



**TOGETHER
TOWARDS
HEALTH**

RENOLIT Healthcare
**DRIVING THE PRESERVATION
OF SENSITIVE NUTRITIONS**

Total Parenteral Nutrition (TPN) Solutions



Rely on it.

OUR VISION

TOGETHER TOWARDS HEALTH

WE ENVISION ADVANCING HUMAN HEALTH FOR TODAY'S AND FUTURE GENERATIONS TOGETHER WITH OUR CUSTOMERS AND PARTNERS.

RENOLIT Healthcare
POLYMER SOLUTION PROVIDER

**ADVANCEMENTS IN
HUMAN HEALTH**
FOR TODAY'S AND FUTURE
GENERATIONS

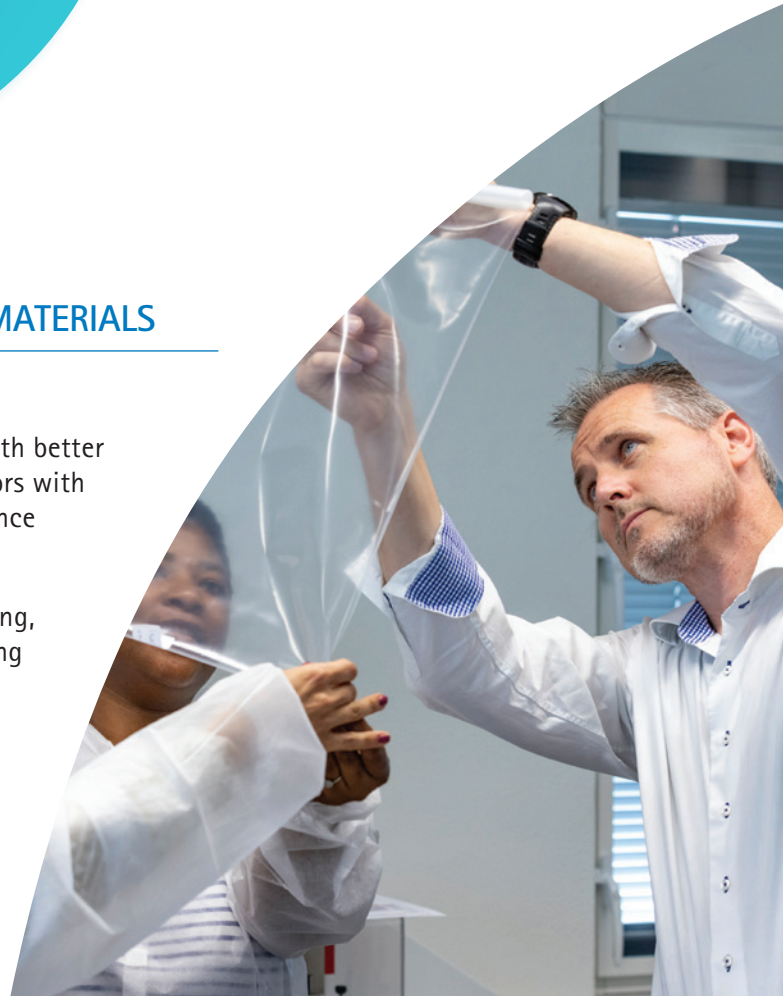
TOGETHER TOWARDS HEALTH

OUR CUSTOMERS & END-CUSTOMERS
WITH THEIR CHALLENGES & NEEDS

SHAPING HEALTH THROUGH INNOVATIVE MATERIALS

We believe that the foundation of better care begins with better materials. Our vision is to empower healthcare innovators with polymer solutions that improve patient outcomes, advance safety, and set new standards in medical performance.

Through continuous research, responsible manufacturing, and close collaboration with our partners, we are shaping the future of intravenous and parenteral care one innovation at a time.



OUR MISSION

AS A GLOBAL PARTNER OF THE HEALTHCARE MARKETS, WE COLLABORATE ON INNOVATIVE AND SUSTAINABLE POLYMER SOLUTIONS TO MAKE VITAL CONTRIBUTIONS TO HUMAN HEALTH.

As a roadmap toward our "Together Towards Health" vision, our mission is based on a strong foundation of four cornerstones: Cooperation, Innovation, Sustainability, and Global Partnership. These cornerstones are integral to our organization and our advanced polymer solutions.

