

SCHOTT
glass made of ideas

Ampoules



SCHOTT is an international technology group with more than 125 years of experience in the areas of specialty glasses and materials and advanced technologies. With our high-quality products and intelligent solutions, we contribute to our customers' success and make SCHOTT part of everyone's life.

SCHOTT Pharmaceutical Systems is one of the world's leading suppliers of glass tubing and primary packaging for the pharmaceutical industry. We provide our customers quality solutions while meeting their highest demands with our material expertise, specialized analytical lab services, and a broad product portfolio; including ampoules, cartridges, vials and syringes made of glass and COC polymer. Our state-of-the-art production facilities and our products comply with the highest international quality standards for pharmaceutical needs.



With SCHOTT, you team up with a truly global partner. Our extensive production network of 16 packaging and 5 tubing production sites offers safe supply, technical support and local service.

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SCHOTT ampoules – a variety of solutions

Ampoules for all kinds of pharmaceutical applications

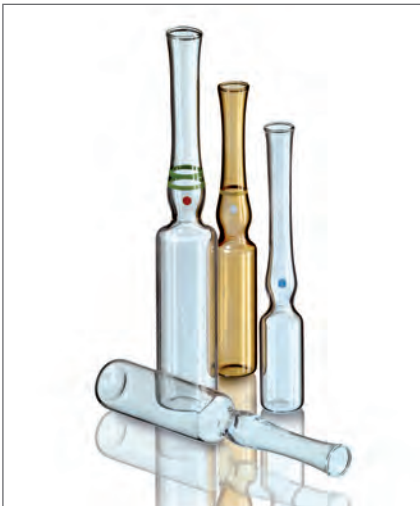
Ampoules offer special benefits: The medication is only in contact with the glass and the packaging is 100% tamper-proof.

SCHOTT produces a complete range of ampoules according to ISO specifications or specifically designed products from 1 ml to 50 ml in clear, yellow or amber glass. There are different break systems available such as One Point Cut (OPC), Color-Break-Ring (CBR), Scoring (SCO) or Double Ring Break (DRB).

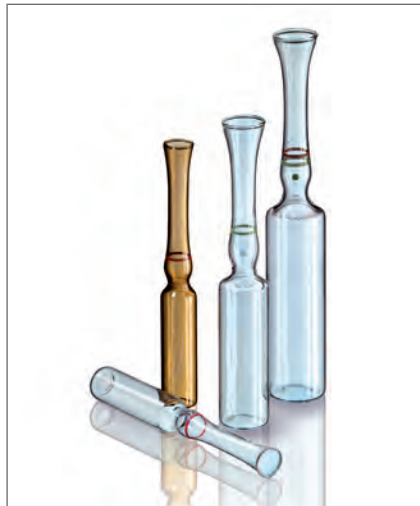
Several color rings can be placed on the stem or body for identification purposes. Printed ampoules can be supplied with colors free of heavy metals.



A broad product portfolio made of SCHOTT glass



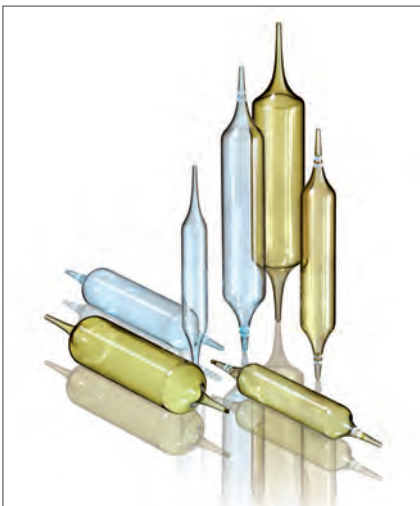
Form B
Volumes: 1 ml to 30 ml
Break systems: OPC, CBR, SCO (up to 30 ml)



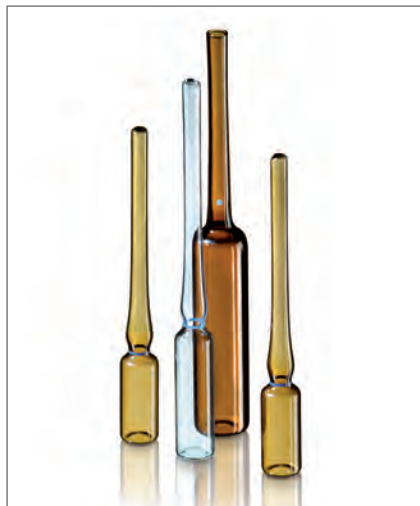
Form C
Volumes: 1 ml to 30 ml
Break systems: OPC, CBR, SCO (up to 30 ml)



