracture, and it should facilitate high temperature work without deforming. It should be resilient enough to survive the everyday knocks to which it will be subjected in normal laboratory handling, washing and sterilising processes.

Borosil is the trade name of such a glass.

The products represent optimum mechanical, thermal and chemical behaviour. This glass is used in laboratories as well as for industrial applications, where thermal shock resistance, mechanical resistance as well as unusual chemical resistance are required.

Borosil glass is a low alkali borosilicate Type 3.3 glass. Its typical chemical composition is given below. It is virtually free of the Magnesia-Lime-Zinc group, and is also completely free of arsenic and other heavy material.

	Approx % by weight
SiO ₂	81
B ₂ O ₃	13
Na ₂ O / K ₂ O	4
Al ₂ O ₃	2

Thermal Properties

Borosil glass has a low co-efficient of thermal expansion. Consequently, the thermal stresses under a given temperature gradient are also low. The glass can withstand higher temperature gradients and also sudden temperature changes / thermal shocks. Minute scratching of the glass surface can, however, reduce its thermal resistance.

'Strain Point' should be regarded as the maximum safe operating temperature for Borosil glassware. When heated above 500°C, the glass may acquire permanent stresses on cooling.

All Borosil laboratoryware is annealed in a modern Lehr, under strictly controlled conditions to ensure minimal residual stresses in the products.

The typical thermal properties of Borosil glassware are mentioned below:

Coefficient of Linear Expansion	32.5 x 10 ⁻⁷ / °C
Strain Point	515°C
Annealing Point	565°C
Softening Point	820°C
Specific Heat	0.2
Thermal Conductivity (Cal / cm ³ / °C / sec)	0.0027

Chemical Durability

Borosil is highly resistant to water, neutral and acid solutions, concentrated acids and their mixtures, as well as to chlorine, bromine, iodine and organic substances. Even during an extended period of reaction and at temperatures above 100°C, its chemical resistance exceeds that of most metals and other materials. It can withstand repeated dry and wet sterilisation without surface deterioration and subsequent contamination. The resistance to attack by various chemicals is shown below. Only hydrofluoric acid, very hot phosphoric acid and alkaline solutions damage the glass surface with rising concentration and temperature.

Contact chemical	Duration In Hr	Loss in Wt mg / m ²
Water distilled at 100°C	6	10
Water Vapour Steam at 121°C	1	75
Acid HCL	6	100
80% H ₂ SO ₄ at 130°C	12	140
Alkali-1N soln. of Na ₂ CO ₃ boiling	6	4000
Infusion Fluids Isotonic		
NaCl (0.85%) 121°C	2½	70
Glucose (5%) 121°C	2½	50

Fabricating with Borosil Glass

As it has low expansion and is workable, **Borosil** glass can be shaped, formed or joined into complex apparatus. Analysts can even do so in their own laboratory and keep modifying until the desired apparatus is developed. In cases where annealing in a controlled oven is difficult, the analyst can perform flame annealing.

Optical Properties: Laboratory glassware made from **Borosil** glass shows no noticeable absorption in the visible region of the spectrum. Consequently, it appears clear and colourless.



Safe Use of Glassware

Borosil laboratory apparatus is designed to perform efficiently and last long, provided it is used with proper care. The following notes are presented to assist users in deriving the maximum life and performance from their Borosil apparatus. Our representatives will be happy to offer you advice on any aspect concerning the safe use of our products.

Heating and Cooling

Glass may suffer damage in three ways.

- It may break under thermal stress in the 'Steady State', that is when a constant thermal gradient is established through the glass.
- It may break under the transient stress of a thermal shock, which may be sudden heating or cooling.
- If heated beyond a certain temperature, it may acquire a permanent stress which, on cooling, could subsequently cause failure.

The following precautions will assist in preventing failures during heating and cooling procedures.

- Do not leave the vessel unattended when evaporation work is being carried out. The vessel may crack or explode as the 'dryness' condition approaches and if the heat source is not adjusted correctly. Decrease the temperature gradually as the liquid level drops.
- Always stay cautious when removing glassware from a heat source. Avoid placing it on a cold or damp surface.
- Even though glassware can withstand extreme temperatures, please keep in mind that sudden temperature changes may cause the vessel to break.
- Always cool vessels slowly to prevent thermal breakage.
- Never apply heat to badly scratched or etched vessels as their thermal strength would have been greatly reduced.
- Never apply point source heating to a vessel; it increases the possibility of breakage.
- Always diffuse the heat source by using a metal gauze or air/water bath. Alternatively, move the vessel slowly in relation to the heat source to ensure even heating.
- Adjust the Bunsen Burner to get a large, soft flame. It will heat slowly, but uniformly. Uniform heat is a critical factor for some chemical reactions.
- Ensure that the flame is in contact with the vessel below the liquid level. Heating above this level may result in breakage of the vessels.
- Always use anti-bumping devices in the vessel, such as powdered pumice or glass wool, when the vessel and its contents are required to be heated rapidly.

- Never use any material with sharp edges, such as broken porcelain, as an anti-bumping device. This will cause internal abrasions and reduce the mechanical and thermal strength of the vessel.
- Thick-walled glassware should not be subjected to direct flame or any other localised heat source. An electric immersion heater is ideally used for heating vessels of this type.
- Avoid heating glassware over electric heaters with open elements. Uneven heat of this type can induce localised stress and increase the possibility of breakage.
- Always keep in mind that a hot plate will retain heat long after the appliance has been switched off.
- Always ensure that the surface of the hot plate is larger in area than the base of the vessel being heated. A plate that is under-sized for the job at hand will result in uneven heating and may even cause breakage of the glassware.
- Always ensure that manufacturer's instructions are followed when using electrical heat sources.

Mixing and Stirring

- Always use a teflon sleeve or a similar device on stirring rods, to prevent scratching of the inside of the vessel.
- When using a glass vessel with a magnetic stirrer, always use a covered follower. This prevents abrasion of the inside of the vessel.
- When using a glass or metal mechanical stirrer in a glass vessel, always pre-determine the height of the stirrer before use, to ensure that the stirrer blade does not come in contact with the base or sides of the vessel.
- Never mix sulphuric acid and water inside a glass measuring cylinder. The heat caused by the reaction can break the base of the cylinder.

Vacuum and Pressure

- Never use glassware beyond the recommended safe limit.
- Always use a safety screen when working with glassware subjected to pressure or vacuum.
- Never subject glassware to sudden pressure changes. Apply and release positive or negative pressures gradually.



Joining and Separating Glass Apparatus

- When storing glass stopcocks and joints, insert a thin strip of paper between the joint surfaces to prevent them from sticking.
- Do not store stopcocks with lubricants on the ground surfaces for long durations.
- Glass stopcocks on Burettes and Separating Funnels require frequent lubrication to prevent them from sticking.
- If a ground joint sticks, separation can usually be achieved by carefully rocking the Cone in the socket, or gentle tapping the socket flange on a wooden surface, or by heating the socket and not the Cone in a localised flame. Using penetrating oil facilitates separation.
- When using lubricants, it is advisable to apply a light coat of grease all around the upper part of the joint. Use only a small amount, and avoid greasing the part of the joint that comes in contact with the inside of the apparatus.
- Three types of lubricants are commonly used on standard taper joints.
 - (a) Hydrocarbon grease is the most widely used. It can be removed easily by most laboratory solvents, including acetone.
 - (b) As hydrocarbon grease is easy to remove, silicon grease is usually preferred for higher temperature or high vacuum applications. It can be removed with chloroform easily.
 - (c) For long-term reflux or extraction reactions, a water-soluble, organic and insoluble grease such as glycerin, is suitable. Glycerin can be removed by means of water.
- When inserting glass tubing into a bung, it is recommended to use water, oil or glycerol on both, the tubing as well as the rubber bung. Always wear heavy protective gloves or similar protection when carrying out this operation.
- Always fire-polish the rough ends of the glass tubing before attempting to insert it into flexible tubing. The lubricants recommended above may also prove useful.
- Never attempt to pull a thermometer out of a rubber bung; always cut the bung away.

Personal Safety

- Use tongs or asbestos gloves to remove any glassware from heat. Hot glass can cause severe burns.
- Protective gloves, safety shoes, aprons and goggles should be worn to safeguard against chemical accidents, spilling or splattering.
- Always flush the outside of the acid bottle with water before opening it. Do not place the stopper on the counter top, where someone else may come in contact with acid residue.
- Care should be taken when handling mercury. Even a miniscule amount of mercury in the base of a drawer can poison the atmosphere in an entire room. Mercury toxicity is cumulative and the element's ability to amalgamate with a number of metals is well known. Following any accident involving mercury, the area should be checked thoroughly to ensure that there are no globules remaining. All mercury containers should be kept well stoppered.
- Never drink from a beaker. A beaker intended specifically for the use of drinking is a hazard in the laboratory. Do not taste chemicals to identify them. Smell chemicals only when necessary, and only by wafting a small amount of vapour towards the nose.
- Avoid using a Pipette with the mouth, particularly when using concentrated acids, alkalis or potentially bio-hazardous materials. Use mechanical means, such as a rubber bulb or an automatic dispenser.
- Do not fill the receptacle with any material other than that mentioned on the label. Label all containers before filling. Discard the contents of any unlabelled containers.
- To prevent breakage when clamping glassware, do not permit glass-to-metal contact, and do not use excessive force to tighten the clamps.
- Do not look down into a Test Tube being heated or containing chemicals, and do not point its open end at another person. A reaction could cause the contents to be ejected suddenly, resulting in injury.
- Splattering from acids, caustic materials and strong oxidising solutions on the skin or clothing should be washed off Immediately with large quantities of water.
- When working with chlorine, hydrogen sulphide, carbon monoxide, hydrogen cyanide and other highly toxic substances, always use a protective mask. Alternatively, perform these experiments under a fume hood in a well ventilated area.
- In working with volatile materials, please keep in mind that heat causes expansion and confinement of such expansion results in explosion. Also remember that this danger exists even if external heat is not applied.



- ♦ Perchloric acid is particularly dangerous as it explodes when brought in contact with organic materials. Do not use perchloric acid around wooden benches or tables.
- ♦ Keep perchloric acid bottles on glass or ceramic trays with capacity that is adequate to hold all the acid in case the bottle breaks.
- ♦ When using perchloric acid, always wear protective clothing.
- ♦ When using hot plates and other electrical equipment, always ensure that the wire and plugs are in good condition. Do not handle an electrical connection with damp hands.

Cleaning:

Clean glassware is an essential of good laboratory technique, because even the most carefully executed process may produce an erroneous result if the glassware used is dirty. Glassware must always be physically clean as well as chemically clean, in many cases it must be sterile. All glassware must be absolutely grease-free. The safest indicator of cleanliness is uniform wetting of the surface with distilled water. This is particularly important in glassware used for measuring the volume of liquids. Grease and other contaminants prevent the glass from becoming wet uniformly. This, in turn, alters the volume of residue that adheres to the walls of the glass container, thus affecting the volume of liquid measured or delivered. Abrasive cleaners and abrasive sponges should not be used on laboratory glassware as these may damage the surface of the glass. Such damage to the surface can affect the properties of the glass, and limit further use of the product.

- ♦ Cleaning of glassware that has contained hazardous materials must be undertaken only by experienced personnel.
- ♦ Most new glassware is slightly alkaline in reaction. For precision chemical tests, new glassware should be soaked for several hours in acid water (1% solution hydrochloric acid or nitric acid) before washing.
- ♦ Glassware that has been contaminated with blood clots, culture media, etc., must be sterilised before cleaning.
- ♦ If the glassware becomes unduly clouded or dirty, or contains coagulated organic matter, it must be cleaned with chromic acid cleaning solution. The dichromates should be handled with extreme care as it is a powerful corrosive.
- ♦ Wash glassware as quickly as possible after use, but if delay is unavoidable, the articles should be kept to soak in water.
- ♦ Grease can be removed by means of weak sodium carbonate solution, acetone or fat solvents. Never use strong alkalis.
- ♦ Hot water, along with recommended detergents, should be used. If the glass is extremely dirty, a cleaning powder with a mild abrasive action may be applied, provided the surface is not scratched.
- ♦ During the washing, all parts of the article should be thoroughly scrubbed with a brush selected for the shape and size of the glassware. Brushes should always be in good condition to avoid any abrasion of the glassware.
- ♦ When chromic acid solution is used, the item may be rinsed with the cleaning solution or it may be filled and allowed to stand-the amount of time depending on amount of contamination on the glassware.
- ♦ Special types of precipitate material may require removal with nitric acid, aqua regia or fuming sulphuric acid. These are very corrosive substances and should be used only when required.
- ♦ It is imperative that all soap detergents and other cleaning fluids be removed from glassware before use. This is especially important with the detergents, slight traces of which will interfere with serologic and culture reactions. After cleaning, thoroughly rinse with tap water ensuring that containers are partly filled with water, shaken and emptied several times. Finally rinse with deionised or distilled water.
- ♦ Drying can be undertaken either in baskets or on pegs in air or at a temperature not exceeding 120°C.
- ♦ Always Protect clean glassware from dust by use of temporary closures or by placing in a dustfree cabinet. For Cleaning Specific types of glassware, please refer below.

glassware cleaning tips

Pipettes cleaning :

- ◆ Place Pipettes with their tips down, in a cylinder or tall jar of water, immediately after use. Do not drop them into the jar as this may break or chip the tips and render the Pipettes useless for taking accurate measurements. A pad of cotton or glass wool at the base of the jar will help to prevent breaking of the tips. Please ensure that the water level is high enough to immerse the greater portion of all or each of the Pipettes. At a convenient time, the Pipettes may then be drained and placed in a cylinder or jar of dissolved detergent or, if extremely dirty, in a jar of chromic acid cleaning solution. After soaking them for several hours, or overnight, drain the Pipettes and run tap water over and through them until all traces of dirt are removed. Soak the Pipettes in distilled water for at least one hour. Remove them from the distilled water, dry the external surface with a cloth, shake out the water and dry.
- ◆ In laboratories where a large number of Pipettes are used everyday, it is convenient to use an automatic Pipette washer. Polyethylene baskets and jars may be used for soaking and rinsing Pipettes in chromic acid cleaning solution. Electrically heated metallic Pipette driers are also available.
- ◆ After drying, place the Pipettes in a dust-free drawer. Wrap serological and bacteriological Pipettes in paper or place them in Pipette cans and sterilise them in the dry air steriliser at 160°C for two hours. A Pipette used for transferring infectious material should have a plug of cotton placed in its mouth end before sterilising.

Burettes cleaning (with glass stopcock)

- ◆ Remove stopcock key and wash the burette with detergent and water.
- ◆ Rinse with tap water until all the dirt is removed. Then rinse with distilled water and dry.
- ◆ Wash the stopcock key separately. Before the stopcock key is replaced in the burette, lubricate the joint with a small amount of lubricant. Remember that burette stopcock keys are not interchangeable.
- ◆ Always cover burettes when not in use.
- ◆ Glass stopcocks are not interchangeable.
- ◆ The glass key and burette bore should be marked properly to avoid mixup.





Culture Tubes

- ♦ Culture tubes which have been used previously must be sterilized before cleaning. The best general method for sterilising culture tubes is by autoclaving for 30 minutes at 121°C (15 lb pressure). Media which solidify on cooling should be poured out while the tubes are hot. After the tubes are emptied, brush with detergent and water, rinse thoroughly with tap water, rinse with distilled water, place in a basket and dry.
- ♦ If tubes are to be filled with a medium which is sterilized by autoclaving, do not plug until the medium is added. Both medium and tubes are thus sterilized with one autoclaving.
- ♦ If the tubes are to be filled with a sterile medium or if they are to be sterilized by the fractional method sterilize the tubes in the autoclaves or dry air sterilizer before adding the medium.

Serological Tubes

- ♦ Serological Tubes should be chemically clean but need not be sterile. However, specimens of blood which are to be kept for some time at room temperature should be collected in a sterile container. It may be expedient to sterilize all tubes as routine.
- ♦ To clean and sterilize tubes containing blood, discard the clots in a waste container and place the tubes in a large basket. Put the basket with others, in a large bucket or boiler. Cover with water, add a fair quantity of soft soap or detergent and boil for 30 minutes. Rinse the tubes and clean with brush, rinse and dry with the usual precautions.
- ♦ It is imperative when washing serological glassware that all acid, alkali and detergent be completely removed. Both acid and alkali in small amounts destroy complement and in larger amounts produce hemolysis. Detergents interfere with serologic reactions.
- ♦ Serological tubes and glassware should be kept separate from all other glassware and used for nothing except serologic procedures.

