

EVERIC® amber

Reliable light protection and regulatory compliance



- While every protein is sensitive to light, the more complex the molecule, the higher the possibility of light-induced aggregation or degradation.
- Antibody-drug conjugates (ADCs) are particularly sensitive to light due to their fragility.
 Even light exposure during filling prior to lyophilization can cause issues.
- Adapting the lighting set-up during filling is cumbersome and may not be sufficient.
- Existing solutions do not comply with USP, Ph. Eur., and JP light transmission requirements, so multiple primary packaging articles may be necessary.
- EVERIC® amber offers a solution that provides reliable light protection while remaining compliant with USP, Ph. Eur., and JP standards.



FIOLAX® amber glass tubing – absorption of light



Improved forming process: tight control of dimensional parameters and temperature ranges



Unchanged glass composition – Type I Borosilicate Glass



Full compliance with light transmission requirements of Ph. Eur., USP and JP



Light protection

Protection against ultraviolet rays and short-wave visible light



Global compliance

Suitable for pharmaceutical companies operating in multiple regulatory environments



01 Mechanical cut & cleaning

Vial is:

- 1) Cut in vertical direction
- 2) Cleaned to get a guasi-plan. contaminant-free surface



02 Spectral screening

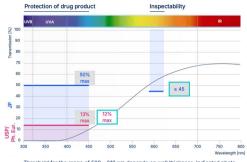
Light transmission is measured through the middle of the vial body

Detector



03 Spectral evaluation

Certified release criteria acc. to wall thickness and filling volume



Threshold for the range of 590 – 610 nm depends on wall thickness. Indicated photo-induced reactions are not considered transmission-rate dependent in this illustration.

■ = 10 ml, 1.0 mm WT □ = 20 ml, 1.2 mm WT % = JP % = USP/Ph. Eur.

Verifications: The right production set-up is key to achieving global compliance

Threshold JP

Annealing after hot-forming is necessary to avoid residual stress, but it influences transmission.

Light transmission compliance with Ph. Eur., USP and JP standards can be achieved for amber vials with a 1 mm thick wall (2-10R) via tight process control.

10R specification: 290 - 450 nm (≤ 13%) 10R specification: 590 - 610 nm (≥ 45%) Transmission [%] Transmission [%] 14 13 11 Tube T_1 T_2 T_3 T_4 Tube T. T_3

Figure 1: Light transmission compliance for 10R vial (wall thickness 1 mm)

By reducing the wall thickness of a 20R vial to 1 mm, compliance with USP, Ph. Eur., and JP standards can be achieved.

Strength-optimized parameters with tight dimensional tolerances. dedicated inspection and packaging with dividers ensure strength similar to conventional vials.

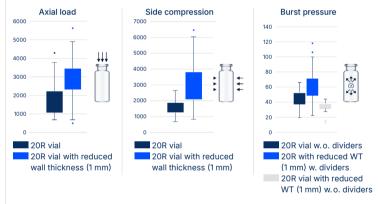


Figure 2: Strength tests for 20R vial with a reduced wall thickness (1 mm)

| General ordering information | | | | |
|------------------------------|--|-----|-----|-------|
| Quality level | StandardLine & release test | | | |
| Packaging | Tray (with divider for 10R and 20 ml format) Pre-washed & pre-sterilized: adaptiQ[®] (tray, cup, nest) | | | |
| Possible combinations | EVERIC® amber can be combined with EVERIC® Iyo | | | |
| Palletizing | A standard Euro Pallet (1200 x 800 mm) contains 15 – 27 layers of 9 trays each | | | |
| Formats | 2R | 6R | 10R | 20 ml |
| Pieces per tray | 344 | 186 | 104 | 77 |

Order now: www.schott-pharma.com/vials

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Threshold USP / Ph.Eur.