COOPERATION



INNOVATION



SUSTAINABILITY



GLOBAL PARTNERSHIP



Our mission is to drive innovation in medical-grade polymer films and components for critical healthcare applications such as Total Parenteral Nutrition (TPN). By understanding the needs of patients, clinicians, and system manufacturers, we deliver materials that ensure sterility, performance, and regulatory confidence.

Our approach goes beyond supply. We collaborate, co-develop, and customize to bring life-sustaining solutions from concept to patient care.



ANTICIPATING CHANGE, DRIVING SOLUTION

The Total Parenteral Nutrition (TPN) market is evolving faster than ever, shaped by demographic shifts, rising chronic conditions, and the global call for more sustainable healthcare systems. At **RENOLIT** Healthcare, we don't just observe these changes; we help drive them.

KEY TRENDS SHAPING THE FUTURE

- » **Personalized nutrition and precision medicine** demand materials that enable patient-specific formulations and flexible bag configurations
- » **Digitalization and home-care expansion** call for packaging that integrates seamlessly with smart pumps and tele-health-supported therapy
- » **Regulatory and sustainability pressures** are steering the industry toward recyclable materials with transparent life-cycle data
- » **Global supply-chain resilience** requires partners who can guarantee consistent quality, compliance, and raw-material security worldwide

UNDERSTANDING EVERY LINK IN THE VALUE CHAIN

Our collaborations span the entire ecosystem from material converters, TPN bag producers, clinicians, hospital pharmacists, home-care providers, and even post-use processors. We understand that innovation must extend beyond the product to the entire life cycle from efficient manufacturing and safe use to responsible end-of-life handling.

OUR ROLE

By merging deep polymer expertise with a sustainability mindset, **RENOLIT** Healthcare provides future-ready materials that meet clinical, operations, and environmental demands alike. Through co-development, continuous feedback, and regulatory oversight, we ensure our partners are not just keeping pace with change but are also leading it.



DISCOVER MORE ABOUT OUR INNOVATIVE TPN FILMS

From barrier innovation to usability breakthroughs, each **RENOLIT** Healthcare film plays a crucial role in improving patient outcomes. By combining technical excellence with customer collaboration, we ensure every TPN solution, from design to delivery, supports safety, sustainability, and superior care.

RENOLIT MEDIPAK UVO →

Multilayer Barrier Material: Extended Shelf Life & Patient Safety

RENOLIT TPNPROTECT dual →

Multi-Chamber Material: Safety & Precision in Nutrition Delivery

RENOLIT TPNPROTECT UV shield →

Enhanced UV Protection for Light-Sensitive Formulations

ADVANCED MATERIALS FOR LIFE-SUSTAINING NUTRITION

RENOLIT Healthcare combines decades of polymer expertise with a deep understanding of parenteral nutrition therapy. Our TPN film portfolio ensures the highest safety, reliability, and performance standards from hospital compounding to home-care administration.

All **RENOLIT** Healthcare TPN films are produced in ISO 13485-certified clean-room environments, comply with GMP manufacturing principles, and meet international biocompatibility standards (USP <661>, <671>, ISO 10993).

RENOLIT MEDIPAK UVO MULTILAYER BARRIER MATERIAL

Ensuring Extended Shelf Life and Patient Safety

BENEFITS FOR CUSTOMERS AND PATIENTS

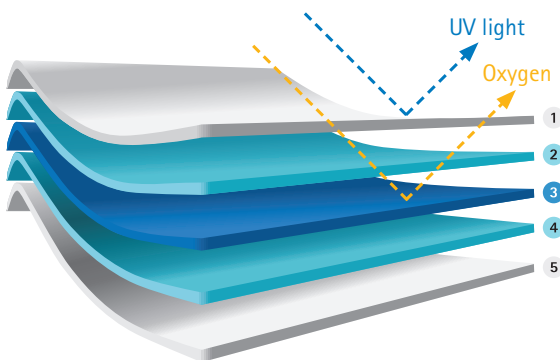
RENOLIT MEDIPAK UVO helps manufacturers guarantee the stability and sterility of single-chamber TPN bags. For clinicians and patients, it ensures nutrient integrity and longer shelf life, reducing the frequency of compounding and lowering risk of contamination.