Dishes And Culture Bottles

- ♦ Sterilize and clean as detailed under Culture Tubes.
- ♦ Wrap in heavy paper or place in a petri dish can.
- ♦ Sterilize in the autoclave or dry air sterilizer.



autoclaving laboratory glassware

Application Note

Autoclaves are widely used to sterilise instruments, glassware and plasticware, solutions and media, and to decontaminate biological wastes. Due to the physical hazards (e.g. heat, steam and pressure) associated with autoclaving, extra care must be taken to use them safely. Each Autoclave has unique characteristics and operating requirements. Please review and understand the owner's manual before using any Autoclave for the first time, and every time thereafter. Also, please follow all the safety regulations for autoclaving, laid down by your institution.

Autoclaving Borosil Glassware

- Borosil recommends the following safety practices when autoclaving laboratory glassware:
- Never autoclave items containing corrosives (e.g. acids, bases, phenol), solvents or volatiles (e.g. ethanol, methanol, chloroform) or radioactive materials.
- Place individual glassware vessels within a heat-resistant plastic or metal tray on a shelf or rack. Never place them directly on the Autoclave base or floor. Always maintain space (>5 cm) between glass vessels to give them room to expand while heating, and to prevent them from hitting other vessels when entering or leaving the Autoclave.
- Add water rising up to 1/4 to 1/2 inch in the tray, so that the glassware will heat more evenly.
- Check any plastic caps, tubing or other items to ensure they can be safely autoclaved with the glassware.
- Fill the glassware only half full with the liquids to be sterilised. Take into account, the volume of liquid to be autoclaved. A 2-litre flask containing 1 litre of liquid takes much longer to sterilise than four 500 ml flasks, each containing 250 ml of liquid.
- Do a test run when autoclaving larger volumes of liquid, to make sure that the liquid has reached 121°C.
- Large heavy glassware, such as 3L or larger spinner flasks, 5L or larger bottles and carboys should have a small amount of distilled water placed inside them to help generate steam when they are being sterilised dry in an Autoclave.
- Suspend an Autoclave thermometer with a thin wire, in the middle of the liquid-filled container to record the highest temperature reached. Then, check its reading after the Autoclave run is complete. If the temperature is too low, then the run-time will need to be increased or the volume will need to be reduced.
- To prevent bottles from getting shattered during pressurisation, the caps of the vessels with liquids must be loosened completely before loading. Always use the slow exhaust or liquid cool cycle when autoclaving liquids, to prevent the liquid from boiling over, causing loss of the contents.
- Never autoclave a sealed vessel containing liquids as this may result in an explosion of the super-heated liquid and steam during the cycle, or when the vessel is opened.
- Wear heat-resistant gloves when opening the Autoclave door after a cycle. When removing items from an Autoclave, at least a rubber apron, rubber sleeve protectors and heat-resistant gloves should be worn.
- Wait for 5 minutes before removing dry glassware from the Autoclave, and wait for 10 to 20 minutes before removing glassware containing liquids. The larger the volume of liquid, the longer you should wait. Liquids removed too soon may boil and overflow from the vessel, causing burns to the operator.
- Do not tighten caps on the vessels immediately after autoclaving as the cap or the vessel may get shattered due to the vacuum resulting from the cooling of the steam in the vessel. This is particularly important for larger vessels. Caps with liners may have their liner sucked into the vessel if the cap on the vessel opening is not loose enough.
- Do not put hot glassware, especially large bottles, from an Autoclave (or any other heat source) on to a cold bench top. The stress that is induced will often cause the base of the vessel to crack or fall off, releasing its hot contents.
- For non-liquid loads, please allow the glassware to cool for 15 minutes before touching it with ungloved hands.
- For liquid loads, please allow the liquid to stand for a full hour before touching the glassware with ungloved hands. Ensure that others in the vicinity are aware of the presence of a heat hazard.



BOROSIL®

Unique square shape GL-80 Bottles



Manufactures from 3.3 borosilicate glass for better chemical and thermal resistance

The 80mm wide neck is a special thread design for easy opening and closing, which enables easy pouring of powders, granules and liquids

The large and stable base area enables safe and easy storage

Square shapes allows easy gripping and handling

Smooth edges provide easy clean and handling

Bottles are provided with the printed white panel for labelling of contents

1506 - Bottles Reagent, Square With DIN Thread, Graduated, With PP Screw Cap (GL 80) And PP Pouring Ring

Product Code	Capacity ml	Approx W x B x H mm	Neck Specification	Quantity Per Case
1506024	500	94 x 94 x 141	GL-80	10
1506029	1000	105 x 105 x 187	GL-80	10
1506030	2000	115 x 115 x 260	GL-80	10
1506033	5000	160 x 160 x 357	GL-80	1

Amber colour bottles are available on request.



3084 - Desiccators, With Cover And Porcelain Plate, Plastic Knob, Amber

- Complies with IS 6128
- Suitable for light sensitive products

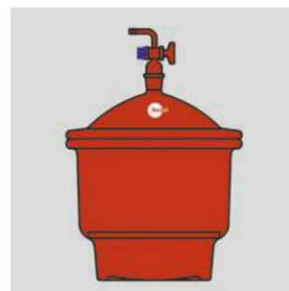
Product Code	Approx ID Ground Flange mm	Quantity Per Case
3084041	100	1
3084042	150	1
3084043	200	1
3084044	250	1
3084045	300	1



3085 - Desiccators, Vacuum, stopcock with PTFE spindle and Porcelain plate, Amber

- Complies with IS 6128
- Suitable for light sensitive products

Product Code	Approx ID Ground Flange mm	Quantity Per Case
3085041	100	1
3085042	150	1
3085043	200	1
3085044	250	1
3085045	300	1






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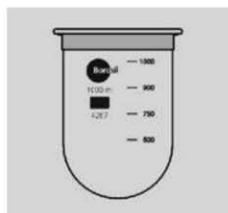
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4270 - D - Flasks for Dissolution Apparatus without side cut

- Vessels confirms to all requirements of USP
- Smooth hemispherical base with no flaws or defects, straight sides and a flat flange
- Graduated in intervals of 50ml
- Ideal for determining the dissolution characteristics of drugs in capsules and tablets

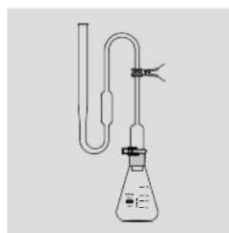
Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
4270029	1000	107 x 161	10



5200 - Arsenic Determination Apparatus as per USP

- Designed for the estimation of Arsenic

Product Code	Quantity Per Case
5200001	1

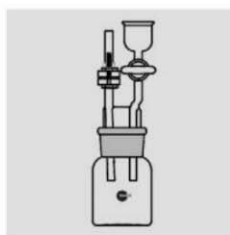




5201 - Arsenic Determination Apparatus Gutzeit

- Designed for the estimation of Arsenic

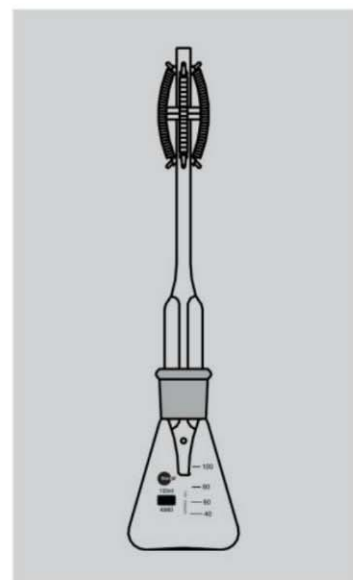
Product Code	Quantity Per Case
5201001	1



5202 - Arsenic Determination Apparatus as per BP

- Designed for the estimation of Arsenic

Product Code	Quantity Per Case
5202001	1

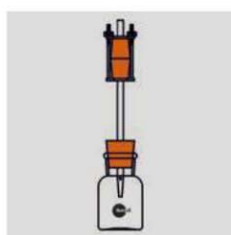




5203 - Arsenic Determination Apparatus as per IP

- Designed for the estimation of Arsenic

Product Code	Quantity Per Case
5203001	1



5204 - Arsenic Determination Apparatus as per IS

- Designed for the estimation of Arsenic

Product Code	Quantity Per Case
5204001	1





5653 - Flasks, Wide Mouth Volumetric With Interchangeable Solid Glass Stopper, Amber, Class A, With Batch Certificate

- Complies with ISO / DIN 1042
- Calibration at 20°C
- Specially designed wide mouth for testing bigger dia. Tablets without making it in powder form
- Manufactured from 3.3 borosilicate glass with an amber coating on exterior surfaces to facilitate use with light sensitive solutions

Product Code	Capacity ml	Tolerance \pm ml	Stopper Size	Quantity Per Case
5653009D	25	0.06	14 / 23	5
5653012D	50	0.10	14 / 23	10
5653016D	100*	0.02	19 / 26	10
5653020D	200*	0.15	19 / 26	10

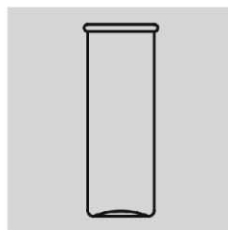
* Not covered under standards



9822 - Tube Flat Bottom with RIM

- Made of 3.3 borosilicate glass, designed with a flat bottom
- High thermal shock resistance
- Designed without a rim
- Used for pathological tests and disintegration apparatus

Product Code	Approx O.D. x Length mm	Quantity Per Case
9822U06	18 x 138	400
9822U07	18 x 55	100
9822U04	14 x 110	800



NABL accredited laboratory



Our NABL-accredited laboratory for calibration and testing of Glass Volumetric products including Burettes, Cylinders, Volumetric Flasks and Pipettes (both Graduated and Volumetric), is now operational.

In this catalogue, we present the complete range of Borosil products that are available with a Calibration Certificate issued by the NABL-accredited laboratory.

In certain critical areas, it is mandatory that representative samples of Volumetric products used by the laboratories be sent to NABL-accredited laboratories for testing of the calibration.

With the establishment of our own facility, our customers can now get the products certified by our laboratory directly, without sending them to other laboratories, saving a considerable amount of time and cost.

Borosil
Borosil Glass Works Ltd.
VYLINE GLASS WORKS LTD.
CALIBRATION LABORATORY

Calibrated for: Borosil Glass Works Ltd.
Sample Description: 5000 Volumetric Flask
Capacity: 5000 ± 0.4 ml at 20 °C
Lab No./ID No.: V1211191
Date of receipt: 10.11.2012
Calibration Purpose: Measurement of Volume
Environmental conditions: Temperature: (23 ± 2) °C, Relative Humidity: (50.0 ± 10.0)% RH
Nominal capacity: 5000 ml
Actual capacity: 4998.821 ml
Expanded uncertainty: 0.300 ml
Calibration Method: VGM Calibration Laboratory Procedure No. PM-VGM/15-427/A
Traceability of major equipments / materials / standards used: NIST
Equipment: VGM/15/100, VGM/15/100
Set of Weights: N/A
Certificate No.: WMC/L/2011-C480
Valid upto: 06.09.2013
06.09.2013

SAMPLE CERTIFICATE

RESULTS

All the above equipments are traceable to National Standards through NABL accredited Laboratory.

Note:
• The calibration results in this certificate are valid at the time of and under the stated conditions of measurement for the particular sample identified above.
• This calibration certificate shall not be reproduced except in full without written permission of laboratory.

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Authorized Signatory: [Signature]
Printed by: [Signature]
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Village: Dandale, Bantwa, Post: Bantwa,
Taluka: Pimpri, District: Pune - 411004, India
Phone: 020451223116
Fax: 020451223116
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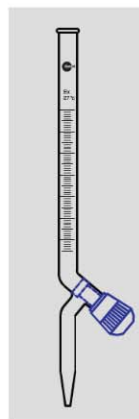


NABL Certified

2000 - Burettes, Boroflo GP (General Purpose), Screw Thread Stopcocks With PTFE Keys, Accuracy As Per Class A, With Certificate, NABL Certified

- Complies with IS 1997, ISO / DIN 385

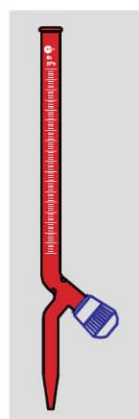
Product Code	Capacity ml	Graduation Interval	Tolerance \pm ml	Quantity Per Case
2000006	10	0.05	0.02	1
2000009	25	0.1	0.05	1
2000012	50	0.1	0.05	1
2000016	100	0.2	0.1	1



2001 - Burettes, Boroflo GP (General Purpose), Screw Thread Stopcocks PTFE Keys, Accuracy As Per Class A, With Certificate, NABL Certified, Amber

- Complies with IS 1997, ISO / DIN 385

Product Code	Capacity ml	Graduation Interval	Tolerance \pm ml	Quantity Per Case
2001009	25	0.1	0.05	1
2001012	50	0.1	0.05	1





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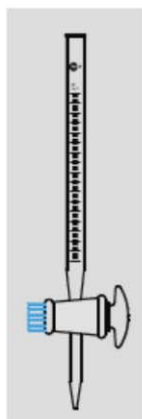
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2002 - Burettes, Straight Bore Stopcock, Accuracy As per Class A, With Certificate, NABL Certified

- Complies with IS 1997, ISO / DIN 385

Product Code	Capacity ml	Graduation Interval	Tolerance \pm ml	Quantity Per Case
2002006	10	0.05	0.02	1
2002009	25	0.1	0.05	1
2002012	50	0.1	0.05	1
2002016	100	0.2	0.1	1



2010 - Cylinders, Graduated, Single Metric Scale, With Pour Out, With Hexagonal Base, Class A, With Certificate, NABL Certified

- Complies with IS 878, ISO / DIN 4788

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2010005	5	0.1	0.05	1
2010006	10	0.2	0.1	1
2010009	25	0.5	0.25	1
2010012	50	1.0	0.5	1
2010016	100	1.0	0.5	1
2010018	150	2.0	1.0	1
2010021	250	2.0	1.0	1
2010024	500	5.0	2.5	1
2010029	1000	10.0	5.0	1
2010030	2000	20.0	10.0	1






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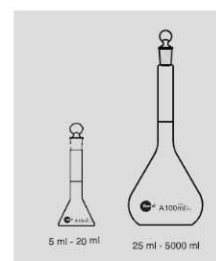
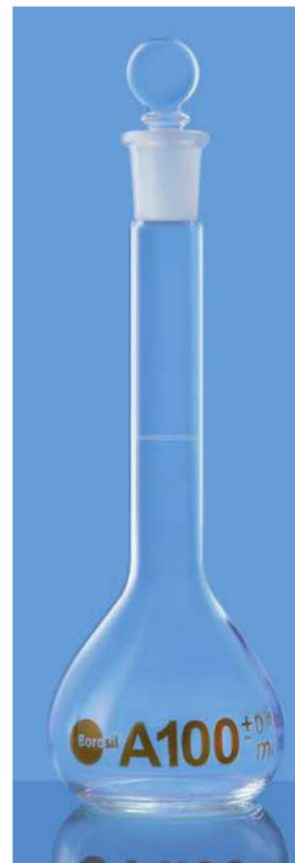
NABL Certified

2020 - Flasks, Volumetric, With Interchangeable Solid Glass Stopper, Accuracy As Per Class A, With Certificate, NABL Certified

- Complies with IS 915, ISO / DIN 1042
- 5 to 20 ml supplied with Trapezoidal Shape for better stability
- Each flask engraved with individual serial number and supplied with NABL certificate of calibration traceable to National standards
- Manufactured from borosilicate glass for corrosion-free performance
- Amber enamel inscriptions

Product Code	Capacity ml	Tolerance \pm ml	Stopper Size	Quantity Per Case
2020001	1*	0.015	7 / 16	1
2020002	2*	0.015	7 / 16	1
2020005	5	0.025	7 / 16	1
2020006	10	0.025	7 / 16	1
2020008	20	0.04	10 / 19	1
2020009	25	0.04	10 / 19	1
2020012	50	0.06	12 / 21	1
2020016	100	0.10	14 / 23	1
2020020	200	0.15	14 / 23	1
2020021	250	0.15	14 / 23	1
2020024	500	0.25	19 / 26	1
2020029	1000	0.40	24 / 29	1
2020030	2000	0.60	29 / 32	1

* 1ml and 2 ml sizes are of test tube shape.



