

Highlighting useful application information for
Thermo Scientific Nalgene Carboys and Jerricans

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smart notes

selection ▶ Carboys and Jerricans



QA

Why do carboys and jerricans turn yellow over time after repeated use?

Plastic products are meant to last, but they do age with repeated use, especially when storing chemicals that can impact the plastic properties, repeatedly autoclaving/sterilizing or leaving out exposed to UV light. This yellowing, which can also include crazing, cracking and pitting, is caused by a breakdown of the polymers in the plastic and is an indicator that it is time to replace the product to properly protect the contents from leakage, contamination or adsorption.



Focus on your process, not the container

Causes and Impact of Plastic Yellowing and Brittleness

Discoloration is an indication that the heat stabilizers and antioxidants are no longer doing their job in your container. It's a warning - a visual indicator that the carboy may be losing its protective elastic properties and might become brittle. This brittleness can result in potential product failure if dropped or jostled, or during freezing applications. The exact point at which the piece should be replaced is a matter of risk assessment in your own process. When noticing discoloration of your container, you may just drop it (after emptying it) to check for brittleness or simply replace it.

Ultraviolet Light Exposure

Plastic embrittles due to prolonged UV light exposure. An indicator for this damage is a color change, which is visible before the plastic is fully brittle.

Chemical Attack

Chemicals can affect the strength, flexibility, surface appearance and color of plastics over time. Not only can chemicals adsorb into the plastic, resulting in softening or swelling, but more concerning is that they can break down the long chain of polymers in the plastic, resulting in brittleness. Stress cracking can also be present after long term exposure to certain chemicals.

Physical Strain

Pressure or vacuum applications combined with some of the stressors above can result in product failure if not replaced over time.

Summary

Carboys showing signs of discoloration may require replacement. A simple drop test will typically help to confirm that. Decreasing holding time of solutions, verifying chemical compatibility, complete rinsing after use and keeping carboys out of sunlight can all increase their useful life. However, visible yellowing or a drop test that results in cracking may be a sign it's time to refresh your carboy inventory.

Because they are designed to help you assess and minimize risks in your process, Thermo Scientific™ Nalgene™ carboys are the perfect solution to replace any aging carboys. Our containers are supported with comprehensive documentation and technical expertise, manufactured with high-quality resins and tested for leakproof closures. All to minimize the risk to your products.

Support

For details on carboy compatibility, please find our chemical resistance chart at: www.thermoscientific.com/chemicalresistance

Our knowledgeable staff can help with technical questions at technicalsupport@thermoscientific.com and regulatory questions at rocrgsupport@thermoscientific.com.

To be sure you receive notifications of any changes, register at www.thermoscientific.com/notifications. Certificates of Compliance (CoC) are available on www.thermoscientific.com/certificates.



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www.thermoscientific.com/carboys

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