



ProtectR® Tubes

For samples shipped on dry ice



Protects Samples Shipped On Dry Ice
Keeps pH Stable • CO₂ Resistant
Certified For Shipping

www.labcon.com



Only Labcon's ProtectR® tubes are designed to protect samples that are shipped or stored on dry ice!

Labcon's ProtectR® Tube is the only container closure system engineered to be CO₂ resistant and stop costly damage to molecular and cellular solutions when using dry ice.

Made of durable, high quality materials and fitted with an air-tight cap, ProtectR® Tubes form a protective barrier impermeable to CO₂, keeping the sample pH stable and preventing acidification.



Airtight Caps

ProtectR® caps feature a molded in sealing ring that creates an air-tight seal that prohibits carbon dioxide from entering the tube's headspace when sample is shipped in dry ice.

Samples of proteins, other biological molecules, and cell cultures are commonly shipped and stored on dry ice, putting them at risk of acidification by up to 2.5 pH units. In standard centrifuge tubes, CO₂ vapor from dry ice enters the tube headspace and causes a significant drop in the pH of the sample.

Even in short term storage conditions, samples may become acidified. This acidification can affect the integrity and reproducibility of samples, and may result in a loss of protein activity.



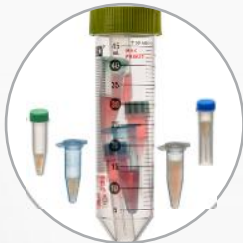
ProtectR[®] Tubes Special Features



Airtight, leak-resistant caps prohibit CO₂ from entering the tube's headspace



Patented, extra large, smudge-resistant writing panel



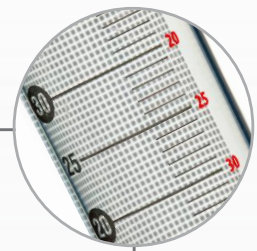
Ideal vessel for primary & secondary containment when shipping on dry ice



Thick, medical grade resin withstands breakage when frozen. Samples in CO₂ Resistant Tubes should be frozen prior to dry ice exposure.