TECHNICAL OVERVIEW

This multilayer co-extruded barrier film protects sensitive ingredients such as lipids and vitamins against oxygen ingress and UV exposure. The transparent yet robust structure simplifies visual inspection, while its excellent sealing behavior supports high-speed automated bag manufacturing.

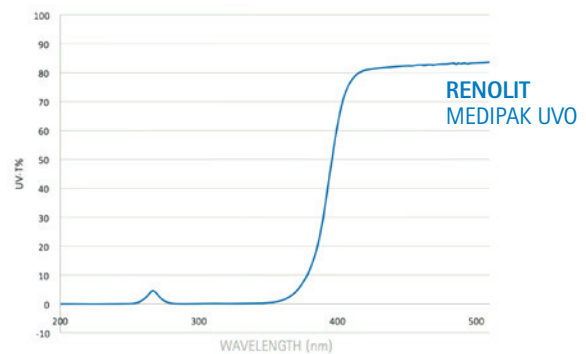


LAYER SCHEMATIC



- | | |
|------------------------|---|
| 1 EVA UV barrier layer | 4 Tie layer |
| 2 Tie layer | 5 EVA contact layer supporting clampable function |
| 3 Oxygen barrier layer | |

UV TRANSMISSION



RENOLIT MEDIPAK UVO MULTILAYER BARRIER MATERIAL

Ensuring Extended Shelf Life and Patient Safety

RENOLIT MEDIPAK UVO at a Glance

WHAT CUSTOMERS & PATIENTS NEED	PRODUCT FEATURES	THE BENEFIT
Protect vitamins & lipids from oxygen and UV	UV barrier + low oxygen permeability	Keeps nutrients stable and effective
Longer shelf life	Stable, multi-layer film structure	Extended product life*
High ingredient quality	Flexible, transparent material	Maintains safety and nutrient integrity
Easy processing	Designed for manufacturing efficiency	Simple and efficient to use
Reliable supply	Long-term material availability	No supply interruptions
Fewer daily preparations	Durable packaging	Saves time and reduces costs
Lower costs without risk	Regulatory-compliant design	Safe and cost-effective

Extended nutrient stability and reliable protection translate into improved logistics, fewer preparation steps, and safer patient outcomes.

* Stability/shelf life 1 week to 3 months depending on composition, with or without micronutrients.

Source: White, R. (2020). *Personalise Parenteral Nutrition and Licensed Product First*. CN, 20(1). British Specialist Nutrition Association (BSNA).

RENOLIT TPNPROTECT dual MULTI-CHAMBER MATERIAL

Convenience, Safety & Precision in Nutrition Delivery

BENEFITS FOR CUSTOMERS AND PATIENTS

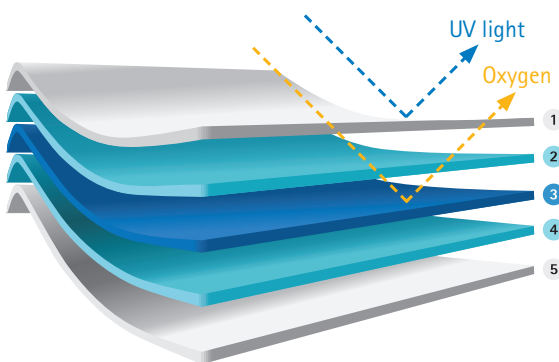
For manufacturers, RENOLIT TPNPROTECT dual streamlines multi-chamber bag production by enabling integrated compartment separation and on-demand mixing. For healthcare providers, it simplifies preparation and reduces handling risks. Patients benefit from precisely balanced, ready-to-infuse formulations with maximum freshness.

TECHNICAL OVERVIEW

The dual barrier layers concept combines independent barrier layers for oxygen and UV-light, supporting customizable chamber sizes and configurations. The separation of the bag into two chambers by a removable clamp allows secure storage and simple mixing by removing the clamp.

