

EASTMAN

Eastar™ 6763 Renew copolyester

Renewing the future of sustainable medical packaging

Eastman Eastar™ 6763 Renew copolyester features the same quality and performance as legacy Eastar — now with up to 50% ISCC-certified molecularly recycled content.*

This clear, amorphous, medical grade copolyester is used for sterile pharmaceutical, flexible and rigid medical packaging. Eastar 6763 Renew is created from Eastman's molecular recycling technology, which creates value from waste materials. It's chemically identical to the Eastar customers have trusted for decades, so **adoption is simple**. Eastar 6763 Renew offers a unique opportunity for sterile barrier packaging to **enhance your sustainability story** and **lower your environmental impact**.

- **Clarity:** superior, long-term clarity for easy identification of instruments
- **Durability:** excellent puncture resistance and impact toughness
- **Sterilization compliance:** excellent ability to be subjected to almost all sterilization methods
- **Stability:** superior optical and physical property stability post-sterilization
- **Usability:** wide processing latitude and ease in thermoforming
- **Design versatility:** may be colored using color concentrates, dry colors or liquid colorants
- **Reliability:** 40 years of consistent production, performance and support



Making recycled content possible

Eastman's revolutionary molecular recycling technologies break down waste materials into their molecular building blocks, so they can be reused over and over again without degrading. This gives materials that were previously destined for landfills or incinerators an infinite lifespan.

The Kingsport molecular recycling facility will be able to process over 110,000 MT per year of plastic waste as feedstock, keeping it from landfills, incineration or the environment.

Eastman's technologies help contribute to a cleaner world by emitting less greenhouse gas and lowering our carbon footprint. Molecular recycling is a powerful new tool in the fight against material waste, enabling us to reimagine and revolutionize materials that take your sustainability story to the next level.

How much is 110,000 MT?



**Certified recycled content allocated using ISCC mass balance.*

Medical standards and support

Access to high performing, medical grade materials is critical for innovative medical device manufacturers. To provide lasting reliability and proven patient safety, manufacturers and original equipment manufacturers (OEMs) require medical grade material suppliers to provide advanced, high-quality raw materials. Those materials must offer capabilities to help comply with medical protocols and regulations.

Eastar 6763 and Eastar 6763 Renew are created with the same medical standards and support a smooth transition for customers switching to products made with our molecular recycling technologies. The FDA has confirmed that Eastman’s molecular recycling process is suitable to generate monomers for production of food contact materials and has issued No Objection Letters (NOL) which are available on the FDA’s website.

Eastar 6763 portfolio			
Medical standards and support	Eastar 6763	Eastar 6763 Renew	Certifications
Packaging for terminally sterilized medical devices (ISO 11607)	✓	✓	Products will continue to comply with applicable sections of ISO 11607.
Quality systems and GMP	✓	✓	Products will continue to be manufactured subject to GMP. Eastman operates using a system which complies with the requirements of ISO 9001 for the design, development, manufacture and supply of polymers.
U.S. FDA Drug Master Files (DMF)	✓	✓	DMF for Eastar 6763 will be updated to include products enabled by our advanced recycling process.
U.S. FDA No Objection Letter (NOL)	N/A	✓	The FDA determined that Eastman’s advanced circular recycling process produces monomers that are suitable for the manufacture of food contact materials.



Material data for resins

To provide our customers with confidence that products enabled by our advanced recycling technologies will yield the same product as the existing commercial material, we produced a small batch using our pilot-scale line.

Analysis was completed using the following methods to highlight the equivalence of the two materials.

Fourier-transform infrared spectroscopy (FTIR) is a reliable analytical method used for the identification of polymers and assessment of the quality of plastic materials. The FTIR spectra of Eastar 6763 with pilot methanolysis-derived content matches well with the spectra of Eastar 6763. Both spectra follow reference spectra for all the expected functional groups.

