Formerra





Product Selection Guide

FORMERRA HEALTHCARE SOLUTIONS

Drug Delivery Devices

Formerra.com

Drug Delivery Devices

Healthcare professionals and patients use drug delivery devices every day to administer IV therapy, inhalations and injections. Performance and reliability is paramount, as these devices are becoming more complex pushing device developers to create new delivery methods geared towards ease of self-dosing and patient regimen adherence.

If your goal is to select the perfect material for rigid and flexible components of your medical devices, you're in the right place. Formerra can help you solve your toughest application challenges by providing a specialized approach to the latest material, colorant and additive technologies. Our skilled healthcare team is committed to help you mitigate risk, optimize design and accelerate product commercialization.



Our Suppliers

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.

AmSty

AVIENT

Celanese
The chemistry inside innovation™

covestro

DOW

DUPONT

EASTMAN

GEON
Performance Solutions

INEOS Olefins & Polymers USA

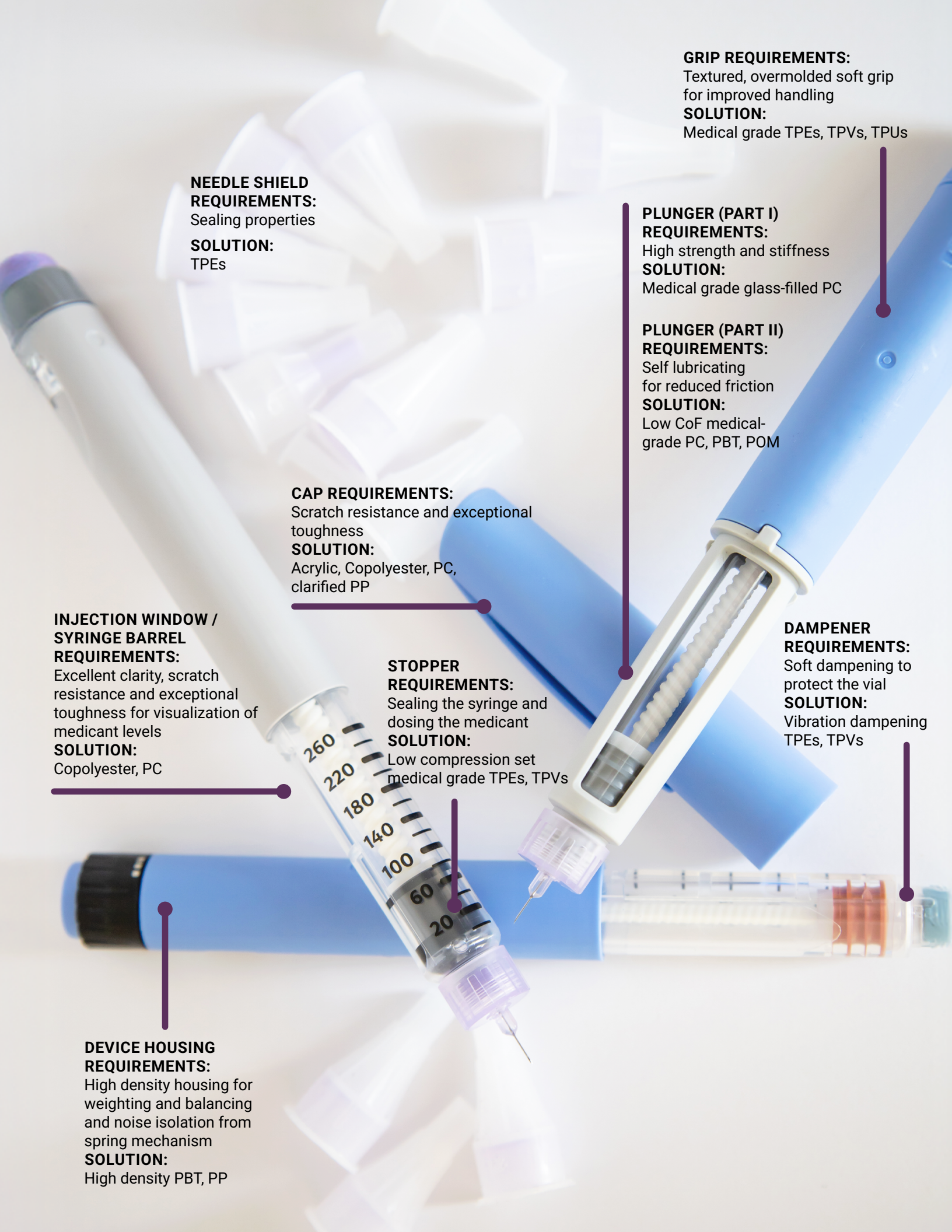
INEOS Styrolution

INVISTA™
POLYPROPYLENE

lyondellbasell

Pinnacle Polymers

TRINSEO



GRIP REQUIREMENTS:
Textured, overmolded soft grip for improved handling
SOLUTION:
Medical grade TPEs, TPVs, TPUs

