





AUTOMOTIVE TRENDS & MARKET DYNAMICS

The automotive industry is experiencing rapid change and innovation. OEMs and Tier Suppliers are driving towards a new future. Autonomous and electric vehicles are quickly becoming commonplace, and sustainability efforts, including lightweighting and reduced volatile organic compound emissions, are a critical focus. Vehicles have more luxury features than ever before—from infotainment and ambient lighting, to beautifully designed interiors with harmonized color palettes and soft-touch haptics. Plastics can help bring next-generation vehicle designs to reality, helping design engineers and processors achieve their key objectives from concept to commercialization.

AUTOMOTIVE FOCUS AREAS

As new vehicle trends and innovations emerge, our 30+ years of material expertise and technical knowledge can deliver transportation components to the market quickly and efficiently. We regularly study market drivers and trends, including those that influence key automotive segments such as:

- Lighting
- Interior
- Exterior
- Under the Hood
- Advanced Mobility



HOW CAN WE HELP YOU SUCCEED?

At Formerra, we understand the challenges you face. Our comprehensive portfolio of polymers, colorants, additives and services is focused on a single goal—helping you innovate and succeed. Whether you're an OEM, Tier 1 supplier or molder, we have resources and capabilities to help you from design, development and manufacturing, to supply chain optimization.

BY CHEMISTRY

| | | | | FOCUS APPLICATIONS | | | | |
|--|-------------------|---|---|--------------------|----------|----------|----------------|-------------------|
| PRODUCT FAMILY | SUPPLIER | PRODUCT NAME | PRODUCT DESCRIPTIONS AND TYPICAL APPLICATIONS | LIGHTING | INTERIOR | EXTERIOR | UNDER THE HOOD | ADVANCED MOBILITY |
| Acetal (POM) | DuPont | Delrin® | High strength, rigidity and toughness. Used in gears, seat belt buckles, housings, latches, parts needing lubricity, and wear-resistant surfaces. | x | x | x | x | x |
| Acrylic (PMMA) | Trinseo | Plexiglas® | Transparent, rigid thermoplastic used as a shatterproof replacement for glass. UV & abrasion-resistant, excellent light transmission used in lenses (headlights, tail lights, turn signals, instrument clusters, autonomous driving sensors, etc.), mirror housings, interior lighting, instrument panel optics, lightpipes, pillar/spoiler trim, badging, style lighting, light guides, reflectors, interior/exterior lighting, bumpers and fenders. | x | x | x | | x |
| | | Plexiglas® Frosted Plexiglas® Reflect™ | | x | x | | | |
| Acrylonitrile Butadiene Styrene (ABS) | INEOS Styrolution | Lustran® | Opaque thermoplastic and amorphous polymer with strong corrosion and impact resistance. Used in door switch bezels, badging, trim (door panels, chrome-plated interior, sill plate, etc.), center console trays, mirror skull caps and exterior light housings. | x | x | x | | x |
| | | Novodur® | | x | x | x | x | x |
| | Trinseo | Terluran® MAGNUM™ | | | x | x | | |
| ABS Blends | INEOS Styrolution | Terblend® N, Triax® | Enhanced processability, good flow characteristics, strength, stiffness and good heat resistivity plastic used in electrical device housings, automotive interior components, truck cabin components. | | x | | | x |
| Acrylonitrile Styrene Acrylate (ASA) | INEOS Styrolution | Luran® S | Amorphous thermoplastic with improved weather resistance used in fascia brackets, mirror housings, grille carriers, fog light bezels, pillar trim, hood vents, emblems, roof rails, upper and lower spoilers (painted and unpainted), door panel trim, seat trim, 3D printed parts, etc. | x | x | x | x | x |
| | LyondellBasell | Centrex® | | | x | x | | |
| ASA Blends | INEOS Styrolution | Terblend® S | Characterized by their excellent impact strength and heat stability, similar to PC/ABS compounds. The ASA component, however, features superior UV stability which makes them well-suited for interior and exterior trim components. Offers good flow, high sound-absorption, enhanced impact strength and excellent chemical resistance. | | x | | | x |
| | LyondellBasell | Centrex® | | | x | x | | |
| Bio-Fiber Reinforced Thermoplastic Polyolefin (TPO) | RheTech, Inc. | RheVision | Bio-fiber reinforced thermoplastic compounds, used in various interior applications. | | x | | | x |