Form D
Volumes: 1 ml to 30 ml
Break systems: OPC, CBR, SCO



Double tip
Volumes: 1 ml to 20 ml
Break systems: CBR, DRB



Marzocchi and Special Designs
Volumes: 1.5 ml to 20 ml
Break systems: OPC, CBR

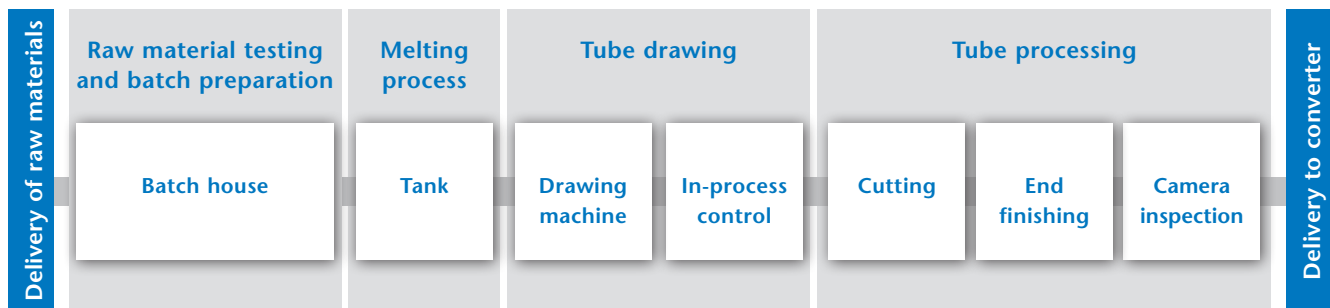


Fine tip
Volumes: 1 ml to 15 ml
Break systems: CBR, SCO

Integrated glass and process expertise

From raw materials to SCHOTT FIOLAX® glass tubing

More than 125 years of experience in glass technology and manufacturing guarantee the superior quality of SCHOTT glass tubing. FIOLAX® borosilicate glass tubes are Type I glasses of highest hydrolytic resistance. Excellent barrier and cosmetic properties, high chemical resistance, light protection as well as tight geometric tolerances in diameter and wall thickness are the starting point for manufacturing high quality products with an outstanding process capability designed for state-of-the-art filling lines.



Melting process

The manufacturing plant houses several tanks, which operate at a melting temperature of around 1600°C. FIOLAX® tubing is produced from raw materials that conform to world wide standards. SCHOTT's own sorted cullets are used in the melting process. Our stable glass composition means stable chemical properties in our customers' filled container.

Tube drawing

SCHOTT glass tubing is produced in a continuous drawing process resulting in optimum geometrical and optical quality. This minimizes the breakage risk in high-speed filling lines and leads to higher yield and stable production processes. In addition, the outer tubing surface can be coated to avoid scratches during transportation and handling.

Tube processing

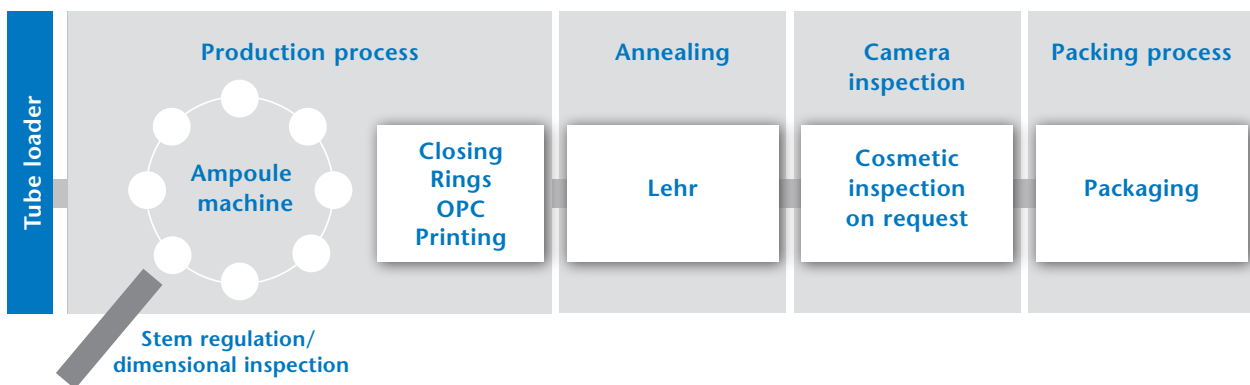
In order to avoid contamination during storage, transport and processing, SCHOTT FIOLAX® tubing is separated with low particle content and sealed using flame.