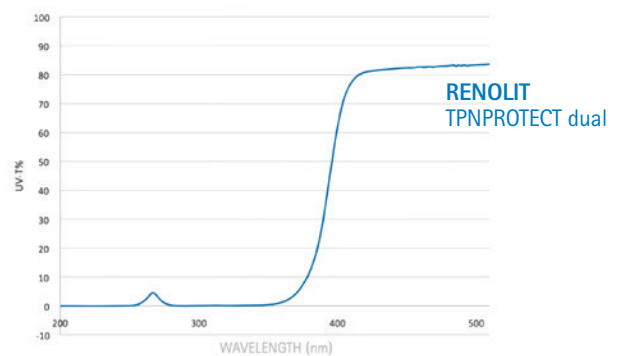


LAYER SCHEMATIC



- 1 EVA UV barrier layer
- 2 Tie layer
- 3 Oxygen barrier layer
- 4 Tie layer
- 5 EVA contact layer supporting clampable function

UV TRANSMISSION



RENOLIT TPNPROTECT dual MULTI-CHAMBER MATERIAL

Convenience, Safety & Precision in Nutrition Delivery

RENOLIT TPNPROTECT dual at a Glance

WHAT CUSTOMERS & PATIENTS NEED	PRODUCT FEATURES	THE BENEFIT
Protect vitamins & lipids from oxygen and UV	UV barrier + low oxygen permeability (2 cm ³ /m ² /day/bar)	Protects nutrients from oxidation & UV damage
Longer shelf life	Multi-chamber option + stable material	Shelf life extended up to one week*
Maintain ingredient quality	Low peroxide levels	Preserves nutrient integrity
Ready-to-use solutions for healthcare	Multi-chamber format with clamping	Faster, more convenient preparation
Avoid daily compounding	Durable, efficient packaging	Saves time and resources
Cost savings without compromising safety	Efficient design, compliant materials	Reduced costs with high safety standards

Secure separation, reproducible sealing, and simplified assembly deliver efficiency for manufacturers and reliability for clinicians.

* Stability/shelf life 1 week to 3 months depending on composition, with or without micronutrients.

Source: White, R. (2020). *Personalise Parenteral Nutrition and Licensed Product First*. CN, 20(1). British Specialist Nutrition Association (BSNA).

RENOLIT TPNPROTECT UV shield ENHANCED UV BARRIER SOLUTION

Protecting Light-Sensitive Nutrients

BENEFITS FOR CUSTOMERS AND PATIENTS

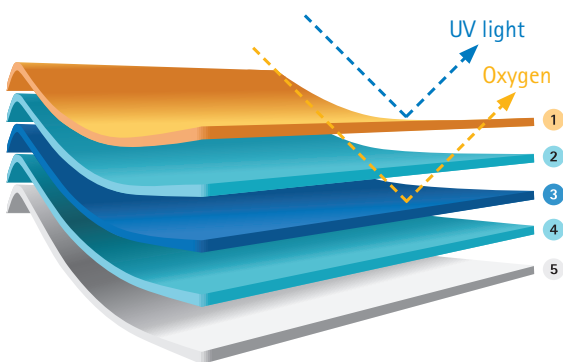
RENOLIT TPNPROTECT UV shield preserves delicate formulations by blocking harmful light exposure. For patients, this means every dose maintains its intended potency. For manufacturers, it ensures extended shelf stability and compliance with USP <671> for light-sensitive preparations.

TECHNICAL OVERVIEW

The film integrates a high-efficiency UV-absorbing layer that filters wavelengths up to 450 nm while maintaining excellent transparency and flexibility. It's optimized for single-chamber or multi-chamber bag systems where visibility and protection must coexist.

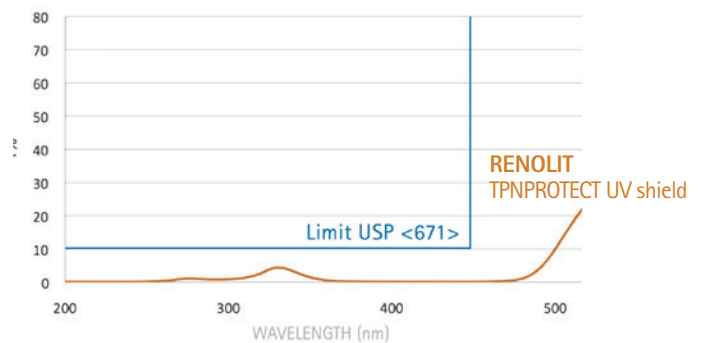


LAYER SCHEMATIC



- 1 Yellow EVA UV barrier layer
- 2 Tie layer
- 3 Oxygen barrier layer
- 4 Tie layer
- 5 EVA contact layer

