

Storage & handling of Lipids

Organic solutions

Phospholipids supplied as an organic solution should be stored in a glass container layered with argon or nitrogen at $<-20^{\circ}\text{C}$. The closure for the vial should be lined with teflon. Organic solutions should never be stored in polymer or plastic containers (polystyrene, polyethylene, polypropylene, etc.) as this will leach impurities out of the container¹. Lipids in water can be stored in plastic.

Transferring organic solutions

Always use glass, stainless steel, or teflon to transfer lipids stored as organic solutions.

- Do NOT use plastic pipet tips to transfer organic solutions of lipids²
- Do NOT use Eppendorf tubes with organic solvents
- Do NOT use Parafilm with organic solvents

Powders

Phospholipids supplied as a powder should be handled as described below.

Saturated lipids

Lipids composed of fatty acids that are completely saturated (e.g., dimyristoyl or dipalmitoyl phosphatidylcholine) are stable as powders. These lipids should be stored in a glass container with a teflon closure at $<-20^{\circ}\text{C}$. When transferring a portion of the material out of the container, remove the container from the freezer and allow the material to reach room temperature before opening the bottle.

Notes

Phospholipids should not be stored for long periods of time as aqueous suspensions. Storage of lipids in an excess of water results in hydrolysis of the sample.

References

- ¹ McDonald, J.G., C.L. Cummins, R.M. Barkley, B.M. Thompson, and H.A. Lincoln. (2008). Identification and quantitation of sorbitol-based nuclear clarifying agents extracted from common laboratory and consumer plasticware made of polypropylene. *Anal. Chem.* 80:5532-41.
- ² Pidgeon, C., Apostol, G., & Markovich, R. (1989). Fourier transform infrared assay of membrane lipids immobilized to silica: leaching and stability of immobilized artificial membrane-bonded phases. *Analytical Biochemistry* 181, 28-32.

Unsaturated or tissue derived lipids

Lipids composed of fatty acids containing one or more double bonds (e.g., dioleoyl phosphatidylcholine or egg phosphatidylcholine) are not stable as powders. These lipids are extremely hygroscopic as powders and will quickly absorb moisture and become gummy upon opening the container. This could result in hydrolysis or oxidation of the material. These lipids should be dissolved in a suitable organic solvent, transferred to a glass container with a teflon closure, and stored at or below -20°C .

Avanti LIPID MAPS Mass Spec Internal Lipid Standards

- These products are designed to be one time use items
- Direct transfer from ampoule to experiment or prepare as a dilution for immediate use is suggested. Handling guidelines for lipids should be considered as outlined above.
- These products must be stored at or below -20°C .
- Avanti does not guarantee product purity and subsequent performance when used outside these guidelines and single use/immediate use design.

Shipping containers for Lipids



Glass ampule

Hermetically sealed borosilicate glass ampules provide a secure environment for lipids sensitive to oxidation. The ampules are shipped in cardboard liners for protection and storage convenience. Ampules are pre-scored for easier opening. Once the seal is broken, sample may be transferred to a Screw Cap Storage Vial (see below).

Wide-mouth bottle

Wide-mouth borosilicate glass bottles are convenient for shipping and storage of dry powder lipids. Larger openings provide easier access to lipid samples. The closure system is composed of a closed-top screw cap with a teflon liner.



Amber bottle (narrow mouth)

Amber borosilicate glass bottles are convenient for shipping and storage of larger volumes of lipids. The closure system is composed of an open-top screw cap with a teflon liner fused to a silicone rubber septum.



Screw cap storage vial

The Screw Cap Storage Vial is designed as a storage option for materials shipped in glass ampules or bottles. The closure system contains an open-top screw cap with a teflon liner fused to a silicone rubber septum.



Notes

*FIOLAX™ 8414 Amber all other Amber glass is Borosilicate

Non-warranty

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