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cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th

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qts_agro@hotmail.com
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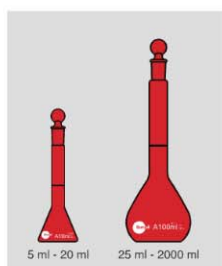
NABL Certified



2021 - Flasks, Volumetric, With Interchangeable Solid Glass Stopper, Accuracy As Per Class A, With Certificate, NABL Certified

- Complies with IS 915, ISO / DIN 1042
- 5 to 20 ml supplied with Trapezoidal Shape for better stability
- Each flask engraved with individual serial number and supplied with NABL certificate of calibration traceable to National standards
- Manufactured from borosilicate glass with an amber coating on exterior surfaces to facilitate use with light sensitive solutions
- White enamel inscriptions

Product Code	Capacity ml	Tolerance \pm ml	Stopper Size	Quantity Per Case
2021005	5	0.025	7 / 16	1
2021006	10	0.025	7 / 16	1
2021008	20	0.04	10 / 19	1
2021009	25	0.04	10 / 19	1
2021012	50	0.06	12 / 21	1
2021016	100	0.10	14 / 23	1
2021020	200	0.15	14 / 23	1
2021021	250	0.15	14 / 23	1
2021024	500	0.25	19 / 26	1
2021029	1000	0.40	24 / 29	1
2021030	2000	0.60	29 / 32	1





NABL Certified

2030 - Pipettes, Measuring (Mohr Type), Accuracy As Per Class A, With Certificate, NABL Certified

- Complies with IS, ISO / DIN 835
- These Pipettes are graduated for delivery from zero mark to the last graduation mark
- Sturdy designed to last long
- Markings are made in permanent amber stain diffused into the surface of the glass for better visibility and durability
- Supplied with individual NABL calibration certificate showing actual volume dispensed and providing traceability to national standards

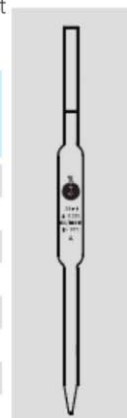
Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity per Case
2030P41	0.1	0.01	0.006	1
2030P42	0.2	0.01	0.006	1
2030P01	1	0.01	0.006	1
2030P11	1	0.1	0.006	1
2030P02	2	0.02	0.01	1
2030P22	2	0.1	0.01	1
2030P05	5	0.05	0.03	1
2030P55	5	0.1	0.05	1
2030P06	10	0.1	0.05	1
2030P09	25	0.2	0.1	1



2040 - Pipettes, Transfer, Volumetric, Accuracy As Per Class A, With Certificate, NABL Certified

- Complies with ISO / DIN 648
- Calibrated for delivery (TD, Ex)
- Generally used for accurate measurement and decanting of liquid
- Each pipette coded with unique no. supplied with NABL calibration certificate giving exact volume with traceability to national standards

Product Code	Capacity ml	Tolerance \pm ml	Quantity per Case
2040001	1	0.007	1
2040002	2	0.010	1
2040005	5	0.015	1
2040006	10	0.020	1
2040008	20	0.030	1
2040009	25	0.030	1
2040012	50	0.050	1
2040016	100	0.080	1





Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th



QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

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Beaker

Whether it is research, industry or education the Beaker has a wide range of applications. This simple container used for stirring and mixing liquids is also ideal for heating them. Controlled wall thickness at the sides, radius and the base ensures a fine balance between the thermal resistance and mechanical strength, to enable effective heating. Many Beakers also have a spout that makes pouring easier and more precise.

Borosil Glassware are best-in-class product with several advantages. It has a high level of thermal shock resistance ($\Delta T = 100\text{ K}$) and a high operating temperature. Besides using quality glass of a particular type, constant quality control checks are conducted throughout the production process to ensure uniformity of the wall thickness. Such uniform wall thickness distribution prevents uneven expansion and stressing of the glass that often result in a failure.

Beakers are mainly used as heating vessels. The tall-shape design of the Beaker is ideal for heating in a liquid bath, especially when the contents need to be kept distinctly apart from the surrounding medium or materials.

The No. 1000 **Borosil**[®] brand Beaker and the No. 1060 **Borosil**[®] brand Tall Form are two popular styles used for storage and mixing.





1000 - Beakers, Griffin, Low Form, with spout

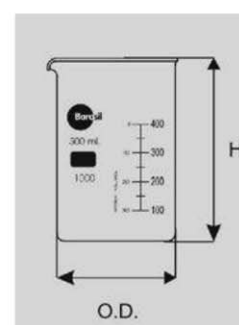
- Complies with IS 2619 / ISO 3819 and DIN 12331
- The spout design enables clean and precise pouring
- Uniform wall thickness distribution makes it ideal for heating liquids
- The easy-to-read scale and large labelling field make marking easier
- High resistance to chemical attack
- Double graduation metric scale for convenience

Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
1000005	5*	22 x 30	20
1000006	10*	26 x 35	20
1000009	25	34 x 50	60
1000D12	50	42 x 60	120
1000D16	100	50 x 70	60
1000D18	150	60 x 80	90
1000D21	250	70 x 95	60
1000D23	400	80 x 110	50
1000D24	500	83 x 115	50
1000D25	600	90 x 125	40
1000D29	1000	105 x 145	45
1000D30	2000	131 x 185	6
1000D31	3000	150 x 210	4
1000D33	5000	170 x 270	4
1000D38	10000**	220 x 350	1

25ml to 10000ml Graduated.

* 5 ml and 10 ml Beakers are not graduated.

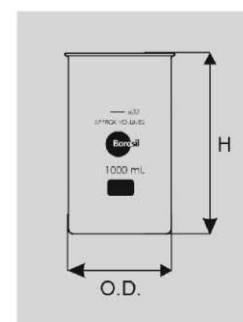
**10000 ml not covered in IS, ISO and DIN standards.



1006 - Beaker, Tablet Disintegration

- It has a large labelling field that enables easy marking
- Specially designed for Tablet disintegration machine

Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
1006029	1000	105 x 145	10





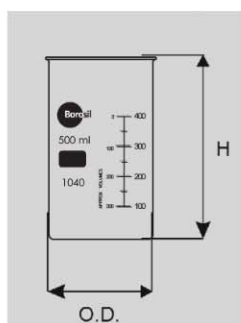

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cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th

QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

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Beaker

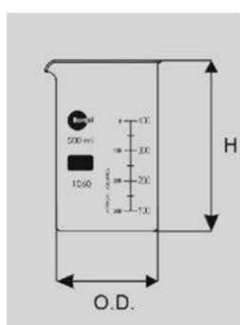


1040 - Beakers, Tall form, Without Spout

- Complies with IS 2619 / ISO 3819 and DIN 12331
- Graduated to indicate the approximate content
- The easy-to-read scale and large labelling field make marking easier
- Uniform wall thickness distribution makes it ideal for heating liquids
- This beaker is designed without a pouring spout

Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
1040012	50	38 x 70	40
1040016	100	48 x 80	50
1040021	250	60 x 120	40
1040024	*500	77 x 137	20
1040029	1000	95 x 180	20

* 500 ml not covered in IS, ISO and DIN.



1060 - Beakers, Tall Form, With Spout

- Complies with IS 2619 / ISO 3819 and DIN 12331
- Uniform wall thickness distribution makes it ideal for heating liquids
- Graduated to indicate the approximate content
- All sizes are equipped with a durable matt-finished enameled space for marking
- This Beaker is designed without a pouring spout

Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
1060012	50	38 x 70	40
1060D16	100	48 x 80	50
1060D21	250	60 x 120	40
1060D24	500	77 x 137	20
1060D29	1000	95 x 180	20

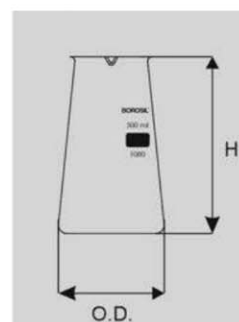


Beaker

1080 - Beakers, Philips (Conical) with Spout

- Its mouth is smaller in diameter than its base
- The Phillips Beaker is ideal for measuring, containment, mixing and decanting
- Conical shape (Phillips pattern) with spout
- Excellent thermal performance and chemical resistance

Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
1080021	250	68 x 110	50
1080024	500	88 x 145	40





Cat No. : 9001

Available in Convenient Sizes:
500 ml
5000 ml
25000 ml




- ✦ Excellent cleaning performance
- ✦ Totally Bio-degradable
- ✦ Non-Toxic ingredients
- ✦ Free from scents
- ✦ Free from phosphates

The Ultimate Cleaning Agent for Laboratory Glassware

Bottles

Bottles have multiple uses. As the Aspirator, Reagent and Solution Bottles are not used for direct heating purposes, they are designed with heavier wall thickness, making them mechanically stronger to withstand wet or dry sterilisation. The high chemical durability of the glass ensures that most reagents can be stored in these bottles for long durations in almost the same condition. Plain Neck Solution Bottles are designed to have a uniform rubber stopper fit. Roux Bottles and Milk Dilution Bottles have flat surfaces and are widely used for culture growth.

The outstanding **Borosil**[®] quality provides capabilities for a wider range of functions, from long-term storage to the most demanding applications in the pharmaceutical industry.





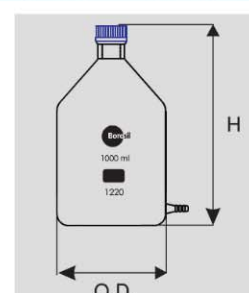
1220 - Bottle, Aspirator, With GL 45 Cap And Outlet For tubing

- Complies with IS 1388 (Part III), ISO / DIN 4796 (Part III)
- Large labelling field
- Complete with PP screw cap and pouring ring
- Suitable for storage of aggressive media that can damage plastic parts
- Dosing of liquids via tubing
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Approx O.D. x Height* mm	Neck size	Quantity Per Case
1220021	250**	70 x 138	GL 45	10
1220024	500**	86 x 176	GL 45	10
1220029	1000	101 x 225	GL 45	10
1220030	2000	136 x 260	GL 45	5

**Not covered in ISO / DIN standards.

*Height indicated is of Bottle only

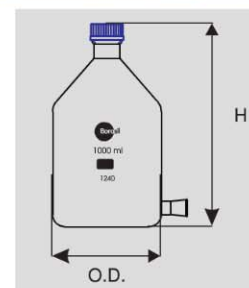


1240 - Bottle, Aspirator, with GL-45 Cap and outlet for stopper

- Complies with IS 1388 (Part III), ISO / DIN 4796 (Part III)
- Large labelling field
- Complete with PP screw cap and pouring ring
- Suitable for storage of aggressive media that can damage plastic parts
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Approx O.D. X Height* mm	Neck size	Approx I.D. Outlet mm	Quantity Per Case
1240029	1000	101 x 225	GL 45	23	10
1240030	2000	136 x 260	GL 45	28	5
1240033	5000	180 x 330	GL 45	28	2
1240038	10000	227 x 410	GL 45	28	1

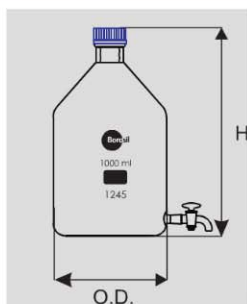
*Height indicated is of Bottle only



Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th

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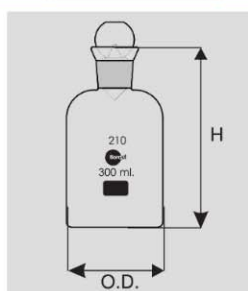


1245 - Bottle, Aspirator, With GL 45 Cap With Interchangeable Stopcock

- Complies with IS 1388 (Part III), ISO / DIN 4796 (Part III)
- Large labelling field
- Complete with PP screw cap and pouring ring
- Suitable for storage of aggressive media that can damage plastic parts
- All sizes have a durable matt-finished enamelled area for marking
- Dosing of liquids via stopcock

Product Code	Capacity ml	Approx O.D. x Height* mm	Neck Size	Approx I. D. Outlet mm	Quantity Per Case
1245029	1000	101 x 225	GL 45	24 / 29	10
1245030	2000	136 x 260	GL 45	29 / 32	4
1245033	5000	181 x 330	GL 45	29 / 32	2
1245038	10000	227 x 410	GL 45	29 / 32	1
1245040	20000	288 x 505	GL 45	29 / 32	1

*Height indicated is of Bottle only



1250 - Bottles, B.O.D. With Interchangeable Stopper

- Complies with IS 9213
- Used for determination of B.O.D. in industrial effluents, waste and water
- Individual number printed on the bottle

Product Code	Capacity ml	Approx O. D. x Height* mm	Quantity Per Case
NEW 1250013	60	42 x 100	10
1250017	125	55 x 120	10
1250022	300	70 x 143	30

*Height indicated is of Bottle only

300ml is for determination of B.O.D. in Industrial effluents, wastes and water as per method specified by the American Public Health Association and is numbered individually.



Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th



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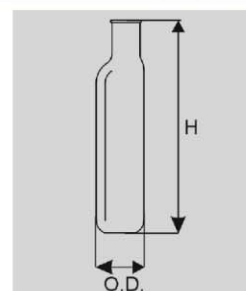
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1290 - Bottles, Culture, Roux, Off-Set Neck

- Complies with IS 6942
- Designed to hold approximately half of the stated capacity of solution, when the Bottle is laid flat
- The offset neck is tool-finished for greater strength and uniform stopper fit
- These bottles facilitate the growing of mass cultures and single or monolayer cultures
- It withstands repeated sterilisation (wet or dry)

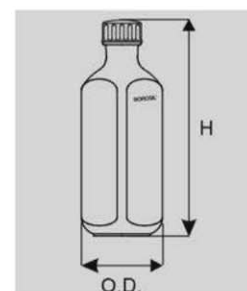
Product Code	Capacity ml	Approx b x w x h mm	Approx Neck I. D. mm	Quantity Per Case
1290029	1000	126 x 56 x 265	26	20

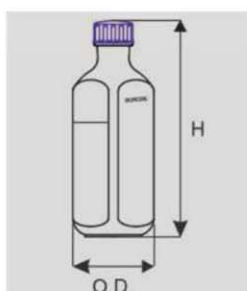


1367 - Bottles, Milk Dilution, Plain, With Screw Cap & Liner

- The screw caps and liner can withstand repeated autoclaving
- These glass bottles meet the requirements for Milk Dilution Bottles stated in the Standard Methods for the Examination of Dairy Products
- Square in shape

Product Code	Capacity ml	Approx O.D. x Height mm	Approx Neck I. D. mm	Quantity Per Case
1367019	160	150	19	10



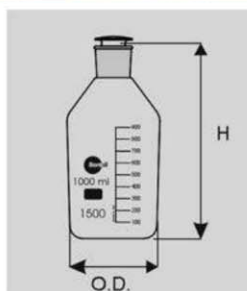


1370 - Bottles, Milk Dilution, Graduated, Screw Cap & Liner

- The screw caps and liner can withstand repeated autoclaving
- These glass bottles meet the requirements for Milk Dilution Bottles stated in the Standard Methods for the Examination of Dairy Products
- Square in shape

Product Code	Capacity ml	Approx O.D. x Height mm	Approx Neck I. D. mm	Quantity Per Case
1370019	160	150	19	10

Similar to No. 1367 but with a graduation mark at 99 ml capacity



1500 - Bottles Reagent , Plain Narrow Mouth, Graduated with Interchangeable Flat Head Stopper

- Complies with IS 1388 (Part II), ISO / DIN 4796 (Part II)
- These narrow mouth reagent storage bottles have a sturdy ground neck
- All sizes have a durable matt-finished enamelled area for marking
- These bottles are mechanically strong and chemical resistant
- Supplied with solid glass stopper

Product Code	Capacity ml	Approx O.D. x Height* mm	Approx Neck I. D. mm	Quantity Per Case
1500013	60	45 x 90	14 / 23	40
1500016	100	56 x 100	19 / 26	10
1500017	125	55 x 120	19 / 26	50
1500021	250	70 x 145	19 / 26	10
1500024	500	86 x 177	24 / 29	10
1500029	1000	101 x 225	29 / 32	10
1500030	2000	136 x 260	34 / 35	10

*Height indicated is of Bottle only



Borosil Reagent Bottle

Borosil Laboratory bottles are chemically resistant and stable. When fitted with a plastic pouring ring dripping can be totally eliminated. As there is only one size of screw thread for all bottles from 100 ml onwards, the screw caps and pouring rings are fully interchangeable. The bottles, pouring rings and caps are autoclavable and sterilizable.

