

SELECTION GUIDE

FORMERRA HEALTHCARE SOLUTIONS

Pharmaceutical
and Medical
Device Packaging



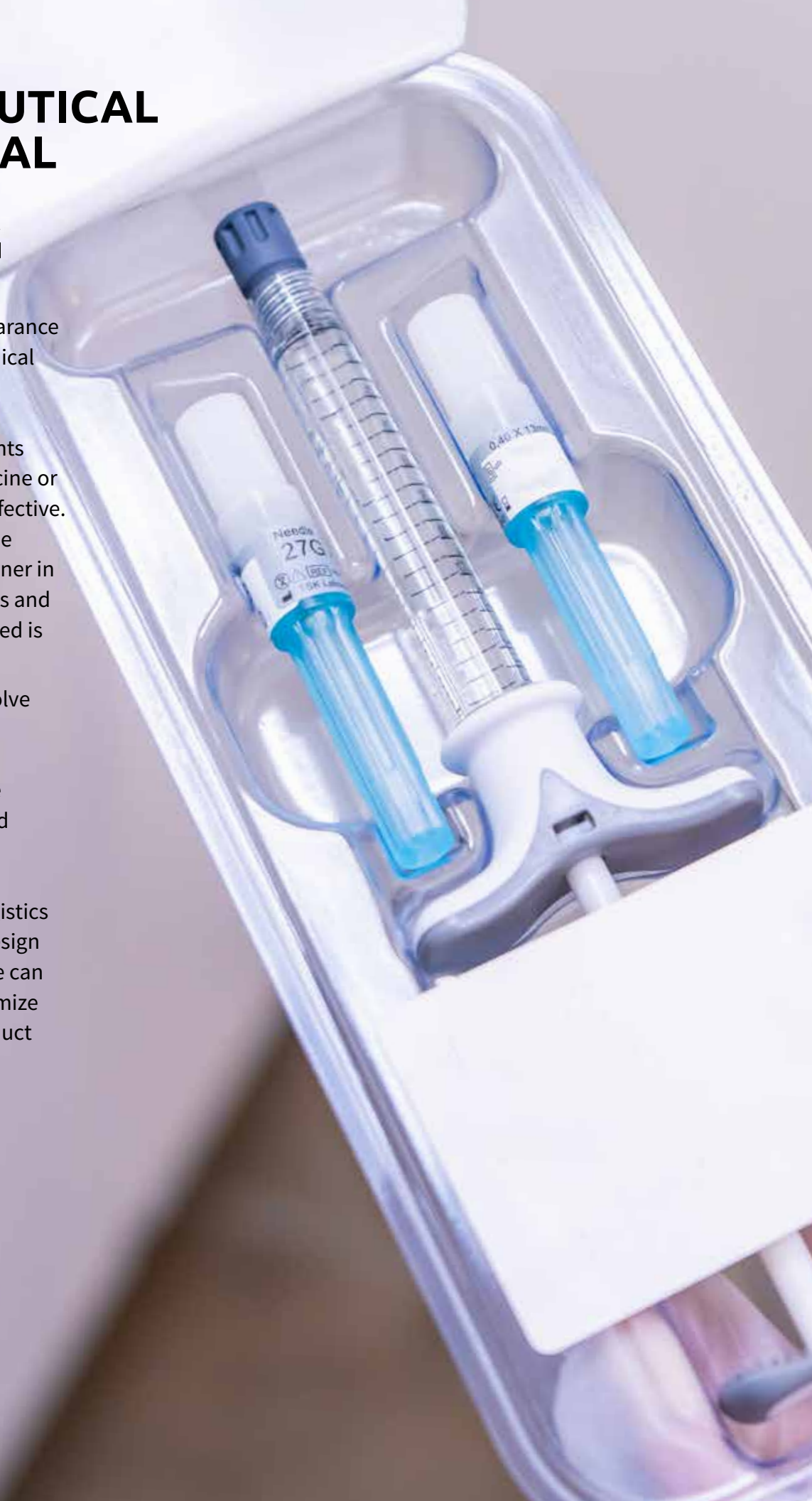
MORE THAN
MATERIALS

 Formerra™

PHARMACEUTICAL AND MEDICAL DEVICE PACKAGING

The functionality and appearance of pharmaceutical and medical device packaging provides assurance to physicians, healthcare providers, patients and caretakers that a medicine or device is safe, sterile and effective. Despite the medical or home healthcare setting, the manner in which pharmaceutical drugs and medical devices are packaged is critically important.