Max Freeze Indicator

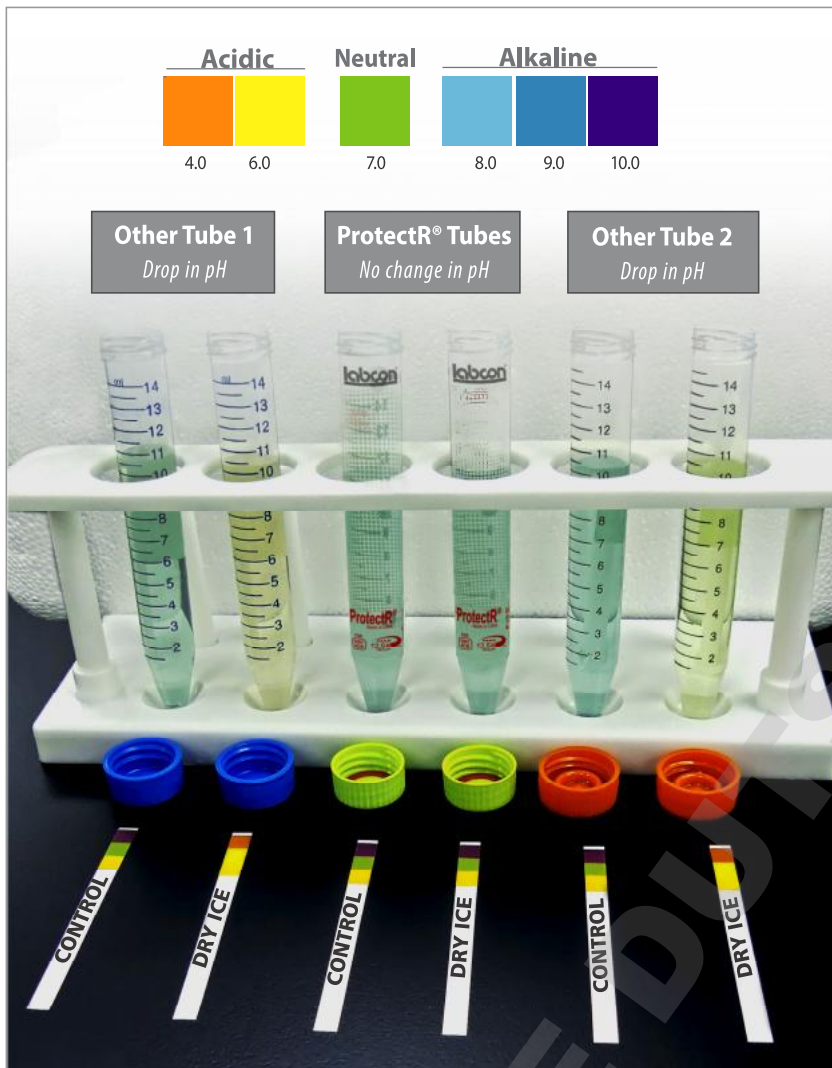


Easy-to-read graduations & reverse scale



IATA 95 kPa certification for shipping





Protect samples from acidification

Other container closure systems do not provide a reliable barrier against CO₂ sublimating from dry ice. Carbonic acid formation will cause a decrease in pH by as much as 2.5 pH units. In this experiment, acidification is seen as a solution's color shift from blue to yellow.

Measuring Sample pH Changes

pH changes seen as color shift from **blue** to **yellow**

Control
pH 8

Dry Ice
Upon thawing after dry ice exposure



ProtectR® Tube
No change in sample pH



Other Tubes
Change in sample pH

CO₂ Intrusion Test:

Other Tubes vs. Labcon ProtectR® Tubes in preventing pH change of sample

	Other Tubes						Labcon ProtectR® Tubes					
	80% Fill		40% Fill		20% Fill		80% Fill		40% Fill		20% Fill	
	CONTROL	DRY ICE (CO ₂)	CONTROL	DRY ICE (CO ₂)	CONTROL	DRY ICE (CO ₂)	CONTROL	DRY ICE (CO ₂)	CONTROL	DRY ICE (CO ₂)	CONTROL	DRY ICE (CO ₂)
Sample pH	8.05	6.06	8.02	5.53	7.99	5.50	8.1	8.09	8.05	8.02	8.00	7.95
pH Change	1.99		2.49		2.49		0.01		0.03		0.05	

EXPERIMENT:

Pre-Frozen* tubes of buffered pH 8.0 solution were placed on dry ice for 48 hours.