Properties:

Light protection :

- Amber bottle upto 500 nm

Safe closure ensures storage of products as

- Dairy products
- Serums are kept sterile

High resistance to thermal shock

HANDLING :

Sterilization :

Bottles can be steam sterilized after washing. Following are recommendation and guidelines.

- Soiled bottle must be clean first, otherwise microorganism cannot be effectively destroyed and chemicals adhering to surface can damage it as a result of high temperature involved.

- To avoid a buildup of pressure the screw cap should be left loose on the bottle neck (one turn maximum). It should not be closed tight as the pressure then cannot be balanced and consequent in pressure can result in bottle bursting.

- Ensure that saturated steam is used and that it has unhindered access to all contaminated places. This is the only way to achieve effective steam sterilization.

Thawing frozen substances :

The frozen material can be thawed by immersing the bottle in liquid bath taking care that the temperature differences does not exceed 100 degree C. this will ensure that the frozen material heated uniformly from all sides without damaging the bottle. It can however also be thawed slowly so that the surface melts first, allowing the material to expand.

Freezing substances

Recommendation: When freezing, always place the bottles at an angle approx. 45°C and do not fill to more than ¾ capacity (to increase surface area). Temperature limit - 40°C as the plastic caps and pouring ring do not withstand lower temperatures.

1501 - Bottles, Reagent, Wide Mouth, Graduated With Screw Cap And Pouring Ring

- Complies with IS 1388 (Part I), ISO / DIN 4796 (Part I)
- These bottles are mechanically strong and chemical resistant
- Designed with plastic pouring ring for drip-free operation
- The screw caps and pouring ring are made of PP
- The bottles, screw caps and pouring rings can be sterilized and autoclavable
- Printed with a Retrace Code
- 100 ml to 20000 ml Bottles have uniform GL 45 thread

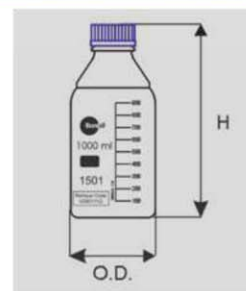
Product Code	Capacity ml	Approx O.D. x Height* mm	Approx Neck I. D. mm	Quantity Per Case
1501009	25 [#]	36 x 70	GL 25	20
1501012	50 [#]	46 x 87	GL 32	20
1501016	100	56 x 100	GL 45	10
NEW 1501018	150 ^{**}	60 x 120	GL 45	10
1501021	250	70 x 138	GL 45	10
1501024	500	86 x 176	GL 45	10
1501029	1000	101 x 225	GL 45	10
1501030	2000	136 x 260	GL 45	10
1501031	3000 ^{**}	158 x 295	GL 45	2
1501033	5000 ^{***}	183 x 323	GL 45	2
1501038	10000 ^{***}	235 x 405	GL 45	1
1501040	20000 ^{***}	296 x 500	GL 45	1

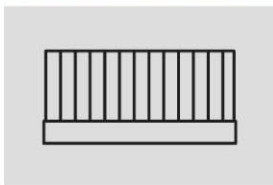
*Height indicated is of Bottle only

Without Pouring rings

**Not covered in any standard

***As per BOROSIL dimensions

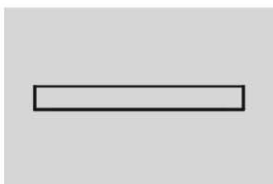




1503 - Screw Cap, with Pouring ring for Screw Cap Bottles

- Caps and pouring rings are made of PP (Polypropylene) and are autoclavable upto 140°C

Product Code	Colour Description	Neck Specification	Quantity Per Case
1503C01	Blue	GL 45	10
1503C02	Orange	GL 45	10
1503C03	Yellow	GL 45	10
1503C04	Green	GL 45	10
1503C05	Grey	GL 45	10



1504 - Pouring Ring, Blue Colour

- Pouring rings are made of PP (Polypropylene) and are autoclavable

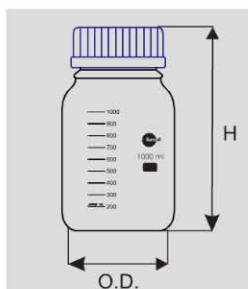
Product Code	Colour Specification	Neck Specification	Quantity Per Case
1504R01	Blue	GL - 45	10



1506 - Bottles Reagent, Square With DIN Thread, Graduated, With PP Screw Cap (GL 80) And PP Pouring Ring

Product Code	Capacity ml	Approx W x B x H mm	Neck Specification	Quantity Per Case
1506024	500	94 x 94 x 141	GL-80	10
1506029	1000	105 x 105 x 187	GL-80	10
1506030	2000	115 x 115 x 260	GL-80	10
1506033	5000	160 x 160 x 357	GL-80	1

Amber colour bottles are available on request.



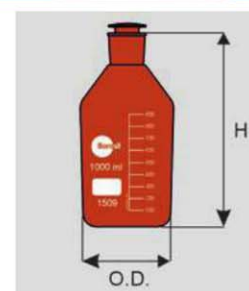


1509 - Bottles, Reagent, Amber, Narrow Mouth, Graduated, With Interchangeable Flat Head Stopper

- Complies with IS 1388 (Part II), ISO / DIN 4796 (Part II)
- These narrow mouth reagent storage bottles have a sturdy ground neck
- All sizes have a durable matt-finished enamelled area for marking
- These bottles are mechanically strong and chemical resistant
- The uniform Amber colour is highly durable and has high chemical resistance
- Properties within the bottle remain unchanged, as the colour is applied only on the external surface
- Protects media from light radiation with a wave-length between 300 nm and 500 nm
- Ideal for use with light-sensitive media and for the long-term storage of substances
- Supplied with solid glass stopper

Product Code	Capacity ml	Approx O.D. x Height* mm	Size Interchangeable Stopper	Quantity Per Case
1509013	60	45 x 90	14 / 23	20
1509016	100	56 x 100	19 / 26	10
1509017	125	55 x 120	19 / 26	20
1509021	250	70 x 145	19 / 26	10
1509024	500	86 x 177	24 / 29	10
1509029	1000	101 x 225	29 / 32	5
1509030	2000	136 x 260	34 / 35	5

*Height indicated is of Bottle only
Similar in design to cat no. 1500



1519 - Bottles, Reagent, Amber, Wide Mouth, Graduated, With Screw Cap And Pouring Ring

- Complies with IS 1388 (Part I), ISO / DIN 4796 (Part I)
- These bottles are mechanically strong and chemical resistant
- Designed with plastic pouring ring for drip-free operation
- The screw caps and pouring are made of PP and autoclavable
- Printed with a Retrace Code
- The uniform Amber colour is highly durable and has high chemical resistance
- Properties within the bottle remain unchanged, as the colour is applied only on the external surface
- Ideal for use with light-sensitive media and for long-term storage of substances
- 100 ml to 20000 ml have uniform GL 45 thread

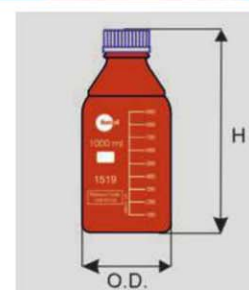
Product Code	Capacity ml	Approx O.D. x Height* mm	Neck Specification	Quantity Per Case
1519009	25 [#]	36 x 70	GL 25	20
1519012	50 [#]	46 x 87	GL 32	20
1519016	100	56 x 100	GL 45	10
1519021	250	70 x 138	GL 45	10
1519024	500	86 x 176	GL 45	10
1519029	1000	101 x 225	GL 45	10
1519030	2000	136 x 260	GL 45	10
1519031	3000 ^{**}	158 x 295	GL 45	2
1519033	5000 ^{***}	183 x 323	GL 45	2
1519038	10000 ^{***}	235 x 405	GL 45	1
1519040	20000 ^{***}	299 x 500	GL 45	1

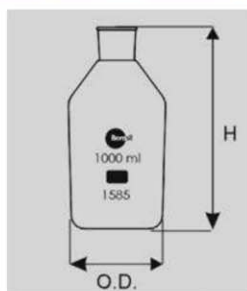
*Height indicated is of Bottle only

[#] Without Pouring rings

^{**}Not covered in any standard

^{***}As per BOROSIL dimensions

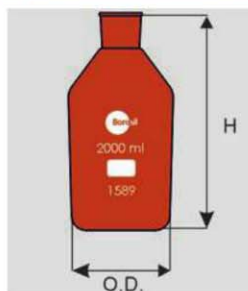




1585 - Bottles, Solution, Plain, Tooled Neck

- These bottles are mechanically strong and chemical resistant
- 10, 20 & 50 litre bottles specially designed for handling and storing culture media
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Approx O.D. x Height mm	Size Interchangeable Stopper	Quantity Per Case
1585021	250	70 x 140	18	20
1585024	500	86 x 177	23	20
1585029	1000	101 x 225	28	10
1585030	2000	136 x 260	33	10
1585031	3000	158 x 260	44	4
1585033	5000	183 x 320	44	2
1585038	10000	235 x 430	54	1
1585040	20000	299 x 530	54	1
1585046	50000	417 x 665	89	1



1589 - Bottles, Solution, Amber, Tooled Neck

- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking
- The uniform Amber colour is highly durable and has high chemical resistance
- Properties within the bottle remain unchanged, as the colour is applied only on the external surface
- Protects media from light radiation with a wave-length between 300 nm and 500nm
- Ideal for use with light-sensitive media and for long-term storage of substances

Product Code	Capacity ml	Approx O.D. x Height mm	Approx Neck I. D. mm	Quantity Per Case
1589021	250	70 x 140	18	10
1589024	500	86 x 177	23	20
1589029	1000	101 x 225	28	5
1589030	2000	136 x 260	33	5

Similar in design to Cat No. 1585

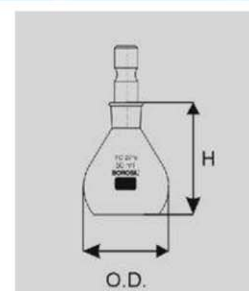
For Higher Capacities please contact our Sales Offices & our Authorised Dealers



1624 - Bottles, Relative Density, With Capillary Bore Interchangeable Teflon Stopper

- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking
- Come with a Works Certificate

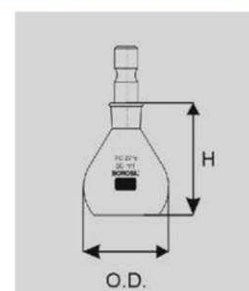
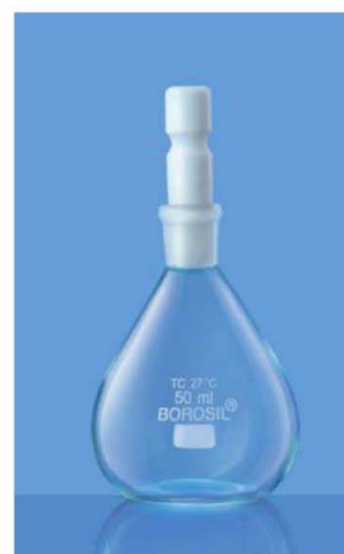
Product Code	Capacity ml	Capacity Tolerance +ml	Max. Body Dia x Height mm	Size of Inter-Changeable Stopper	Quantity Per Case
1624006	10	0.3	28 x 46	10 / 15	5
1624009	25	0.8	38 x 55	10 / 15	5
1624012	50	1.0	49 x 65	10 / 15	5

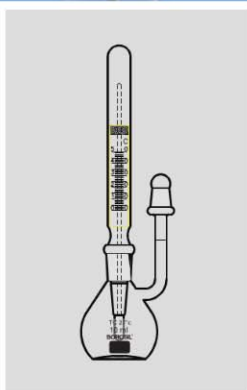


1625 - Bottles Relative density, with Capillary bore Interchangeable Teflon stopper

- Complies with IS 5711, ISO / DIN 3507
- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Capacity Tolerance +ml	Max. Body Dia x Height mm	Size of Inter-Changeable Stopper	Quantity Per Case
1625006	10	1	28 x 46	10 / 15	10
1625009	25	2	38 x 55	10 / 15	10
1625012	50	3	49 x 65	10 / 15	5



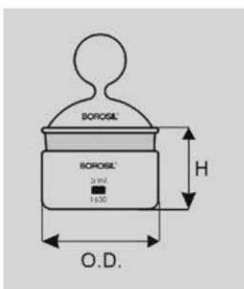


1627 - Bottles Specific , Gravity Bottle with thermometer(Pyknometer)

- Complies with IS 5717, ISO / DIN 3507
- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking
- Supplied with thermometer (10°C to 30°C) alongwith certificate for thermometer

Product Code	Capacity ml	Quantity Per Case
1627006	10	5
1627009	25	5
1627012	50	5

Suitable for determining the density with built in thermometer & thermometer pocket.



1630 - Bottles, Weighing, With Interchangeable Stopper

- Complies with IS 1574
- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Approx O.D. x Height* mm	Quantity Per Case
1630005	5	20 x 40	30
1630007	15	25 x 65	10
1630008	20**	50 x 35	10
1630009	25	30 x 65	10
1630011	40**	60 x 40	10
1630013	60	40 x 90	5

*Height indicated is of Bottle only

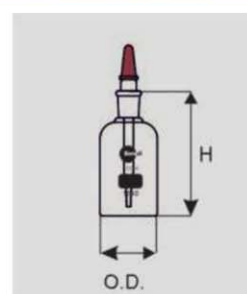
**Squat Form



1640 - Bottles, Dropping With Pipette & Rubber Teat

- Made from 3.3 borosilicate glass
- Highly chemical resistance
- Supplied with interchangeable ground joint transparent pipette with rubber teat

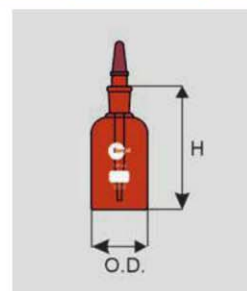
Product Code	Capacity ml	Approx O.D. x Height mm	Socket Size	Quantity Per Case
1640010	30	35 x 84	14 / 19	10
1640013	60	42 x 100	14 / 19	10
1640017	125	55 x 120	19 / 26	10
1640021	250	65 x 147	19 / 26	10

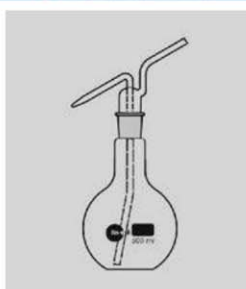


1650 - Bottles, Dropping with Pipette & Rubber Teat, Amber

- Made from 3.3 borosilicate glass
- Highly chemical resistance
- Supplied with interchangeable ground joint transparent pipette with rubber teat
- Ideal for light sensitive material

Product Code	Capacity ml	Approx O.D. x Height mm	Socket Size	Quantity Per Case
1650010	30	35 x 84	14 / 19	10
1650013	60	42 x 100	14 / 19	10
1650017	125	55 x 120	19 / 26	10
1650021	250	65 x 147	19 / 26	10

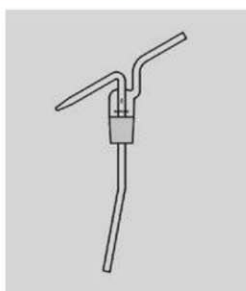




1660 - Bottles, Wash, Complete With Interchangeable Stopper

- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Size of Inter-changeable Stopper	Quantity Per Case Set
1660021	250	24 / 29	5
1660024	500	24 / 29	5
1660029	1000	29 / 32	5



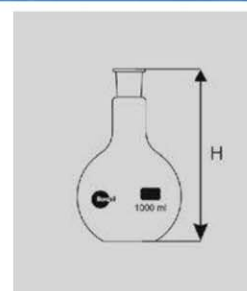
1661 - Stoppers, Only For Wash Bottles Cat. No. 1660

Product Code	Capacity ml	Size of Inter-changeable Stopper	Quantity Per Case Set
1661021	250	24 / 29	5
1661024	500	24 / 29	5
1661029	1000	29 / 32	5



