



danutips for Enteral Care

How Polyurethane and TRITAN™Are Advancing Enteral Devices

In the medical devices industry, excellence and innovation are paramount. We prioritize using top-tier materials to ensure product longevity and safe application.

Polyurethane (PU)

We choose Polyurethane over PVC for the tubing in our danumed® Extension Sets due to its exceptional qualities:

- ✓ **High biocompatibility:** PU is a biocompatible material, reducing the risk of adverse reactions and irritation, and making it ideal for long-term use.¹.².⁴
- ✓ No need for plasticizers: Unlike PVC, PU remains flexible and soft without harmful plasticizers like phthalates, preventing potential health risks for patients.^{5,6}
- ✓ Resistance to kinking: PU tubes are less likely to kink which is crucial for maintaining a consistent flow in enteral feeding.¹
- ✓ Durability and flexibility: PU retains its flexibility and elasticity over time while offering excellent tensile strength and elongation.^{1,3,7}
- ✓ Enhanced flow range: PU tubes have thinner walls than PVC tubes, allowing for a larger inner diameter and enhanced flow area for enteral feeds.¹
- ✓ Patient comfort: PU's softness and flexibility provide superior comfort, particularly for long-term or sensitive applications.¹⁴





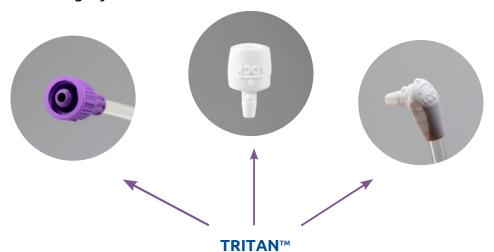


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TRITANTM

TRITAN™ is our material of choice for the core pieces of our enteral connectors because:

- **Durability:** It's a lightweight, robust plastic known for its resistance to aggressive solutions and medicines.8,9,10
- **Stress crack resistance:** TRITAN™ reduces the risk of stress cracks, supporting breakresistant use.8,9,10
- **Structural integrity:** It can withstand the rigors of daily use without compromising the device's structural integrity.^{8,9,10}



By carefully selecting materials like TRITAN™ and Polyurethane, we enhance the reliability, safety, and longevity of our danumed® products. These choices are crucial to protecting the health of vulnerable patients who depend on safe enteral applications for their nutritional and medical needs.

Disclaimer: This information is not a substitute for professional medical care. In case of problems, complications, or questions, always contact your medical professional.

References:

¹⁾ Dual-purpose gastric decompression and enteral feeding tubes rationale and design of novel nasogarstric and nasojejunal tubes; Silk David, Quinn David; Journal of Parenteral and Enteral Nutrition, Vol. 39 No. 5, 2015

²⁾ Biomedical Applications of Polyurethanes: A review of past promises, present realities and a vibrant future; Zdrahala Richard et. al., Journal of Bimaterials Applications, Vol. 14,

³⁾ Biomedical Applications of Polyurethanes; Bergeron Mylène, Guidoin Robert et. al., Chapter 8, 2001

⁴⁾ Carolyn Best (Nutrition Nurse Specialist, Royal Hampshire County Hospital, Winchester); Nursing Times (online), March 2019, Vol 115 Issue 3

⁵⁾ Ösophagusperforation und Pneumothorax - Komplikationen durch Legen einer Magensonde (Fallbericht); Tronnier V. et. al., Anästhesiol. Intensivmed. Notfallmed. Schmerztherapie 26, 1991

⁶⁾ Migration von Weichmachern aus PVC Schläuchen in enterale Nahrungslösungen; Welle Frank et. al., Pharma International 3/2005

⁷⁾ Evaluation of the elastic behaviour of central venous PVC, polyurethane and silicone catheters; Cervera M et. al., Phys. Med. Biol. Vol. 34, 1989

⁸⁾ Chemical compatibility with hospital disinfectants and oncology drugs, Eastman Brochure, September 2014

⁹⁾ Lipid and Isopropanol Resistance of Eastman Polymers in Medical Devices, Eastman Brochure, September 2007

¹⁰⁾ Redefining the balance between processability and chemical resistance, Eastman Brochure, February 2009