At Formerra, we help you solve your toughest application challenges by providing a specialized approach to the latest material, colorant and additive technologies. With a dedication to sustainable solutions, technical and logistics expertise and innovative design engineering capabilities, we can help you mitigate risk, optimize design, and accelerate product commercialization.



PHARMACEUTICAL AND MEDICAL DEVICE PACKAGING

Applications include:

- Pre-filled flush syringes
- Caps and closures
- Blow molded bottles
- Pharmaceutical vials
- Sterilization trays and mats
- Pouches

Packaging Solution Needs:

- Materials compliant with ISO 10993 & USP Class VI, if required
- Increased assurance of sterility
- Excellent barrier resistance to avoid leaching
- Superior impact resistance to protect medical devices and drug solutions
- Chemical resistance levels aligned with specific application requirements
- Additives and colorants designed for healthcare packaging applications

Polypropylene

| | |
|-----------------------------------|---|
| LyondellBasell Pro-fax™ & Purell™ | Family of homopolymers, copolymers, clarified resins and random copolymers offered in a variety of radiation resistant, heat stable and nucleated grades |
| INVISTA PP | Family of homopolymers, copolymers, clarified resins and random copolymers with autoclavable, heat stabilized, animal-free and radiation-resistant grades |
| INEOS Olefins & Polymers USA PP | Family of homopolymers, copolymers, clarified resins and random copolymers with different melt ranges |
| Pinnacle Polymers PP | Family of homopolymers, copolymers, clarified resins and random copolymers with emphasis on good processing stability, low extractables and autoclavable grades |
| GEON Performance Solutions PP | Compounded products with mineral or glass that emphasize impact resistance, durability, heat resistance, stiffness, UV/heat stabilization |

Polystyrene

| | |
|---------------|--|
| AmSty Styron™ | Family of general purpose and high impact polystyrene available with excellent dimensional stability, toughness, gloss, processability and impact resistance |
|---------------|--|

Polyethylene

| | |
|---------------------------|---|
| Chevron Phillips Marlex® | Family of HDPE, LDPE and LLDPE with moderate flow, excellent impact strength, good stiffness and durability |
| Dow DOWLEX™ | Family of LLDPE with grades focusing on impact and abrasion resistance, durability, puncture and tear resistance and UV and water/moisture resistance |
| Dow ENGAGE™ | Family of polyolefin elastomers with excellent impact resistance, flexibility, toughness and processing characteristics |
| Dow HEALTH+™ | Family of HDPE, LDPE and LLDPE with low melt index, outstanding flexibility, excellent toughness and high purity grades |
| LyondellBasell Alathon™ | HDPE resins commonly used in pressure pipe and blown film, general purpose and thin-wall injection molding grades, and blown film grades known for their moisture barrier performance |
| LyondellBasell Petrothene | Family of HDPE, LDPE and LLDPE typically used in film with good processability, impact and clarity |
| LyondellBasell Purell™ | Family of HDPE and LDPE grades with high fluidity, very good transparency, good impact strength and excellent processability |
| Westlake Chemical PE | Family of low density copolymers, linear low density plastomers, functionalized polymers and waxes for flexible packaging, extrusion coating and niche markets |



FORMERRA

Healthcare Supplier Line Card

You face a unique set of challenges when designing parts for the healthcare industry. In addition to maintaining an effective manufacturing and supply chain operation, you're challenged with designing products that must meet strict regulatory and quality assurance standards. At Formerra, we help you achieve these goals with our comprehensive portfolio of leading suppliers, on-time delivery and a host of services focused on helping you succeed.



FORMERRA HEALTHCARE SOLUTIONS



formerra.com

At Formerra, we're prepared to help you:

- Mitigate risk
- Optimize design
- Accelerate commercialization

Contact us today to learn more about how we can help you overcome your toughest challenges.

PHARMACEUTICAL AND MEDICAL DEVICE PACKAGING

Healthcare packaging has a variety of unique needs. Pre-filled flush syringes benefit from barrier resistance properties, while caps and closures focus on child-resistant and senior-friendly designs. Pharmaceutical vials require outstanding clarity, while blow molded bottles are often associated with high impact resistance. No matter the application or the need, Formerra can help you select the right polymers, colorants and additives for your application.

- Pre-filled flush syringes
- Caps and closures
- Blow molded bottles
- Pharmaceutical vials
- Sterilization trays and mats
- Pouches

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