1662 - Bottles, Only for Wash Bottles Cat No. 1660

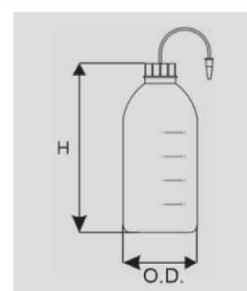
Product Code	Capacity ml	Approx Height mm	Size Interchangeable Stopper	Quantity Per Case
1662021	250	130	24 / 29	5
1662024	500	165	24 / 29	5
1662029	1000	190	29 / 32	5

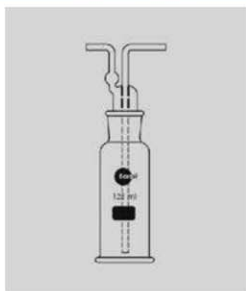


166P - Bottles, Wash, LDPE Plastic, Squeeze type, Screw Cap, Fitted With Stoppers And Delivery Tubes

- Bottles and delivery tube made of chemically resistant, low density polyethylene
- Flexible, tough, light weight, and practically unbreakable in use
- Squeezing the bottle produces a steady controllable stream or a few drops.
- Delivery tubes are mounted in polypropylene screw caps
- Tips on delivery tubes are removable

Product Code	Capacity ml	Approx Diameter mm	Bottle Height mm	Quantity Per Case
0166024	500	75	167	36





1760 - Bottles, Gas Washing (Dreschel), Complete with interchangeable Stopper

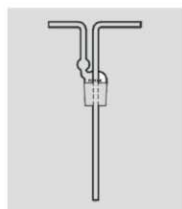
- Complies with IS 11990
- These bottles are mechanically strong and chemical resistant
- All sizes have a durable matt-finished enamelled area for marking

Product Code	Capacity ml	Size of Inter-changeable Stopper	Quantity Per Case Set
1760017	125	24 / 29	5
1760021	250	24 / 29	5
1760024	500	24 / 29	5



1761 - Stoppers, Only For Gas Washing Bottles

Product Code	Capacity ml	Quantity Per Case
1761017	125	5
1761021	250	5
1761024	500	5



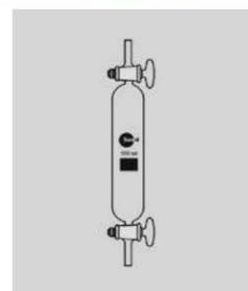
1762 - Bottles, Only For Gas Washing Bottles

Product Code	Capacity ml	Approx O. D. x Height mm	Quantity Per Case Set
1762017	125	50 x 155	5
1762021	250	60 x 190	5
1762024	500	70 x 245	5



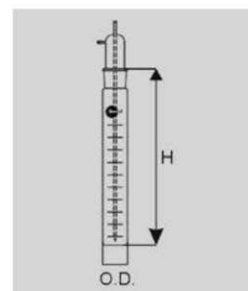
**1764 - Tubes, Gas Sampling, With Stopcocks**

Product Code	Capacity ml	Quantity Per Case
1764017	125	10
1764021	250	10
1764024	500	10

**1765 - Impinger**

- Complies with IS 5182 (Part-VI)
- These bottles are mechanically strong and chemical resistant

Product Code	Capacity ml	Approx O. D. x Height mm	Quantity Per Case Set
1765058	35	26 x 180	10



Burettes

- Manufactured from 3.3 Low Expansion Borosilicate precision bore tubing
- Individually calibrated on automatic calibration machine for precision and high accuracy
- Graduation and inscriptions are printed with white enamel for increased visibility with dark solutions
- Choice of PTFE stopcock, Boroflo stopcock and Straight Bore Glass Stopcock
- Amber and blue enamel printed Burette can be supplied on request
- Compliance with highest quality standards according to **ISO/DIN 385**



Accuracy, reliability and durability are the essentials of a Burette. Only Borosil brand Burettes offer you these three benefits even after repeated usage, as they are made with a combination of the best material and workmanship. The highest quality precision bore tubing is selected to provide uniform and accurate graduations. Each Burette is individually calibrated on a fully automatic machine for precision and high accuracy. All graduations are marked in durable white enamel. The stopcock plugs are not interchangeable.

Boroflo Burettes fitted with Boroflo GP (General Purpose) screw thread stopcocks with PTFE keys offer the following operational advantages:

- Lubrication is never required, ensuring no seizure and no contaminating greases
- Excellent flow control that is important for Burettes
- The unique Fluon/glass seal ensures no leakage
- No springs or retaining devices makes it easy to dismantle and clean them
- Absence of ground surfaces results in low absorption of radioactivity
- Consistent performance between 0°C and 50°C

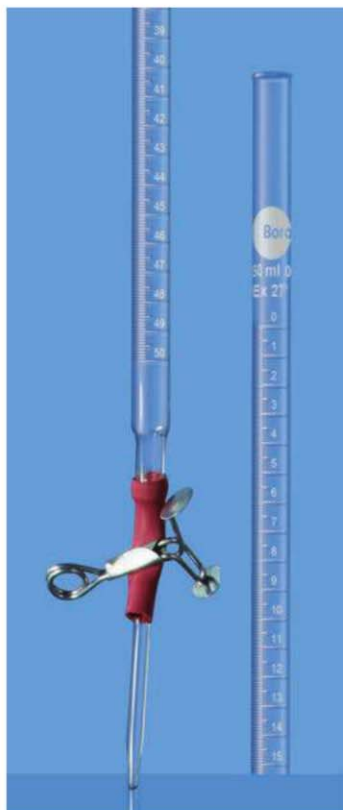
Borosil offers Class A Burettes for accurate work



- Boroflo stopcocks have PTFE keys which do not require greasing
- This PTFE keys provide best drop control during titration process
- Due to unique needle shape of PTFE key, valve can be closed with gentle turn

- PTFE stopcocks have identical keys, hence matching the pairs is not require during cleaning
- PTFE is self lubricating hence keys do not require greasing

- Specially designed solid glass stopcocks are manufactured from 3.3 Low expansion borosilicate glass
- Glass stopcocks are perfectly grind, hence no leakage occur



2118 - Burettes, Pinchcock with Tip, Accuracy As Per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- The volume content tolerances conform to Class B of ISO
- Supplied without Pinchcock and rubber tube

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2118006	10	0.05	0.05	10
2118009	25	0.1	0.1	10
2118012	50	0.1	0.1	20



* Blue and Amber graduations can be supplied on request.

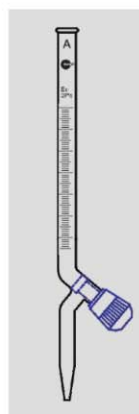
2121 - Burettes, Boroflo, Fitted With Boroflo GP (General Purpose), Screw Thread Stopcocks With PTFE Keys, Accuracy As Per Class A, With Batch Certificate

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- Supplied with Boroflo stopcock with PTFE key that is highly resistant to chemical attack
- Individually tested for exact volume dispensed at 3 points on the scale
- No need to lubricate it as PTFE key is used

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2121006D	10	0.05	0.02	5
2121009D	25	0.1	0.05	5
2121012D	50	0.1	0.05	10
2121016D	100	0.2	0.1	5

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2122 - Burettes, Boroflo, Fitted With Boroflo GP (General Purpose), Screw Thread Stopcocks With PTFE Keys, Accuracy As per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Supplied with Boroflo with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used
- Easy to dismantle and clean

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2122006D	10	0.05	0.05	10
2122009D	25	0.1	0.1	10
2122012D	50	0.1	0.1	10
2122016D	100	0.2	0.2	5

* Blue and Amber graduations can be supplied on request.





2123 - Burettes, Straight Bore Stopcock, Accuracy As Per Class A, With Batch Certificate

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- Designed with straight bore stopcock that increases the life, compared to PTFE key stopcocks
- The glass stopcock enhances control and enables smoother action

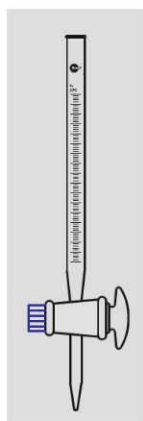
Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2123001D	1*	0.01	0.006	5
2123002D	+2*	0.02	0.01	5
2123005D	5*	0.02	0.01	5
2123006D	10	0.05	0.02	5
2123009D	25	0.1	0.05	5
2123012D	50	0.1	0.05	5
2123016D	100	0.2	0.1	5

+ not covered in IS

* with cup top

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request





Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th



QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

www.cosmos-supply.com

2124 - Burettes, Straight Bore Stopcock, Accuracy as per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with straight bore stopcock that increases the life, compared to PTFE key stopcocks
- The glass stopcock enhances control and enables smoother action

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2124001D	1*	0.01	0.01	5
2124002D	2*	0.02	0.02	5
2124005D	5*	0.02	0.02	5
2124006D	10	0.05	0.05	10
2124009D	25	0.1	0.1	10
2124012D	50	0.1	0.1	10
2124016D	100	0.2	0.2	5

* with cup top

* Blue and Amber graduations can be supplied on request.

2125 - Burettes, Double Oblique Bore Stopcock, 3-Way, Accuracy As Per Class A, With Batch Certificate

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with double oblique bore stopcock
- Generally used in Titration process
- Individually tested for exact volume dispensed at 3 points on the scale
- Designed with a straight bore stopcock that increases the life, compared to PTFE key stopcocks
- The glass stopcock enhances control and enables smoother action

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2125006	10	0.05	0.02	5
2125009	25	0.1	0.05	5
2125012	50	0.1	0.05	5
2125016	100	0.2	0.1	5

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request

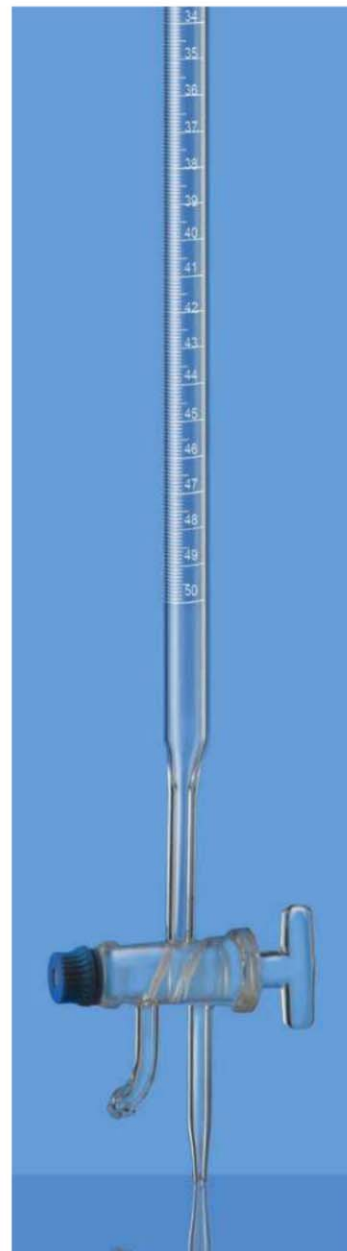


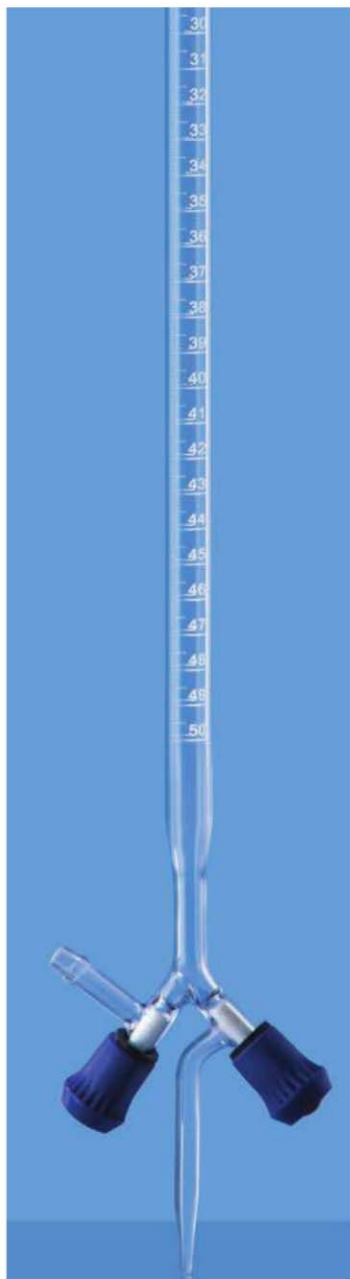
2126 - Burettes, Double Oblique Bore Stopcock, 3-Way, Accuracy As Per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with double oblique bore stopcock
- Generally used in Titration process
- Designed with a straight bore stopcock that increases the life, compared to PTFE key stopcocks
- The glass stopcock enhances control and enables smoother action
- The volume content tolerances conform to Class B of IS and ISO

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2126006	10	0.05	0.05	5
2126009	25	0.1	0.1	5
2126012	50	0.1	0.1	5
2126016	100	0.2	0.2	5

* Blue and Amber graduations can be supplied on request.





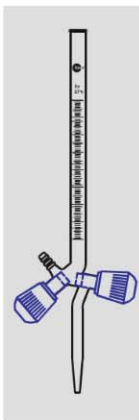
2127 - Burettes, Double Oblique Bore Boroflo Stopcock, 3-Way, Accuracy As Per Class A, With Batch Certificate

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with a double oblique bore Boroflo stopcock
- Generally used in Titration process
- Individually tested for exact volume dispensed at 3 points on the scale
- Comes with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2127006	10	0.05	0.02	5
2127009	25	0.1	0.05	5
2127012	50	0.1	0.05	5
2127016	100	0.2	0.1	5

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2128 - Burettes, Double Oblique Bore Boroflo Stopcock, 3-Way, Accuracy As Per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with a double oblique bore Boroflo stopcock
- Generally used in Titration process
- Comes with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2128006	10	0.05	0.05	5
2128009	25	0.1	0.10	5
2128012	50	0.1	0.10	5
2128016	100	0.2	0.2	5

* Blue and Amber graduations can be supplied on request.

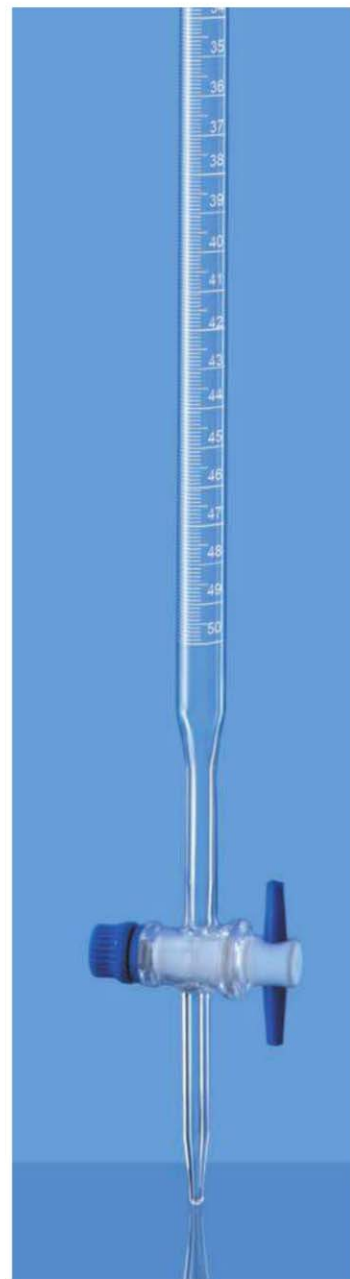
2129 - Burettes, Straight Bore PTFE Key Stopcock, Accuracy As Per Class A, With Batch Certificate

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- Individually tested for exact volume dispensed at 3 points on the scale
- Alpha numeric serial number on the article and certificate provide complete traceability the standards
- Comes with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2129006D	10	0.05	0.03	5
2129009D	25	0.1	0.05	5
2129012D	50	0.1	0.05	10
2129016D	100	0.2	0.1	5

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2130 - Burettes, Straight Bore PTFE Key Stopcock, Accuracy As Per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- Comes with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2130006D	10	0.05	0.05	10
2130009D	25	0.1	0.1	10
2130012D	50	0.1	0.1	10
2130016D	100	0.2	0.2	5

* Blue and Amber graduations can be supplied on request.