UV TRANSMISSION



RENOLIT TPNPROTECT UV shield ENHANCED UV BARRIER SOLUTION

Protecting Light-Sensitive Nutrients

RENOLIT TPNPROTECT UV shield at a Glance

WHAT CUSTOMERS & PATIENTS NEED	PRODUCT FEATURES	THE BENEFIT
Protect vitamins (A, B2, C) from oxygen and UV	UV light protection (<10% transmission up to 450 nm)	Shields sensitive vitamins from degradation
Longer shelf life for premixed TPN	Oxidation protection + UV barrier	Extended TPN shelf life*
Maintain ingredient quality	Stable, protective material	Preserves nutrient quality
Ready-to-use solutions for healthcare	Functional design, easy handling	Fast and convenient use
Cost savings without compromising safety	Efficient protection system	Lower cost with reliable safety

Superior UV blocking preserves nutrient efficacy, extends shelf life, and offers transparent assurance of safety.

* Stability/shelf life 1 week to 3 months depending on composition, with or without micronutrients.

Source: White, R. (2020). *Personalise Parenteral Nutrition and Licensed Product First*. CN, 20(1). British Specialist Nutrition Association (BSNA).

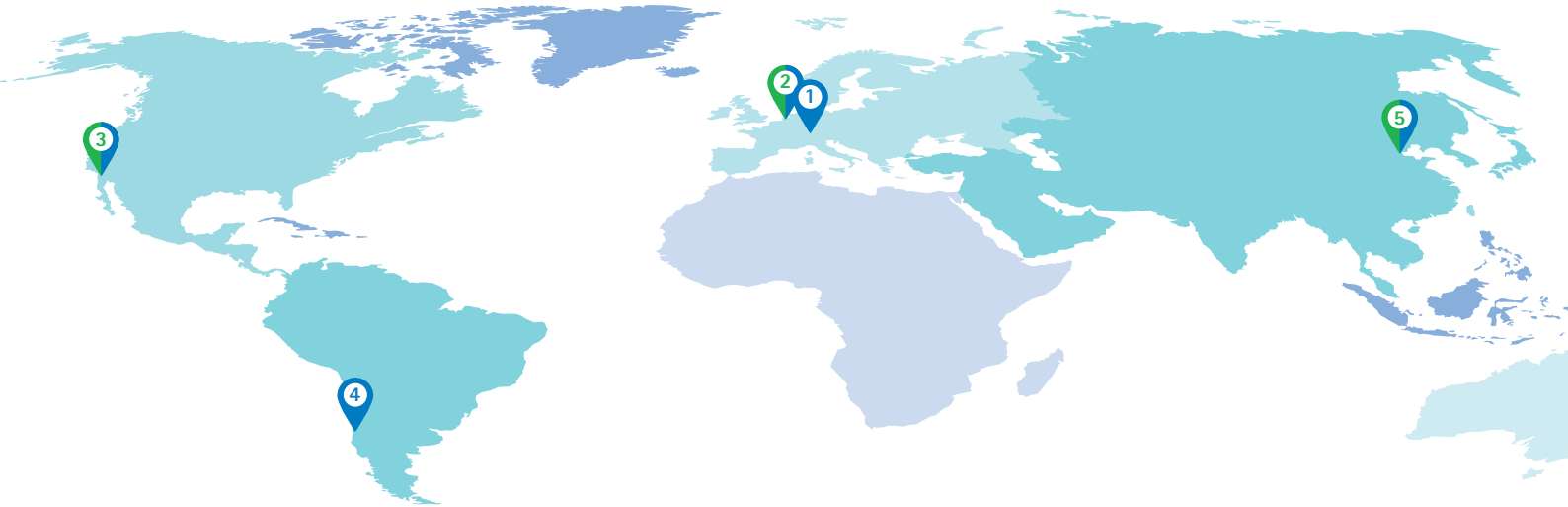
OUR CURRENT AND FUTURE HEALTHCARE PRODUCT PORTFOLIO

Our goal is to drive innovation in medical-grade polymer films and components for critical healthcare applications, such as Total Parenteral Nutrition (TPN), by understanding the needs of patients, clinicians, and system manufacturers. This insight allows us to deliver materials that ensure sterility, reliable performance, and regulatory confidence.