NEEDLE SHIELD REQUIREMENTS:
Sealing properties
SOLUTION:
TPEs

PLUNGER (PART I) REQUIREMENTS:
High strength and stiffness
SOLUTION:
Medical grade glass-filled PC

PLUNGER (PART II) REQUIREMENTS:
Self lubricating for reduced friction
SOLUTION:
Low CoF medical-grade PC, PBT, POM

CAP REQUIREMENTS:
Scratch resistance and exceptional toughness
SOLUTION:
Acrylic, Copolyester, PC, clarified PP

INJECTION WINDOW / SYRINGE BARREL REQUIREMENTS:
Excellent clarity, scratch resistance and exceptional toughness for visualization of medicant levels
SOLUTION:
Copolyester, PC

STOPPER REQUIREMENTS:
Sealing the syringe and dosing the medicant
SOLUTION:
Low compression set medical grade TPEs, TPVs

DAMPENER REQUIREMENTS:
Soft dampening to protect the vial
SOLUTION:
Vibration dampening TPEs, TPVs

DEVICE HOUSING REQUIREMENTS:
High density housing for weighting and balancing and noise isolation from spring mechanism
SOLUTION:
High density PBT, PP

Rigid Components
IV Therapy, Inhalation & Injection

Applications include:

- IV y-sites
- Drip chambers
- Syringe bodies
- Valves
- Luers
- Spikes
- Caps
- Plungers
- Gears
- Actuators

Rigid Component Solution Needs:

- Materials compliant with ISO 10993 & USP Class VI, if required
- Devices resistant to cracking with exposure to lipids, drugs &/or hand oils
- Components that retain mechanical & aesthetic integrity after sterilization
- Components that exhibit long-lasting bond strength
- High quality resins with proven performance in drug delivery devices

Copolyester, PBT & PC/PET Blends		
Copolyester	Eastman Tritan™ (Copolyester)	High chemical resistance to oncology drugs and carrier solvents, lipids, and disinfectants; clarity; no color shift after gamma/e-beam sterilization; free of BPA, BPS, halogens; high bond strength to tubing
Polybutylene Terephthalate (PBT)	Celanese Crastin® (PBT)	Excellent surface appearance; good printability; low extractables and volatiles; excellent gamma sterilization performance; good chemical resistance; alternative to nylon for low moisture uptake and dimensional stability; low wear/low friction
Polycarbonate/Polyester (PC/PET)	Trinseo EMERGE™ (PC/PET)	Chemical resistance to hospital disinfectants; UL94 V-0 and HB options; ISO 10993 tested
Non-FR PC/Polyester	Covestro Makroblend® (Non-FR PC/Polyester)	Opaque; high strength; excellent toughness; chemical resistance; skin contact biocompatibility
PC & PMMA		
Polycarbonate (PC)	Covestro Apec® (PC)	High-heat transparent, strong co-polycarbonate; suitable for autoclave sterilization; good hydrolysis resistance; biocompatible
	Covestro Makrolon® (PC)	Transparent and opaque; excellent impact resistance; low friction, glass-filled and lipid resistant options; sterilizable by gamma, EtO, e-beam and steam; biocompatible per ISO 10993-1 and USP Class VI
	Trinseo CALIBRE™ & CALIBRE™ MEGARAD™ (PC)	Transparent and opaque; lipid and gamma resistant options; sterilizable by gamma, e-beam, and EtO; animal-derivative free and ISO 10993 tested
PolyMethyl Methacrylate (PMMA)	Trinseo Plexiglas® SG Acrylics (PMMA)	Water-white clarity, transparency, BPA free and ease of processing; excellent resistance to lipids and plasticizers, withstands sterilization to disinfectants such as bleach and alcohols; select grades are formulated for gamma sterilization recovery and chemical resistance; ISO 10993 and USP Class VI tested
PA (Nylon), Rigid TPU & Rigid PVC & PVC Blends		
Polyamide (Nylon, PA)	Celanese Zytel® (PA66)	Good toughness; chemical resistance and colorability; excellent stiffness and strength; acceptable EtO, gamma, e-beam, and autoclave sterilization
	Celanese Zytel® (PA612)	Good toughness and colorability; acceptable EtO and autoclave sterilization (limited gamma/e-beam sterilization performance); improved dimensional stability; chemical resistance; reduced aqueous extractables versus PA66
Rigid Thermoplastic Polyurethane (TPU)	Covestro Texin® (TPU)	Biocompatible; excellent chemical resistance; bondable to polar substrates like PC; sterilizable by gamma, EtO, e-beam and dry heat; rigid 65 to 80 Shore D grades
Rigid Polyvinyl Chloride (PVC)	GEON Performance Solutions Resilience™ HC (PVC)	Excellent chemical resistance; physical integrity after chemical/cleaner exposure; inherently flame retardant; color branding available; excellent solvent bonding to PVC tubing
Rigid Polyvinyl Chloride/ABS (PVC/ABS)	GEON Performance Solutions Geon® HTX™ (PVC/ABS)	High temperature resistance; excellent chemical resistance; physical integrity after chemical/cleaner exposure; inherently flame retardant; color branding available; excellent solvent bonding to PVC tubing