2131 - Burettes, Boroflo, Fitted With Boroflo GP (General Purpose), Screw Thread Stopcocks With PTFE Keys, Accuracy As Per Class A, With Batch Certificate, Amber

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- Individually tested for exact volume dispensed at 3 points on the scale
- Supplied with Boroflo with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used
- Easy to dismantle and clean
- Amber colour is applied to the external surface to prevent contamination with the testing material

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2131009D	25	0.1	0.05	5
2131012D	50	0.1	0.05	5



2132 - Burettes, Boroflo, Fitted With Boroflo GP (General Purpose), Screw Thread Stopcocks With PTFE Keys, Accuracy As Per Class B, Amber

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Generally used in Titration process
- Comes with Boroflo with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used
- The volume content tolerances conform to Class B of IS and ISO
- Amber colour is applied to the external surface to prevent contamination with the testing material

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2132009	25	0.1	0.1	5
2132012	50	0.1	0.1	5



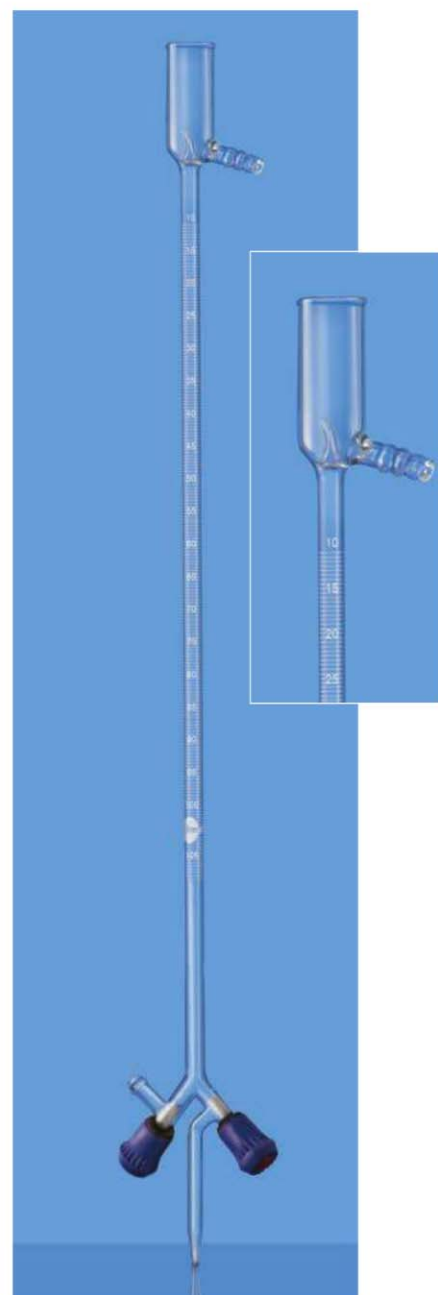
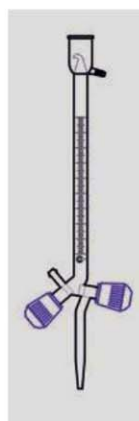
2145 - Burettes, Double Oblique Bore Boroflo Stopcock, 3-Way, Automatic Zero, Accuracy As per Class A, With Batch Certificate

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Comes with double oblique bore Boroflo stopcock
- Generally used in Titration process
- Individually tested for exact volume dispensed at 3 points on the scale
- Comes with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used
- Meniscus is automatically set to Zero

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2145006	10	0.05	0.02	1
2145009	25	0.1	0.05	1
2145012	50	0.1	0.05	1

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided upon request



2146 - Burettes, Double Oblique Bore Boroflo Stopcock, 3-Way, Automatic Zero, Accuracy As Per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with double oblique bore Boroflo stopcock
- Generally used in Titration process
- Comes with PTFE key that is highly resistant to chemical attack
- No need to lubricate it as PTFE key is used
- Meniscus is automatically set to Zero

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2146006	10	0.05	0.05	1
2146009	25	0.1	0.1	1
2146012	50	0.1	0.1	1

* Blue and Amber graduations can be supplied on request.

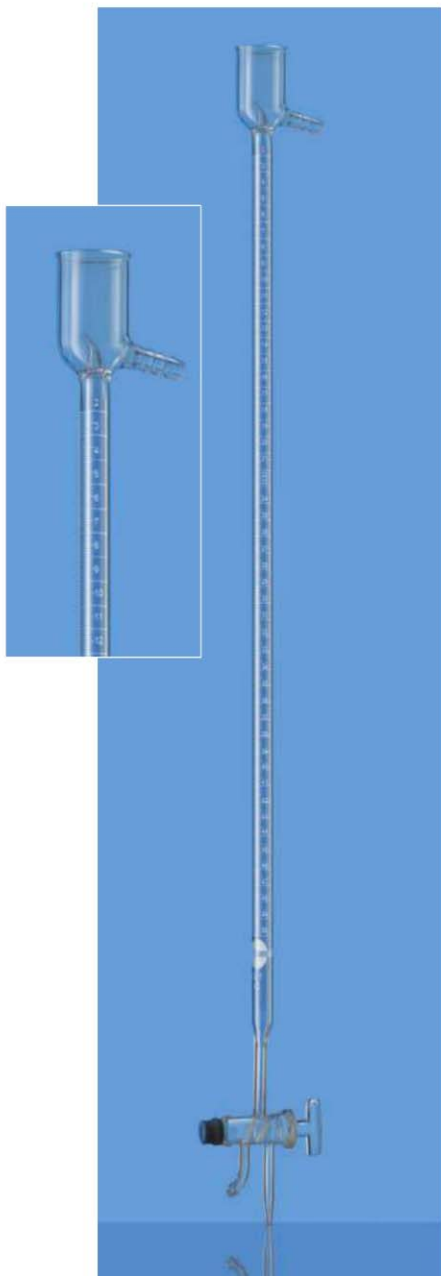
2147 - Burettes, Double Oblique Bore Glass Stopcock, 3-Way, Automatic Zero, Accuracy As Per Class A, With Batch Certificate

- Complies with IS ISO / DIN 385
- Calibrated at 20°C
- Designed with double oblique bore stopcock
- Generally used in Titration process
- Individually tested for exact volume dispensed at 3 points on the scale
- Designed with a straight bore stopcock that increases the life, compared to PTFE key stopcocks
- The glass stopcock enhances control and enables smoother action
- Meniscus is automatically set to Zero

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2147006	10	0.05	0.02	1
2147009	25	0.1	0.05	1
2147012	50	0.1	0.05	1

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2148 - Burettes, Double Oblique Bore Glass Stopcock, 3-Way, Automatic Zero, Accuracy As Per Class B

- Complies with ISO / DIN 385
- Calibrated at 20°C
- Designed with double oblique bore stopcock
- Generally used in Titration process
- Designed with a straight bore stopcock that increases the life, compared to PTFE key stopcocks
- The glass stopcock enhances control and enables smoother action
- Meniscus is automatically set to Zero

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2148006	10	0.05	0.05	1
2148009	25	0.1	0.1	1
2148012	50	0.1	0.1	1

* Blue and Amber graduations can be supplied on request.



2149 - Burettes, Automatic Zero, Accuracy as per Class A, With Reservoir, Rubber Bellow, Glass Stopcock, With Batch Certificate

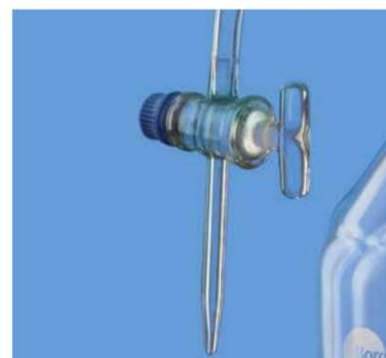
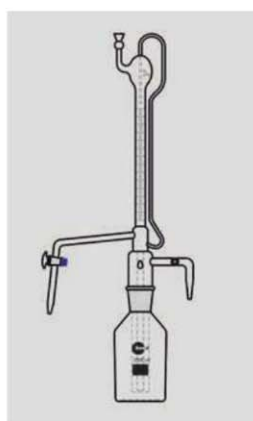
- Complies with ISO / DIN 385
- Calibrated at 20°C
- With automatic zero facility
- Individually tested for exact volume dispensed at 3 points on the scale
- Simple operation
 - To fill burette apply a slight positive pressure to lower side arm
 - To set zero, release pressure to allow excess liquid to siphon back into the bottle
- Burettes manufactured from chemically resistant 3.3 borosilicate glass
- White enamel graduations
- With Glass stopcock

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2149006	10	0.05	0.02	1
2149009	25	0.1	0.05	1
2149012	50	0.1	0.05	1
2149016	100	0.2	0.1	1

Reservoir Capacity : 500 ml for 10 ml size and 2000 ml for 25, 50 and 100 ml sizes

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2150 - Burettes, Automatic Zero, Accuracy as per Class B, With Reservoir, Rubber Bellow And Glass Stopcock

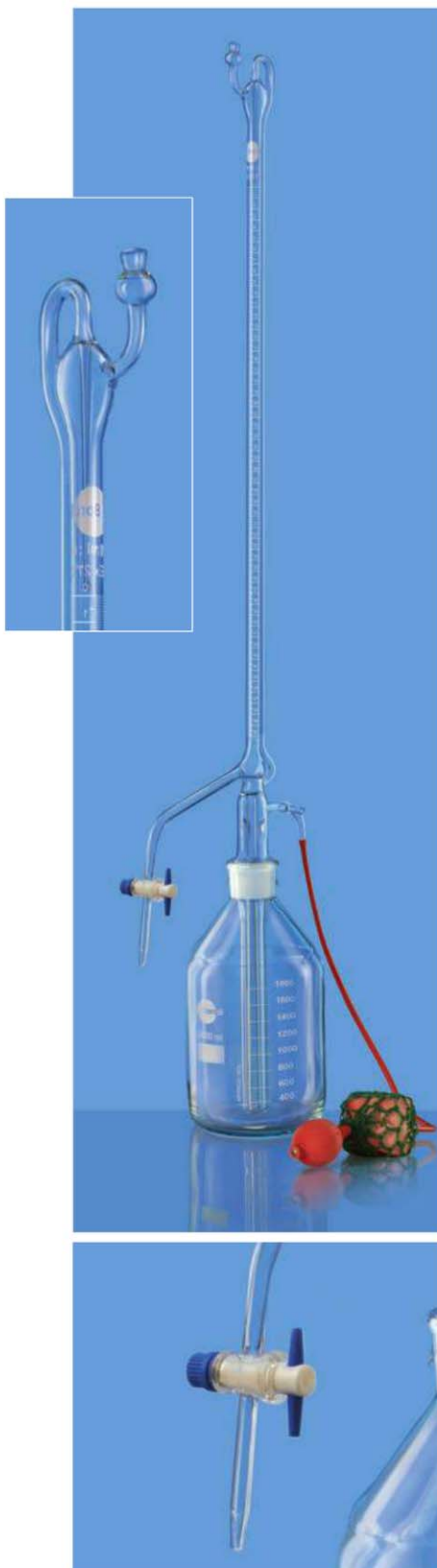
- Complies with ISO / DIN 385
- Calibrated at 20°C
- With automatic zero facility
- Simple operation
 - To fill burette apply a slight positive pressure to lower side arm
 - To set zero, release pressure to allow excess liquid to siphon back into the bottle
- Burettes manufactured from chemically resistant 3.3 borosilicate glass
- White enamel graduations
- With Glass stopcock

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2150006	10	0.05	0.05	1
2150009	25	0.1	0.1	1
2150012	50	0.1	0.1	1
2150016	100	0.2	0.2	1

Reservoir Capacity : 500 ml for 10 ml size and 2000 ml for 25, 50 and 100 ml sizes

* Blue and Amber graduations can be supplied on request.

Auto Burettes in Amber Colour are available on request



2153 - Burettes, Automatic Zero, Accuracy as per Class A, With Reservoir, Rubber Bellow, PTFE Stopcock, With Batch Certificate

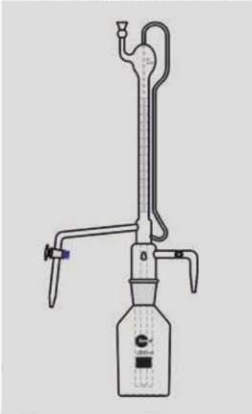
- Complies with ISO / DIN 385
- Calibrated at 20°C
- With automatic zero facility
- Individually tested for exact volume dispensed at 3 points on the scale
- Simple operation
 - To fill burette apply a slight positive pressure to lower side arm
 - To set zero, release pressure to allow excess liquid to siphon back into the bottle
- Burettes manufactured from chemically resistant 3.3 borosilicate glass
- White enamel graduations
- With PTFE stopcock

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2153006	10	0.05	0.02	1
2153009	25	0.1	0.05	1
2153012	50	0.1	0.05	1
2153016	100	0.2	0.10	1

Reservoir Capacity : 500 ml for 10 ml size and 2000 ml for 25, 50 and 100 ml sizes

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2154 - Burettes, Automatic Zero, Accuracy as per Class B, With Reservoir, Rubber Bellow, PTFE Stopcock

- Complies with ISO / DIN 385
- Calibrated at 20°C
- With automatic zero facility
- Simple operation
 - To fill burette apply a slight positive pressure to lower side arm
 - To set zero, release pressure to allow excess liquid to siphon back into the bottle
- Burettes manufactured from chemically resistant 3.3 borosilicate glass
- White enamel graduations
- With PTFE stopcock

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2154006	10	0.05	0.05	1
2154009	25	0.1	0.1	1
2154012	50	0.1	0.1	1
2154016	100	0.2	0.2	1

Reservoir Capacity : 500 ml for 10 ml size and 2000 ml for 25, 50 and 100 ml sizes

* Blue and Amber graduations can be supplied on request.

Auto Burettes in Amber Colour are available on request

2155 - Burettes, Automatic Zero, Accuracy as per Class A, With Reservoir, Rubber Bellow And Boroflo Stopcock With Batch Certificate

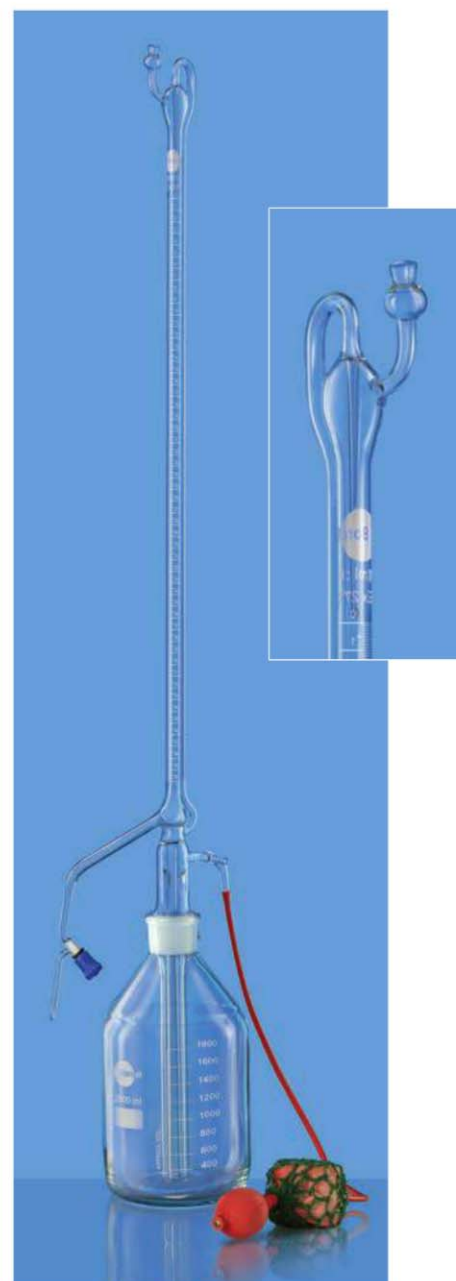
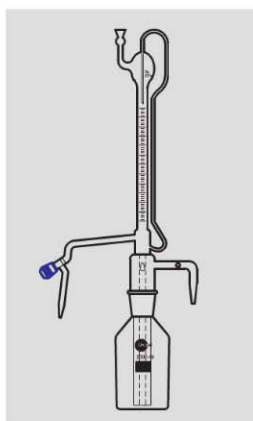
- Complies with ISO / DIN 385
- Calibrated at 20°C
- With automatic zero facility
- Individually tested for exact volume dispensed at 3 points on the scale
- Simple operation
 - To fill burette apply a slight positive pressure to lower side arm
 - To set zero, release pressure to allow excess liquid to siphon back into the bottle
- Burettes manufactured from chemically resistant 3.3 borosilicate glass
- White enamel graduations
- With Boroflo stopcock

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2155006	10	0.05	0.02	1
2155009	25	0.1	0.05	1
2155012	50	0.1	0.05	1
2155016	100	0.2	0.10	1

Reservoir Capacity : 500 ml for 10 ml size and 2000 ml for 25, 50 and 100 ml sizes

* Blue and Amber graduations can be supplied on request.