Graph 1. Eastar 6763 vs. Eastar 6763 Renew — Fourier-transform infrared spectroscopy (FTIR)

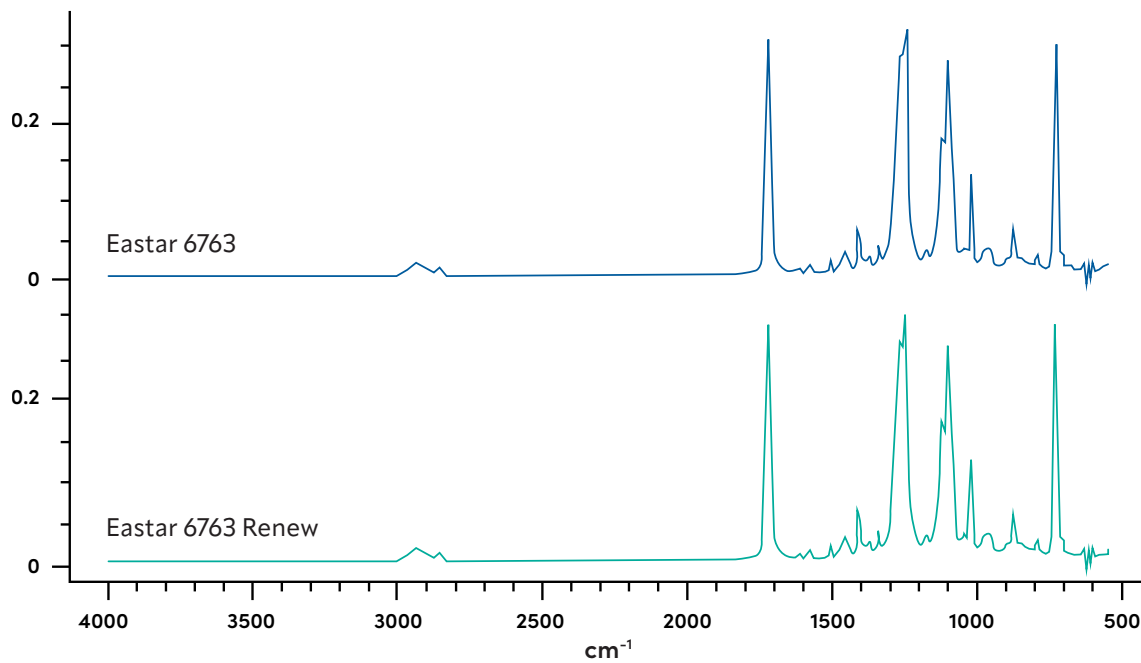


Table 1. Analytical methods show legacy Eastar 6763 and Eastar 6763 Renew derived materials were equivalent.

Analytical methods	Property acceptance criteria	Estar 6763 portfolio	
		Estar 6763	Estar 6763 Renew
Inherent viscosity, dL/g	0.75 ± 0.02	0.75	0.75
Fourier-transform infrared spectroscopy (FTIR)	Spectrum match	✓	✓
Nuclear magnetic resonance (NMR) spectroscopy	Spectrum match	✓	✓
Rheology	Spectrum match	✓	✓

Physical property data

Eastar 6763 Renew physical properties were measured using the pilot-scale material with recycled content. No major differences were observed, showing that recycled content in Eastar 6763 does not affect mechanical performance.

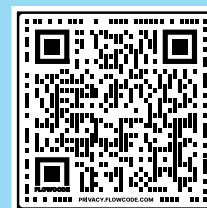
Table 2. Physical properties of Eastar 6763 Renew with methanolysis plant integration based on use of our pilot-scale line. Samples were tested using ASTM methods (type V bars and standard flexural bars) unless stated otherwise.

Physical properties	Typical property range	Eastar 6763	Eastar 6763 Renew
Tensile yield strength (MPa)	45–50	46	47
Tensile break strength (MPa)	50–55	53	51
Tensile break strain (%)	> 120	185	191
Flexural modulus (MPa)	2,000–2,200	2,195	2,120
Instrumental impact at 23°C (73.4°F); total energy, J (20 mil film)	7–9	7.9	7.7

Disclaimer

The material properties provided in this table are representative of the average characteristics observed within a typical lot. These values are intended for general reference and informational purposes. It is essential to note that actual material properties may vary slightly from the values presented herein due to manufacturing variations and other factors. Therefore, these figures should not be regarded as precise or exact numbers but rather as indicative of the expected range of properties for the specified material. It is the responsibility of the medical device manufacturer ("Manufacturer") to determine the suitability of all component parts and raw materials, including any Eastman product, used in its final product in order to ensure safety and compliance with requirements of the United States Food and Drug Administration (FDA) or other international regulatory agencies.

Talk to an Eastman expert about introducing Eastar 6763 Renew as your sustainable medical packaging solution.



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