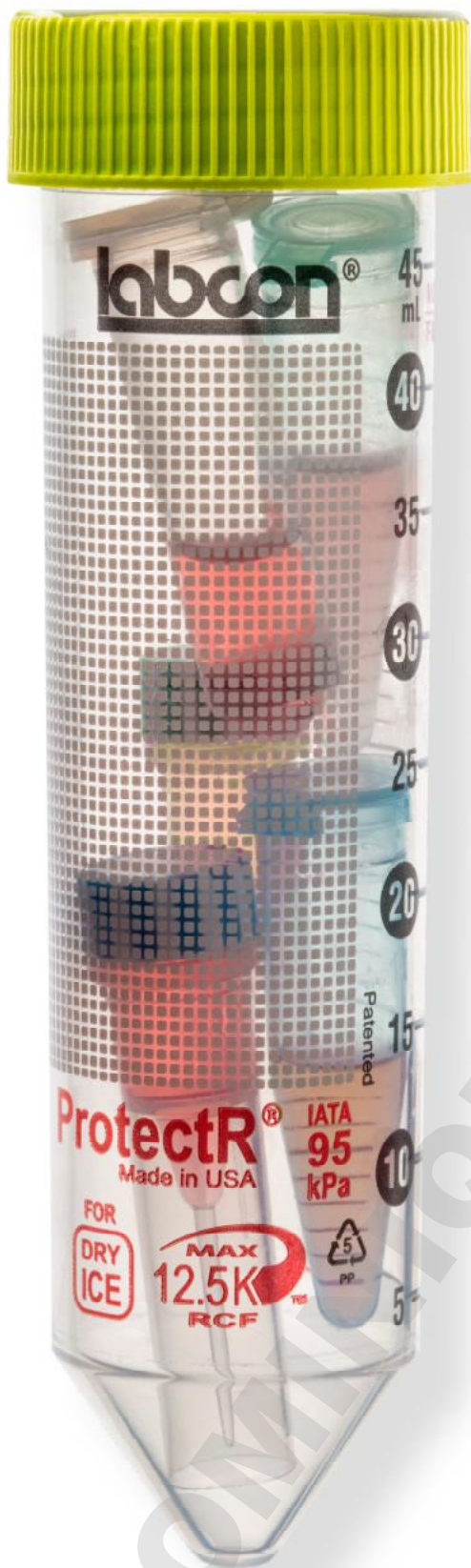
RESULTS:

Carbon dioxide enters Other Tubes headspace and acidification expands through the protein solution.

FINDINGS:

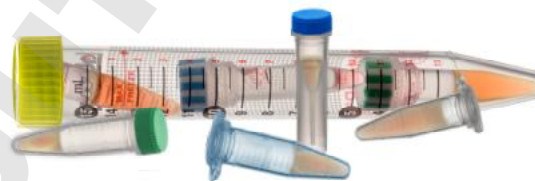
Only the ProtectR Tube protected the solution from acidification.

*Samples in ProtectR® Tubes should be frozen prior to dry ice exposure.



The ideal shipping tube for small and large sample volumes

ProtectR® tubes are the ideal vessel for primary and secondary sample containment. Samples are shipped on dry ice in a variety of volumes. When shipped in standard, small volume tubes, samples are at risk of acidification. ProtectR® tubes can be used as a secondary shipping tube for multiple small volume tubes. With their airtight, leak-resistant secure seal, ProtectR® tubes provide a protective barrier against CO₂ exposure, safeguarding the sample(s) inside from costly damage. Only ProtectR® tubes ensure consistent sample integrity and protein activity across experiments. Even if samples are delayed during shipping, they will not become compromised, saving time and money.



IATA 95 kPa certified for shipping

Most international and domestic carriers now require adherence to the IATA standards for all biological substance shipments. IATA 95 kPa certification ensures containers are leak-resistant under differential pressure conditions such as in air transport. This certification requires containers to prove capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 13.8 psi).

Since air transportation is typically the most rigorous transport condition, containers that meet IATA regulations will also meet the requirements of other transport methods.





Compact Packaging IntegraPack

- 5 sleeves of 10 tubes (50 tubes/pack, 100 tubes/case)
- Validated secure package seal for sterility
- Can be separated and opened without scissors
- Leak resistant - can be immersed or sprayed with alcohol before opening, ensuring no contamination is present
- Every sub-pack is labeled with a lot number and sterile expiration date
- Perfect for working under the lab hood

Ordering Information



15mL ProtectR® Tubes

Tube Dimensions:
Overall length: 118mm | Inside diameter: 15mm
Outside diameter: 17mm

Cat. No.	Sterile	Qty/Pk	Qty/Cs
3830-320	No	50	100
3830-325	✓	50	100



Samples in ProtectR tubes should be frozen prior to dry ice exposure.



50mL ProtectR® Tubes

Tube Dimensions:
Overall length: 115mm | Inside diameter: 25mm
Outside diameter: 29mm

Cat. No.	Sterile	Qty/Pk	Qty/Cs
3880-320	No	50	100
3880-325	✓	50	100



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