

Embrace tomorrow with FIOLAX® Pro

FIOLAX® Pro redefines pharmaceutical glass by setting a new global benchmark.

The top-tier future-proof glass for primary pharma packaging

With our borosilicate glass offering FIOLAX® Pro we meet fundamental industry requirements: drug safety, efficiency, and PCF reduction. Superseding FIOLAX® clear, it marks the beginning of a future-ready transition for the industry – because patient safety starts with us.



Safety

Elevate drug safety and stability
by minimal level of drug-container interactions proven by

- a superior extractables & leachables level for all glass elements
- a constant glass composition
- a superior and constant hydrolytic resistance performance

Meet regulatory requirements
by future-proof glass composition

- absence of any heavy metals
- therefore easy compliance with ICH Q3D
- as improved Type I glass type compliant with all international regulations: Ph.Eur., USP, JP, ChP, YBB, REACH, RoHS



Efficiency

Boosting efficiency and high yield
through smooth machinability during converting and fill-and-finish processes

- high output by first-class cosmetic quality: e.g. low tendency of airline formation
- high precision by dimensional accuracy: e.g. tighter tolerances than ISO standard

Serving demanding and individual needs (e.g. reduction of overdosing)
by customizable specifications including zero-defect options

Transparent glass quality
documented by a digital quality data package for each product delivery
enabled by perfeXion® process



PCF reduction

Supporting the goals of our customers
with the optional FIOLAX® Pro OCF product line, which will be available first quarter of 2027 with an approx. 50 % lower product carbon footprint*. This is enabled by an electric melting tank, powered by 100 % of electricity in the melting process covered by renewable energy Guarantees of Origin; natural gas is only used in the separate refining unit and working tank part for technical reasons. Detailed information on our website here.

*Calculation of greenhouse gas emissions from cradle-to-gate per kilogram of saleable glass tubing compared to the market average for borosilicate glass tubing [average value according to ecoinvent 3.10; glass tube production, borosilicate // DE. The value currently calculated is based on empirical values and simulation data]. Relevant information about the FIOLAX® Pro OCF product line and the electrical tank can be found in the implementation plan.

FIOLAX® Pro – your beneficial enabler for future-proof primary packaging



Benefits for syringes

Precise shaping of cone and flange
through tighter tolerances than ISO standard and further optional tightening down to ± 0.05 mm

High dosage accuracy, reduced overfill losses and consistent plunger gliding force
supported by very tight inside diameter tolerances

High yield during final visual inspection
powered by 100 % online inspection of cosmetic quality through our perfeXion® process control

Refined cosmetic quality
achieved through reduced airline presence, including critical inside open airlines, eliminating possible effects on syringe sterility

Less drug container interactions
set by a high chemical resistance and superior E&L profile, especially important for demanding biologics

Syringe tubing range

Outside diameter: 6.85 – 22.05 mm acc. to ISO formats
Customized dimensions are also available.



Benefits for cartridges

Precise shaping of flange, neck and shoulder
through tighter tolerances than ISO standard and further optional tightening down to ± 0.05 mm

High yield during final visual inspection
powered by 100 % online inspection of cosmetic quality through our perfeXion® process control

Higher dispensing accuracy and reduced overfill loss
supported by tightly-toleranced inside diameter down to ± 0.05 mm

Refined cosmetic quality
achieved through reduced airline presence, including critical inside open airlines, eliminating possible effects on cartridge sterility

Less drug container interactions
high chemical resistance leads to less drug-container interactions, especially important for demanding biologics

Cartridge tubing range

Outside diameter: 8.15 – 22.05 mm incl. all ISO formats
Customized dimensions are also available.

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FIOLAX® Pro – your beneficial enabler for future-proof primary packaging



Benefits for vials

Uniformly precise shaping of shoulder, neck and bottom
through constant and tightly-toleranced wall thickness

Filling volumes up to 100 ml
customer-specific and exceptional outside diameter/wall thickness combinations

Temperature resistance
from cold storage at –80 °C to final sterilization at +121 °C, whether storing liquids or freeze-dried products – the complete temperature range is covered

Smooth operation on high-speed filling lines
made possible through precise outside diameter

Less drug container interactions
set by a high chemical resistance and superior E&L profile, especially important for demanding biologics

Vial tubing range

Outside diameter: 9.00 – 50.00 mm incl. all ISO formats (> 40 mm from 2027)
Customized dimensions are also available.



Benefits for ampoules

Uniformly precise shaping of shoulder, tip, constriction area and bottom
through constant and tightly-toleranced wall thickness

Smooth operation on high-speed filling machines and accurate filling
made possible by tighter tolerances than ISO standard

Minimized drug container interactions (e.g. pH shift of unbuffered solutions)
given by the high chemical resistance of the glass

Ampoule tubing range

Outside diameter: 9.00 – 25.00 mm incl. all ISO formats
Customized dimensions are also available.

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FIOLAX® Pro – facts at a glance

Data

Drug suitability	All, esp. parenterals					
Glass type	middle borosilicate glass (5.0 expansion type)					
Regulatory classification (e.g. USP[1]/Ph.Eur.[2]/ChP[3])	Type I					
Chemical composition (main components in approx. weight %)	SiO_2 73	B_2O_3 11	Al_2O_3 7	Na_2O 7	K_2O < 1	CaO < 1
Free of heavy metals	As Sb Sn					
Extractables profile	Superior ▪ does not contain any element of the ICH-Q3D class 1, 2A, 2B, 3 ▪ high hydrolytic resistance					
Color	clear					
Physical properties	CTE $5.2 \cdot 10^{-6} \cdot K^{-1}$		T_g 560 °C		Working point 1170 °C	
perfeXion® processed	✓					
Anti-scratch coating	✓					

Product lines

- OCF (reduced CO_2 emissions) expected to be available first quarter 2027
- OS (Optimized Strength)

Customizing options

- Tube-end finish
- Tighter tolerances
- Zero defect options

Validation support

If you plan to validate your primary packaging with FIOLAX® Pro, SCHOTT Tubing can help. We will gladly provide you with technical documentation on FIOLAX® Pro.

Request FIOLAX® Pro technical documentation now.



[1] USP = United States Pharmacopoeia | [2] Ph. Eur. = European Pharmacopoeia | [3] ChP = Chinese Pharmacopoeia

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