As the world's leading developer and producer of high-value medical-grade polymer solutions including films, tubes, and granules, our portfolio extends far beyond TPN. **RENOLIT** Healthcare's solutions span nine fields of application and three complementary product offerings. Our services include custom-made formulations, tailor-made films, and EMT equipment leasing.

FIELDS OF APPLICATION			COMPLEMENTARY	SERVICES
				
BLOOD & BLOOD COMPONENTS	IV & PHARMACOLOGICAL APPLICATIONS	ORTHOPEDIC IMPLANTS	PORTS & CAPS	CUSTOM-MADE SOLUTIONS
				
BIOTECHNOLOGY	DIALYSIS	3D FILAMENTS	BARRIER FILMS & SECONDARY PACKAGING	TAILOR-MADE FILMS
				
NUTRITION	OSTOMY	FOOD	GRANULES	EMT EQUIPMENT LEASE

RENOLIT Healthcare – GLOBAL PRESENCE AND GLOBAL RAW MATERIAL SOURCING FOR GLOBAL CUSTOMERS



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DISCLAIMER

The data contained in this document are provided in good faith for the sake of general information. It is deemed to be accurate at the time of going to press.

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RENOLIT TPNPROTECT easypeel (7150)

PEELABLE-SEAL INNOVATION

Optimizing Performance and Cost for Manufacturers and Patients

BENEFITS FOR CUSTOMERS AND PATIENTS

RENOLIT TPNPROTECT easypeel modernizes multi-chamber design by replacing mechanical clamps with a controllable peel seal. Manufacturers gain reduced material and production costs, while nurses and patients enjoy effortless, safe nutrient mixing especially beneficial in home-care settings.

TECHNICAL OVERVIEW

The film employs a multilayer architecture with a tailored peelable interface that remains secure during storage yet opens smoothly under manual pressure. Integrated oxygen and UV barriers maintain the same protection levels as other TPNPROTECT grades.

RENOLIT TPNPROTECT easypeel shield at a Glance

WHAT CUSTOMERS & PATIENTS NEED	PRODUCT FEATURES	THE BENEFIT
Protect vitamins & lipids from oxygen and UV	UV barrier + low oxygen permeability ($___ \text{cm}^3 / \text{m}^2 / \text{day} / \text{bar}$)	Protects sensitive ingredients from degradation
Longer shelf life of TPN solutions*	Multilayer structure + stable functionality	Extended shelf-life protection*
Maintain ingredient quality	Flexible, transparent, safe materials	Enhanced safety & nutrient integrity
Ready-to-use solutions for healthcare	Instant mixing – no clamps required	Easier use for patients and nurses

RENOLIT TPNPROTECT easypeel (7150)

PEELABLE-SEAL INNOVATION

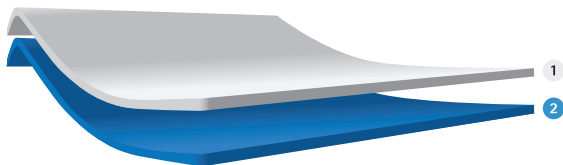
Optimizing Performance and Cost for Manufacturers and Patients

RENOLIT TPNPROTECT easypeel shield at a Glance

WHAT CUSTOMERS & PATIENTS NEED	PRODUCT FEATURES	THE BENEFIT
Avoid daily compounding	Pre-designed chambers, flexible sizing	Saves time and improves workflow
	Regulatory-compliant materials	Meets safety and compliance standards
	Improved design options	Greater flexibility for product development
	Optimized supply chain	Better logistics and planning

By simplifying the multi-chamber system, **RENOLIT TPNPROTECT easypeel** improves usability, lowers environmental impact, and ensures safe, consistent performance for every user.

LAYER SCHEMATIC



- 1 EVA outer layer
- 2 EVA contact layer supporting peelable seal function