* Individual calibration certificate can be provided on request



2156 - Burettes, Automatic Zero, Accuracy as per Class B, With Reservoir, Rubber Bellow, Boroflo Stopcock

- Complies with ISO / DIN 385
- Calibrated at 20°C
- With automatic zero facility
- Simple operation
 - To fill burette apply a slight positive pressure to lower side arm
 - To set zero, release pressure to allow excess liquid to siphon back into the bottle
- Burettes manufactured from chemically resistant 3.3 borosilicate glass
- White enamel graduations
- With Boroflo stopcock

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
2156006	10	0.05	0.05	1
2156009	25	0.1	0.1	1
2156012	50	0.1	0.1	1
2156016	100	0.2	0.2	1

Reservoir Capacity : 500 ml for 10 ml size and 2000 ml for 25, 50 and 100 ml sizes

* Blue and Amber graduations can be supplied on request.

Auto Burettes in **Amber** Colour are available on request

Cones

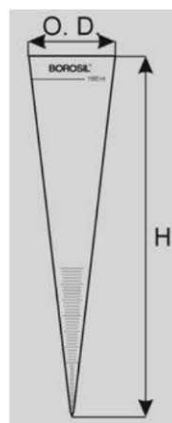
Cones are used to determine small amounts of suspended matter in sewage by the Imhoff Sedimentation Method.



2160 - Cones, Imhoff, Sediment, Sharp Tip

- Complies with IS 7232
- Graduated from 0 to 1 ml in 0.1 ml divisions
- Graduated from 1 to 10 ml in 0.5 ml divisions
- 10 to 40 ml in 1 ml divisions also marked at 1000 ml
- Facilitates the determination of the amount of sediment in sewage or industrial waste

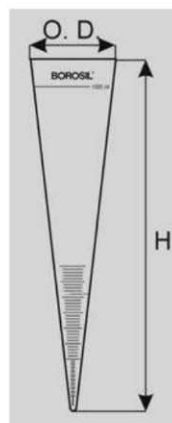
Product Code	Approx Total Height mm	Approx Top Diameter mm	Quantity Per Case
2160094	454	110	1



2180 - Cones, Imhoff, Sediment, Blunt Tip

- Complies with IS 7232
- The blunt tip increases its ruggedness and cleaning ease
- Ideal for use with heavy sediments where the ability to read small volumes is unimportant
- Facilitates the determination of the amount of sediment in sewage or industrial waste

Product Code	Approx Total Height mm	Approx Top Diameter mm	Quantity Per Case
2180093	439	110	1



Condensers

A Condenser is designed to facilitate the cooling of hot vapours and liquids. It is structured in the form of a large glass tube, containing a smaller glass tube running through its entire length. Hot fluids pass through this small inner tube.

Typically, the outer glass tube has two hose connections to aid the passing of a coolant (usually tap water or chilled water/anti-freeze mixture). The coolant is introduced through the lower fitting, while the higher fitting serves as the exit point. Entering the coolant at the cooler point is a critical aspect as it helps maintain a smooth and correctly directed thermal gradient. This in turn, maximises efficiency and minimises the risk of thermal shock to adjacent glassware. Multiple Condensers may be connected in a series. Usually, a high flow rate is not essential for maintaining a cooling surface.

Special care should be taken while choosing Condensers keeping in mind their distillation rates, reflux rates and temperature gradients.

Borosil offers you the choice of a wide range of Condensers.

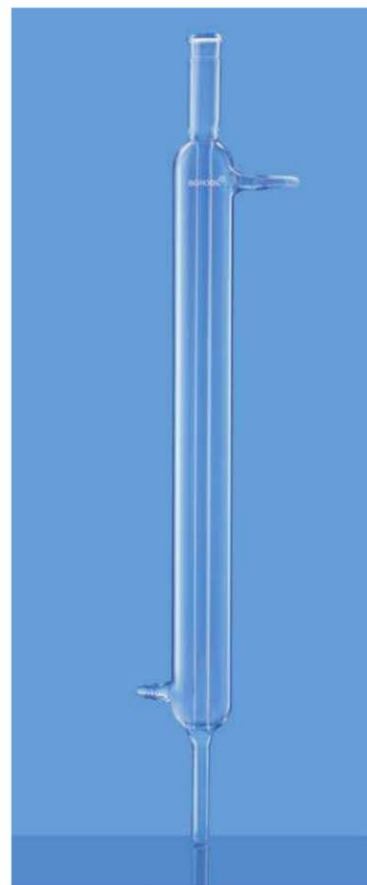
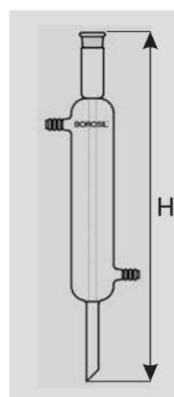




2340 - Condensers, Liebig, With Sealed Inner Tube

- Simple design
- The light wall of the inner tube facilitates efficient heat transfer
- Low cooling capacity
- Used for distillate separation

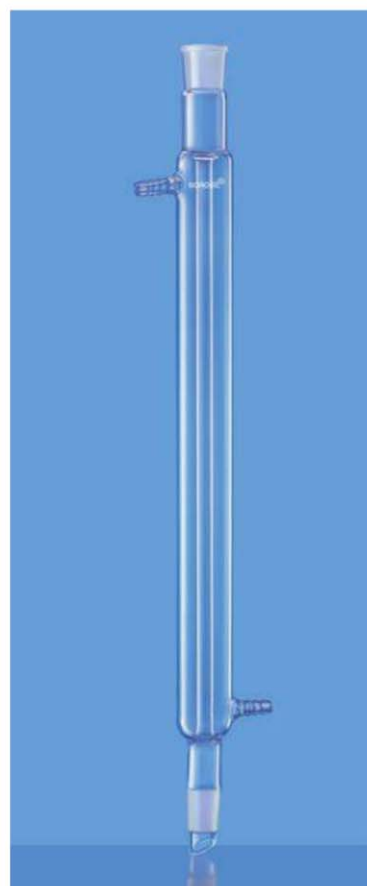
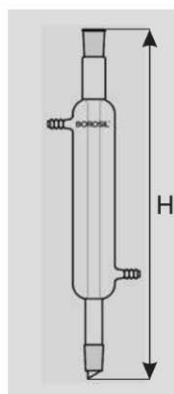
Product Code	Approx Jacket Length mm	Approx Overall Height mm	Interchangeable Joints	Quantity Per Case
2340087	200	350	19 / 15	5
2340090	300	450	19 / 15	5
2340092	400	550	19 / 15	5
2340095	500	660	19 / 15	5

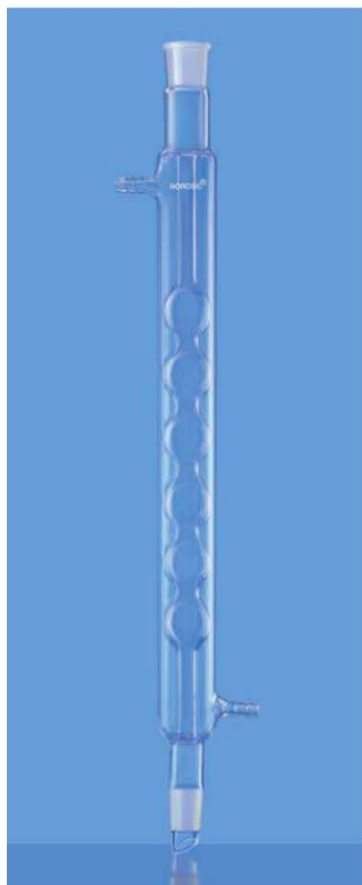


2400 - Condensers, Liebig, Drip Tip, Interchangeable Inner And Outer Joint

- Simple design
- The light wall of the inner tube facilitates efficient heat transfer
- Low cooling capacity
- Used for distillate separation

Product Code	Approx Jacket Length mm	Approx Overall Height mm	Interchangeable Joints		Quantity Per Case
			Inner	Outer	
2400087	200	355	19 / 26	19 / 26	5
2400090	300	445	24 / 29	24 / 29	5
2400092	400	550	24 / 29	24 / 29	5

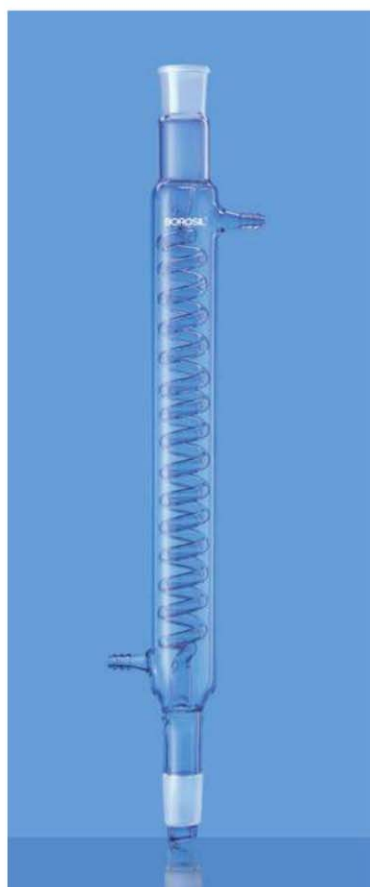
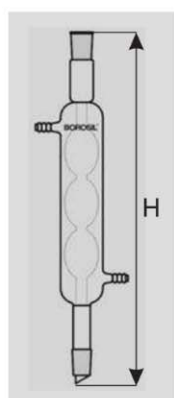




2480 - Condensers, Allihn, Drip Tip, Interchangeable Inner and Outer Joint

- Greater surface area than the Liebig Condenser owing to a series of bulbs, resulting in higher cooling capacity
- Ideal for laboratory scale refluxing

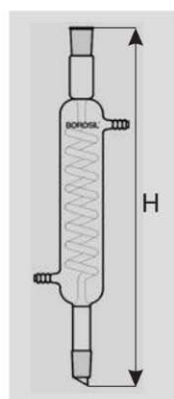
Product Code	Approx Jacket Length mm	Approx Overall Height mm	Interchangeable Joints		Quantity Per Case
			Inner	Outer	
2480087	200	355	19 / 26	19 / 26	5
2480090	300	445	24 / 29	24 / 29	5
2480092	400	550	24 / 29	24 / 29	5
2480096	600	740	29 / 32	29 / 32	5



2560 - Condensers, Graham, Coiled Distillate Type, Drip Tip, Interchangeable Inner and Outer Joint

- The coiled condensation tubes result in greater surface area for cooling
- Designed with top standard taper outer and lower inner drip tip joint

Product Code	Approx Jacket Length mm	Approx Overall Height mm	Interchangeable Joints		Quantity Per Case
			Inner	Outer	
2560090	300	450	24 / 29	24 / 29	5
2560092	400	550	24 / 29	24 / 29	5
2560095	500	650	24 / 29	24 / 29	5

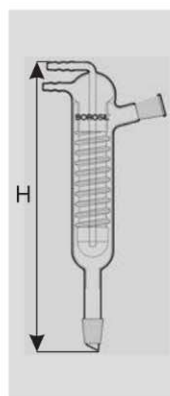




2640 - Condensers, Friedrichs, Drip Tip, Interchangeable Inner and Outer Joint

- Specially designed inner spiral tubes ensure a long vapour path
- Offer better heat transfer and anti-flooding capabilities

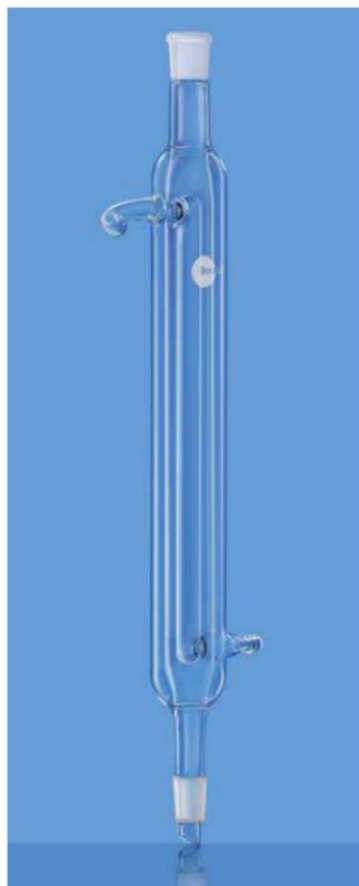
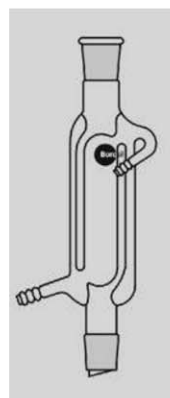
Product Code	Approx Overall Height mm	Interchangeable Joints		Quantity Per Case
		Inner	Outer	
2640097	350	24 / 29	24 / 29	5



2641 - Condensers, Double Surface

Product Code	Length of Height mm	Ground Joint	Quantity Per Case
2641087	200	19 / 26	5
2641187	200	24 / 29	5
2641090	300	19 / 26	5
2641190	300	24 / 29	5

The above condensers are widely used in research labs. A double-surface condenser has a water jacket both on the outside and through the centre of the condensing tube. It is needed where the condensed liquid is very volatile. Hence for distilling ethers, alcohols, esters, aromatics, petroleum products, and essential oils these condensers are widely used.



Cylinders

Measuring cylinders serve simultaneously to receive and measure different amounts of liquids. Made from specially drawn 3.3 Borosilicate glass tubing with durable, easy to read graduations for assured accuracy.

Borosil Brand Cylinders are built to last. We have built strength features into every cylinder. Heavy uniform wall tubing and strong stable hexagonal base contribute to sturdiness. Hexagonal base also prevents them from rolling off a laboratory bench. They are available in capacities from 5 ml to 2000 ml.

For accurate work, Class A certified cylinders are available.

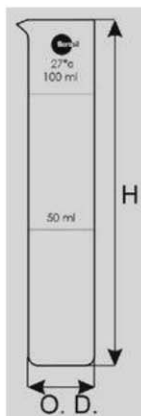
Our range also includes Nessler Colour Comparison and Rain Measure Cylinders.