Rigid Components
IV Therapy, Inhalation & Injection

Applications include:

- IV y-sites
- Drip chambers
- Syringe bodies
- Valves
- Luers
- Spikes
- Caps
- Plungers
- Gears
- Actuators

Rigid Component Solution Needs:

- Materials compliant with ISO 10993 & USP Class VI, if required
- Devices resistant to cracking with exposure to lipids, drugs &/or hand oils
- Components that retain mechanical & aesthetic integrity after sterilization
- Components that exhibit long-lasting bond strength
- High quality resins with proven performance in drug delivery devices

Styrenics & PC/ABS Blends

Styrenics	Trinseo MAGNUM™ (ABS)	Opaque; custom colors; excellent impact and flow; low residuals; ISO 10993 tested
	INEOS Styrolution NAS® (SMMA)	Sparkling clarity; color neutrality; good rigidity; easy processing; no pre-drying needed; excellent alcohol resistance
	INEOS Styrolution Zylar® & Clearblend® (MBS)	Exceptional toughness; excellent clarity; low specific gravity; no pre-drying needed; excellent thermal stability; superior chemical resistance
	INEOS Styrolution Lustran® (SAN)	Rigid; heat resistant; outstanding transparency; good overall chemical resistance; superior processing; good scratch resistance
	INEOS Styrolution Styrolux® (SBC)	Good transparency and excellent toughness; easy and versatile processing; great for adding toughness to styrenic polymer blends
	INEOS Styrolution Terlux® HD (MABS)	Good clarity; good heat and overall chemical resistance; good impact strength; good solvent bonding to PVC; outstanding surface quality
	INEOS Styrolution Lustran® & Novodur® HD (ABS)	Opaque appearance; outstanding chemical resistance; high impact strength; excellent balance of properties; ease of processability; bondable
Polycarbonate/ABS (PC/ABS)	Covestro Bayblend® (PC/ABS)	Opaque; excellent mechanical and thermal properties; toughness; rigidity; dimensional stability; easy processing; sterilizable by gamma, e-beam and EtO; biocompatible per ISO 10993-1 and USP Class VI
	Trinseo EMERGE™ (PC/ABS)	Opaque; high toughness; high flow; easy processing; sterilizable by gamma, e-beam, and EtO; ISO 10993 tested

POM (Acetal), PP & PE

Polyoxymethylene (Acetal, POM)	DuPont™ Delrin® (POM)	Excellent low wear/low friction; excellent surface appearance; good chemical resistance; alternative to nylon for low moisture uptake and dimensional stability; acceptable for EtO and autoclave sterilization (not recommended for gamma/e-beam sterilization)
Polypropylene (PP) & Polyethylene (PE)	INVISTA™ (PP)	Good strength and stiffness; easy processing; sterilizable grades available
	Pinnacle™ (PP)	
	Dow™ HEALTH+ Polymers™ (PE)	
	Lyondellbasell™ (PP) & (PE)	

Flexible Components

IV Therapy, Inhalation & Injection

Applications include:

- O-rings
- Plunger seals
- Gaskets
- Spring seals
- Soft-touch overmolds

Flexible Component Solution Needs:

- Materials compliant with ISO 10993 & USP Class VI, if required
- Optimum sealing force & compression set for gaskets & valves
- Comfortable, easy to hold & operate devices
- Flow control

TPE, TPC-ET, TPU, TPV & Flexible PVC

Thermoplastic Elastomers (TPE)	Avient Versaflex™ HC Series (TPE)	Proven healthcare solutions with hardness ranges 23–90 Shore A; autoclave, radiation and EtO sterilizable; good ambient and elevated compression set properties
	Avient Versaflex™ HC Overmolding Series (TPE)	Proven healthcare solutions with hardness ranges 42–65 Shore A; autoclave, radiation and EtO sterilizable; bondable to PC, ABS, PVC, COPE, PP, HIPS and others
Thermoplastic Polyester Elastomers (TPC-ET)	Celanese Hytrel® (TPC-ET)	BPA-free; excellent flex fatigue and toughness; low temperature flexibility; good chemical resistance
Thermoplastic Polyurethane (TPU)	Avient NEU™ Specialty Engineered Materials (TPU)	Biocompatible; various durometer ranges; autoclave, radiation and EtO sterilizable
	Covestro Texin® (TPU)	Biocompatible; soft touch; sterilizable; good chemical and abrasion resistance and toughness; excellent bonding to polar substrates like PC; 70 to 95 Shore A grades
Thermoplastic Vulcanizate (TPV)	Avient Versalloy™ (TPV)	Proven healthcare solutions with hardness ranges 45–90 Shore A; autoclave, radiation and EtO sterilizable; natural and colorable; smooth texture; bonds to PP
	Celanese Santoprene™ (TPV)	Durable sealing performance; elastic recovery; excellent chemical resistance; compliance with medical standards
Flexible Polyvinyl Chloride (PVC)	GEON Performance Solutions Geon™ Flexible PVC	Engineered exclusively for the healthcare market; transparent and opaque colors; radiopaque grades available; durometer range from 55A to 40D; gamma and EtO sterilizable

Thermoset Silicone Elastomers

Thermoset Silicone Elastomers/Liquid Silicone Rubber (LSR)	DuPont™ Liveo™ Silicone Elastomers	Biocompatible; non-irritating and non-sensitization; sterilizable; made without plasticizers, phthalates or latex

SBC

Styrene Butadiene Copolymer (SBC)	INEOS Styrolution Styroflex® (SBC)	Rubber-like mechanics; outstanding resilience; toughness and transparency; extremely high elasticity; excellent bonding to other polymers

When it comes to administering life-saving drugs, your devices need to properly perform every time. With the right polymers, your devices will not only resist cracking, but can also bring greater comfort to both the patient and physician.

- IV y-Site
- Luers
- Needleless Valves
- Stopcocks & Connectors
- Drip Chambers
- Syringes
- Inhalers
- Injector Pens





Formerra™

Better
•
Faster
•
Smarter

Formerra+™

Evolve How You Work With Formerra+

Formerra+ is our newly upgraded personalized online experience, designed to save time and simplify your workday.

Registered users get access to:

- Real-time pricing
- Interactive tools for seamless order management
- Instant transparency into order tracking, history and updates
- AI-powered, personalized product recommendations
- Hassle-free customer service, and more

Shop.Formerra.com

Take The Next Step

Visit **Formerra.com** to:

- Explore solutions by material properties, industries, and suppliers
- Register for an account to gain access to personalized information, ordering, and more!

We're Here To Help

For general inquiries or customer service
Call **1.888.502.0951**

Contact Us

Capabilities

Design Support

Market Intelligence

Material Selection

Custom Formulations

Manufacturing Optimization

Technical Support

Supply Chain Optimization

Regulatory Compliance Support

Global Reach

Copyright © 2026, Formerra, LLC. All the information in this literature is for general information purpose only. Formerra makes no representations, guarantees, or warranties of any kind with respect to the information contained in this literature, including its accuracy, completeness, reliability, suitability for particular applications, or the results obtained or obtainable using the information. Some of the information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for pricing, property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the information. Formerra makes no warranties or guarantees respecting suitability of either Formerra's products or the information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the information and/or use or handling of any product. FORMERRA MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the information or products reflected by the information. This literature or any other provided literature shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner. Any action you take upon the information you find in this literature is strictly at your own risk. Formerra will not be liable for any losses and/or damages in connection with the use of this literature. By using this literature, you hereby consent to this disclaimer and agree to its terms.