Quality control

All of SCHOTT's tubing plants across the world adhere to the same quality management policy. Our state-of-the-art inspection system ensures that the strictest standards are continuously met. All data are collected in a special pallet certificate for complete traceability. Highest levels of quality are assured throughout the whole production process.

From tubing to high quality SCHOTT containers

Quality is the most important driver to improve our customers' production yield and increase performance on high-speed filling lines. Our expertise in glass converting in combination with our qualified workforce ensures the consistent high quality level of our products. SCHOTT ampoules are manufactured on high-tech production equipment with the latest online inspection systems. In addition, they are packed in a protected environment to avoid contamination.



Converting forming process

High-precision forming technology is combined with our proven glass expertise to guarantee superior quality and a high process capability. Our improved process handling avoids glass-to-glass contact along the production line to ensure we deliver products with strict cosmetic standards and minimum breakage risk at the customer end.

100% in-process control

All critical dimensional parameters and cosmetic attributes are 100% inspected during manufacturing utilizing the latest vision technologies and our proprietary inspection systems with automatic classification of defects by type, size and position on the container. This allows our customers to realize improvements in throughput and minimize incoming inspections, thus reducing rejection costs.

Statistical in-process inspection (SPC)

Efficient performance tracking is facilitated by continuous process monitoring via real-time manufacturing data to ensure quality, dimensional stability and less production downtimes for our customers.

Packing process

Raw material and product handling is the key to premium quality. Automated smart pick-and-place systems guarantee gentle care of our product from loading through final packaging. SCHOTT products are packed in a protected packaging zone to avoid contamination.

Tailored quality

From standardized to customized quality options

Market developments such as tightened regulatory demands and cost sensitivity in the healthcare sector impose increasing requirements on drug delivery products. A broad variety of container geometries and quality levels enables us to identify the primary packaging solution that meets your distinctive needs. All SCHOTT ampoules comply with the international norms Ph.Eur., USP, and JP. Strict quality control and excellent process capability are guaranteed by our technologically advanced production lines enhanced with high-precision equipment. All of our products are manufactured and packed in environmentally controlled areas certified by ISO 9001 and ISO 15378.



Standardized and customized solutions

Industry pressure to accelerate drug development and launch and at the same time meet new requirements can pose challenges to drug manufacturers. Therefore, we offer both standardized solutions for a shorter time-to-market and customized solutions for innovative requirements.

StandardLine – 100% camera inspected for dimensions

StandardLine by SCHOTT is designed to deliver reliable performance on our customers' filling line. The features of StandardLine include:

- 100% inspection of 10 key dimensions during the manufacturing process
- Regulation system for the stem diameter
- Break system detection

TopLine – customized solutions

With TopLine, our customers can choose from a variety of options designed to meet specific customer needs.

The features of TopLine include:

- Optimized dimensions for better processability

Reduced stem diameter tolerance

Less rejection during final inspection for irregular closing shape

Reduced bottom depth

Optimized design for lyophilization

- Automated inspections to reduce rejections during final inspection

100% cosmetic inspection

Inspection of contamination and defect on dots, cuts, rings

100% printing text inspection

Inspection of lack of paint, missing letters, stains and scratches

- Improved functionality for pharmaceutical companies and end users

Reduced alkalinity limit

Increased drug stability

Ammonium sulfate treatment

Inner treatment with ammonium sulfate reduces alkalinity level

Reduced OPC break force range

Specific OPC system allows for easy and consistent opening of the ampoule

Customer service right from the start

Our service is the key to your success

Delivery of high quality ampoules is sometimes not enough to ensure a high performance during our customer's washing, filling, sealing and final inspection processes as process particularities are not noticeable in a product drawing.

The association between the ampoules and the customers process particularities must be observed and continuously improved. Your benefit: increased yield through reduced breakage and downtime.



Advantages at-a-glance

Glass expertise

The right chemistry is with SCHOTT: In close cooperation with our customers, we continuously develop new solutions and process improvements based on 125 years of glass expertise and proven supplier track record.

Compliance

Tailored container solutions for different regulatory, market, product and process requirements meet today's and tomorrow's customer demands.

Reliability

We offer a safe and secure global supply through 16 packaging and 5 tubing production sites, each equipped with identical production technology and involved in continuous know-how exchange.

Value

Total cost of ownership put into practice: Gentle handling that avoids glass-to-glass contact during production as well as 100% online dimensional and optional cosmetic inspection enable us to deliver products with outstanding performance.



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