- Complies with highest quality standards according to ISO / DIN 4788
- Manufactured From 3.3 Low expansion borosilicate glass with precision bore tubing
- Individually calibrated on automatic calibration machine for precision and high accuracy
- Strict quality control through all steps eradicate possible deviations
- All measuring cylinders are calibrated to contain (TC, In) and all tolerances are according to ISO / DIN / ASTM class " A" Standards
- Supplied with Batch certificate and can be download from our website
- Specially designed hexagonal base provides sturdiness to the cylinder
- Perfect spout designed assures pouring without any drips
- Graduations and Inscriptions are printed in amber / white enamel
- Cylinders are also available with penny head stopper





2975 - Cylinders, Colour Comparison, Nessler, Flat Bottom, Graduated

- Complies with IS 4161
- Calibration at 20°C
- Facilitates colour comparison of water samples
- Manufactured from precision bore 3.3 borosilicate tubing selected for freedom from colour or visible defects
- White enamel inscriptions

Product Code	Capacity ml	Approx O.D. x Height mm	Quantity Per Case
2975012	50	25 x 150	20
2975016	100	34 x 180	30

100 ml Cylinder is marked at 50 ml and 100 ml

50 ml Cylinders is marked at 25 ml and 50 ml

* Blue enamel inscriptions can be supplied upon request



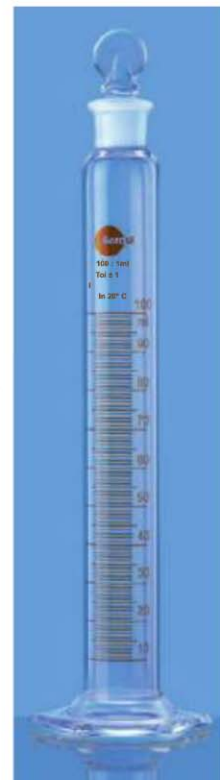
2981 - Cylinders, Graduated, Single Metric Scale, With Penny Head Interchangeable Stopper With Hexagonal Base, Class A, With Batch Certificate

- Complies with ISO / DIN 4788
- Calibration at 20°C
- Each cylinder is engraved with a unique serial number, and comes with a Certificate of Calibration traceable to national standards
- Graduations in Amber enamel
- Sturdy hexagonal base prevents roll-over and ensures greater stability
- Solid glass stopper

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Stopper Size	Quantity Per Case
2981005D	5	0.1	0.05	10 / 19	5
2981006D	10	0.2	0.10	10 / 19	5
2981009D	25	0.5	0.25	14 / 23	10
2981012D	50	1.0	0.50	14 / 23	10
2981016D	100	1.0	0.50	19 / 26	10
2981021D	250	2.0	1.00	24 / 29	5
2981024D	500	5.0	2.50	24 / 29	5
2981029D	1000	10.0	5.00	34 / 35	4
2981030D	2000	20.0	10.0	34 / 35	4

* Blue enamel inscriptions can be supplied upon request

* Individual calibration certificate can be provided on request

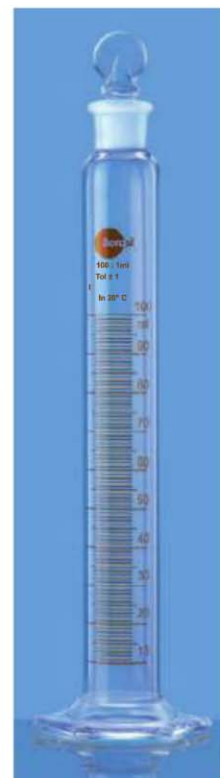


2982 - Cylinders, Graduated, Single Metric Scale, With Penny Head Interchangeable Stopper With Hexagonal base, Class B

- Complies with ISO / DIN 4788
- Calibration at 20°C
- Graduations in Amber enamel
- Sturdy hexagonal base prevents roll-over and ensures greater stability
- Solid glass stopper

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Stopper Size	Quantity Per Case
2982005D	5	0.1	0.1	10 / 19	5
2982006D	10	0.2	0.2	10 / 19	10
2982009D	25	0.5	0.5	14 / 23	10
2982012D	50	1.0	1.0	14 / 23	10
2982016D	100	1.0	1.0	19 / 26	10
2982021D	250	2.0	2.0	24 / 29	10
2982024D	500	5.0	5.0	24 / 29	5
2982029D	1000	10.0	10.0	34 / 35	4
2982030D	2000	20.0	20.0	34 / 35	4

* Blue enamel inscriptions can be supplied on request





3021 - Cylinders, Graduated, Single Metric Scale, With Pour Out, With Hexagonal Base, Class A, With Batch Certificate

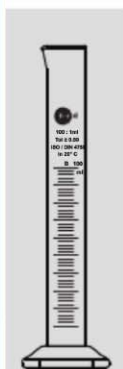
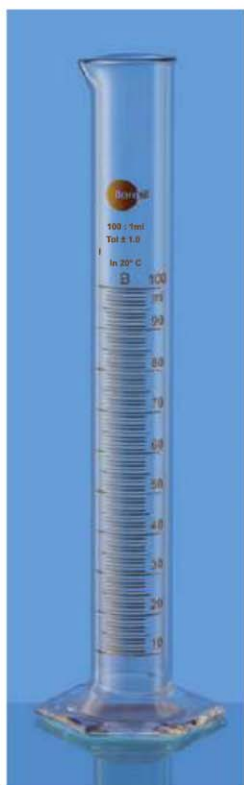
- Complies with ISO / DIN 4788
- Calibration at 20°C
- Each cylinder is engraved with a unique serial number, and comes with a Certificate of Calibration traceable to national standards
- Graduations in Amber enamel
- Sturdy hexagonal base prevents roll-over and ensures greater stability

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
3021005D	5	0.1	0.05	5
3021006D	10	0.2	0.1	5
NEW 3021008D	20*	1.0	0.25	10
3021009D	25	0.5	0.25	10
3021012D	50	1.0	0.5	10
3021016D	100	1.0	0.5	10
3021018D	150*	2.0	1.0	5
3021021D	250	2.0	1.0	10
3021024D	500	5.0	2.5	5
3021029D	1000	10.0	5.0	4
3021030D	2000	20.0	10.0	4

*Not covered in any standards.

* Blue enamel inscriptions can be supplied upon request

* Individual calibration certificate can be provided upon request



3022 - Cylinders, Graduated, Single Metric Scale, With Pour out, With Hexagonal Base, Class B

- Complies with ISO / DIN 4788
- Calibration at 20°C
- Graduations in Amber enamel
- Sturdy hexagonal base prevents roll-over and ensures greater stability

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
3022005D	5	0.1	0.1	10
3022006D	10	0.2	0.2	10
3022009D	25	0.5	0.5	20
3022012D	50	1.0	1.0	20
3022016D	100	1.0	1.0	20
3022018D	150*	2.0	2.0	5
3022021D	250	2.0	2.0	20
3022024D	500	5.0	5.0	10
3022029D	1000	10.0	10.0	4
3022030D	2000	20.0	20.0	4

*Not covered in any standards.

* Blue enamel inscriptions can be supplied upon request



3023 - Cylinders, Measuring as per ASTM D86 - for Petroleum Industry

- Complies with ASTM D 86
- Calibration at 20°C
- Each cylinder is graduated with a unique serial number and comes with a certificate of calibration traceable to national standards
- Graduation in amber enamel
- Sturdy hexagonal base prevents roll over and ensures greater stability

Product Code	Capacity ml	Graduation Interval ml	Tolerance +_ ml	Quantity Per Case
3023016	100	1	1	5

* Blue enamel inscriptions can be supplied upon request

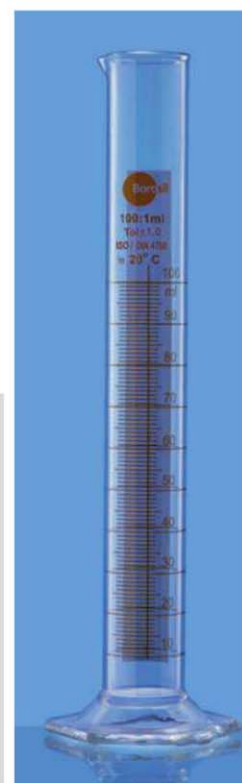
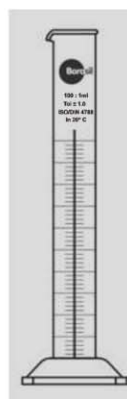


3024 - Cylinders, Single Metric Scale, With Pour Out, Schelbach type, With Hexagonal Base, Class B

- Complies with ISO / DIN 4788
- Calibration at 20°C
- Graduations in Amber enamel
- Sturdy hexagonal base prevents roll-over and ensures greater stability
- Proper visibility to read the meniscus

Product Code	Capacity ml	Graduation Interval ml	Tolerance +_ ml	Quantity Per Case
3024012	50	1.0	1.0	5
3024016	100	1.0	1.0	5

* Blue enamel inscriptions can be supplied upon request

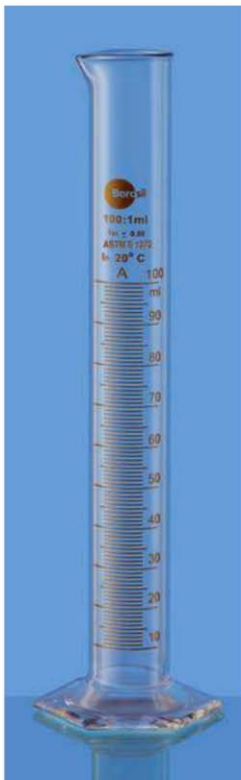





Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th

QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

www.cosmos-supply.com



3026 - Cylinders, Graduated, Single Metric Scale, With Pour Out, With Hexagonal Base, Accuracy as per ASTM, Class A With Batch Certificate

- Complies with ASTM E 1272
- Calibration at 20°C
- Calibrated as per Class A tolerances required by the United States Pharmacopoeia (USP) that are tighter than those of ISO / DIN standards
- Each cylinder is engraved with a unique serial number, and comes with a Certificate of Calibration traceable to national standards
- Graduations in Amber enamel
- Manufactured with chemically resistant 3.3 borosilicate glass
- Sturdy hexagonal base prevents roll-over and ensures greater stability

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
3026005	5	0.1	0.05	5
3026006	10	0.2	0.1	5
3026009	25	0.5	0.17	5
3026012	50	1.0	0.25	5
3026016	100	1.0	0.5	5
3026021	250	2.0	1.0	5
3026024	500	5.0	2.0	4
3026029	1000	10.0	3.0	4
3026030	2000	20.0	6.0	4

* Blue enamel inscriptions can be supplied upon request

* Individual calibration certificate can be provided upon request



3027 - Cylinders, Graduated, Single Metric Scale, With Pour Out, With Hexagonal Base, accuracy as per ASTM, Class B

- Complies with ASTM E 1272
- Calibration at 20°C
- Calibrated as per Class B tolerances required by the United States Pharmacopoeia (USP) that are tighter than those of ISO / DIN standards
- Graduations in Amber enamel
- Manufactured with chemically resistant 3.3 borosilicate glass
- Sturdy hexagonal base prevents roll-over and ensures greater stability

Product Code	Capacity ml	Graduation Interval ml	Tolerance \pm ml	Quantity Per Case
3027005	5	0.1	0.1	10
3027006	10	0.2	0.2	10
3027009	25	0.5	0.34	10
3027012	50	1	0.5	10
3027016	100	1	1.0	10
3027021	250	2	2	10
3027024	500	5	4	10
3027029	1000	10	6	4
3027030	2000	20	12	4

These cylinders are suitable to use as per USP tolerance for pharma industry

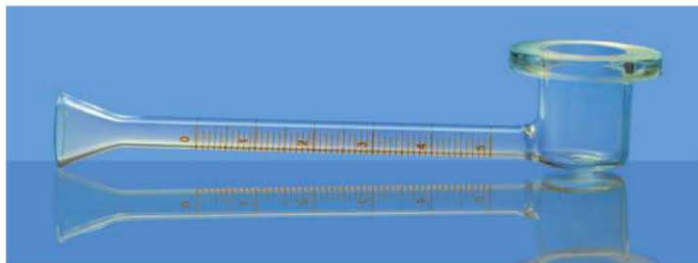
* Blue enamel inscriptions can be supplied upon request



3030 - Karsten Tube Horizontal, As Per USP

- Application in Cement Industry

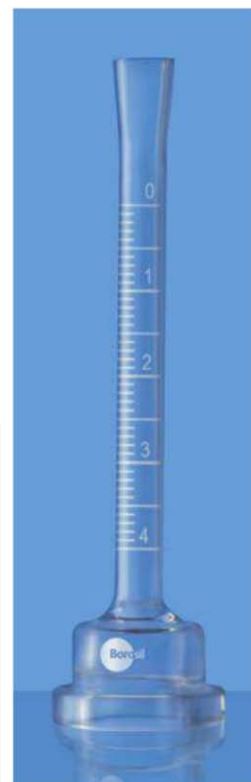
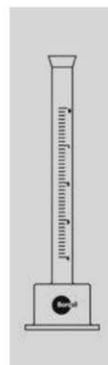
Product Code	Flange Dia x Height mm	Quantity Per Case
3030004	40 x 160	5
3030005	52 x 200	5



3031 - Karsten Tube Vertical

- Application in Cement Industry

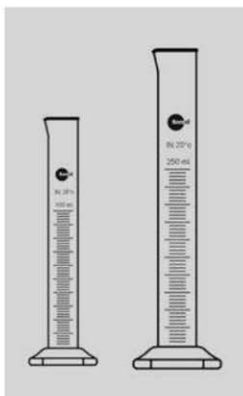
Product Code	Flange Dia x Height mm	Quantity Per Case
3031004	40 x 147	5



3032 - Tapped Density Cylinder, As Per USP 616

- Used in tapped density apparatus to measure bulk density of powders

Product Code	Capacity (Set) ml	Quantity Per Case (Set)
3032041	100 & 250	1

**3033 - Tapped Density Cylinder, As Per USP 616**

Product Code	Capacity (Set) ml	Quantity Per Case (Set)
3033016	100	2

**3034 - Tapped Density Cylinder, As Per USP 616**

Product Code	Capacity (Set) ml	Quantity Per Case (Set)
3034021	250	2

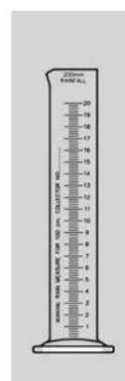




3070 - Cylinders, Rain Measure, Metric Scale, Graduated, With Round Base

- Complies with IS 4849
- Manufactures with with chemically resistance 3.3 borosilicate glass
- Graduation in white enamel
- The cylinders are graduated to indicate rainfall in mm when used with appropriate rain collector

Product Code	Size mm	Used For Collector Area cm ²	Graduation Interval mm	Tolerance ± mm	Quantity Per Case
3070096	20	200	0.2	0.05	5
3070098	20	100	0.2	0.1	10



Desiccators

Borosil brand Desiccators are equipped with bodies and covers that have great strength and utility. The body is designed with a streamlined contour that facilitates easy cleaning of the used desiccant. Any desiccant such as sulphuric acid, phosphoric pentoxide, calcium chloride or silica gel may be used in Borosil brand Desiccators.

For your convenience, all Borosil brand Plain Desiccators of the same size have interchangeable covers and bodies.

When the ground surface is cleaned and greased, Vacuum type Desiccators hold a vacuum of 500 mm of mercury.





3082 - Desiccators, With Cover And Porcelain Plate, Plastic Knob

- Complies with IS 6128
- Robust Desiccator base and cover made of borosilicate glass
- Simple design for drying under atmospheric pressure
- Ground glass flanges
- Plates are positioned on an internal ledge within the base
- Generally used for drying of moist products, and for storage of moisture-sensitive substances

Product Code	Approx ID Ground Flange mm	Quantity Per Case
3082041	100	1
3082042	150	1
3082043	200	1
3082044	250	1
3082045	300	1



3083 - Desiccators, Vacuum, Stopcock With PTFE Spindle, And Porcelain Plate

- Complies with IS 6128
- Designed for use under vacuum
- Sturdy construction of borosilicate glass
- Ground glass flanges
- Plates are positioned on an internal ledge within the base
- Comes with PTFE stopcock at the top
- Generally used for drying of moist products, and for storage of moisture sensitive substances

Product Code	Approx ID Ground Flange mm	Quantity Per Case
3083041	100	1
3083042	150	1
3083043	200	1
3083044	250	1
3083045	300	1

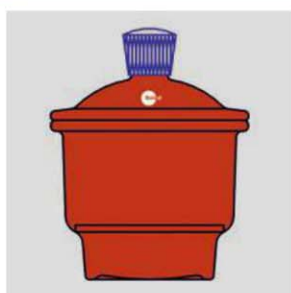





Cosmos Supply Co., Ltd.
cosmos_supply@hotmail.com
cosmos_supply@yahoo.co.th

QTS Agro Co., Ltd.
qts_agro@hotmail.com
qts_agro@yahoo.co.th

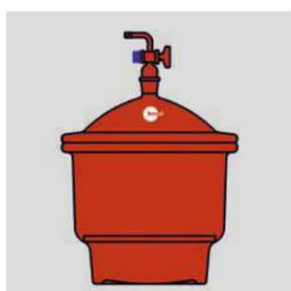
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3084 - Desiccators, With Cover And Porcelain Plate, Plastic Knob, Amber

- Complies with IS 6128
- Suitable for light sensitive products

Product Code	Approx ID Ground Flange mm	Quantity Per Case
3084041	100	1
3084042	150	1
3084043	200	1
3084044	250	1
3084045	300	1



3085 - Desiccators, Vacuum, stopcock with PTFE spindle and Porcelain plate, Amber

- Complies with IS 6128
- Suitable for light sensitive products

Product Code	Approx ID Ground Flange mm	Quantity Per Case
3085041	100	1
3085042	150	1
3085043	200	1
3085044	250	1
3085045	300	1