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| Color, Additives & Inks | Avient | CESA™ | Portfolio of polymer additives which enhance part performance, improve manufacturing efficiency, reduce manufacturing downtime and enable smooth product transitions. Also includes a wide variety of color match and mold in color options for enhanced interiors, effects and other unique characteristics. | | | X | | | | | |
| | | ColorMatrix™ Excelite™ | | | X | | | | | | |
| | | Hydrocerol™ | | | X | X | | | | | |
| | | OnColor™ | | | X | X | | | | | |
| | | Remafin™ | | | X | | X | | | | |
| | | Renol™ | | | X | X | X | | | | |
| | | Smartbatch™ | | | X | X | | | | | |
| | | Smartbatch™ FX | | | X | X | X | | | | |
| High Density Polyethylene (HDPE) Compounds | GEON Performance Solutions | GEON® | HDPE is known for its large strength-to-density ratio and is used to manufacture batteries, different kinds of tanks (oil, brake fluid, washer fluid, etc.), interior linings, bumpers, seats, storage inner compartments, trims, and other accessory components, including inner and outer protective covers and fixing elements. | | X | | | | | | |
| | Chevron Phillips | Marlex® | | | X | | X | | | | |
| | Dow | Dowlex® | | | X | | X | | | | |
| Masterbatch | DuPont | Siloxaine Masterbatch | Additive to aid with part release from mold, material flow and adding lubricity to parts, anti-scratch for vehicle interior components. | | X | | | | | | |
| Nylon (PA 6, PA 66, PA 66/6, PA 66/6T, PA 612, PA 11, PA 12, PA 1010) | Avient | Nymax™ | Good chemical and temperature resistance; provides strength, toughness, and stiffness; and resists wear and abrasion. Used in applications such as intake manifolds, radiator end tanks, engine covers and shrouds, air ducts, underhood enclosures, motor encapsulations, thermostat housings, fuel cut off valves, solenoid encapsulations, air cleaner boxes, electrical connectors and sensor bodies. | | X | X | X | | | | |
| | | Nymax™ PIR | | | X | X | X | | | | |
| | | reSound™ R ND | | | X | | | | | | |
| | DuPont | Zytel® | | | X | X | X | | X | | |
| | | | | | X | X | X | | X | | |
| | | | | | X | X | X | | X | | |
| | | | | | X | X | X | | X | | |
| | | | | | X | X | X | | X | | |
| Polycarbonate (PC) & PC Blends (PC+ABS, PC+ASA, PC+SAN, PC+PBT, PC+PET, PC+TPU) | Covestro | Bayblend® | Strong, tough materials and some grades are optically transparent. They are easily worked, molded, and thermoformed and used in headlight assemblies, impact resistant body panels, small windows, door panel and exterior trim, multi-function displays, heat stakes (TC), car bumpers, molded in color interior components, battery modules, roof trim, seat back trim panels, bezels, heat sinks, signature lighting and more. | X | X | X | | X | | | |
| | | Makroblend® | | | | X | | X | | | |
| | | Makrolon® | | | X | X | X | X | | | |
| | | Texin® | | | X | X | X | X | | | |
| | Trinseo | CALIBRE™, CALIBRE™ MEGARAD™ | | X | | X | | | | | |
| | | EMERGE™ | | | X | X | X | X | | | |
| | | PULSE™ | | | X | X | X | | | | |
| | INEOS Styrolution | Luran® SC | | X | | | X | | | | |
| | | Novodur® | | | X | X | X | X | X | | |

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| High Heat Polycarbonate (HHPC) | Covestro | Apec® | Provides outstanding transparency and brilliance paired with a high resistance to heat. Excellent high-gloss surface for applications requiring metallization. This linear, amorphous copolycarbonate can withstand temperatures between approximately -30°C and approximately 150°C for extended periods. It is also tough and resistant to impact. Used in covers for brake lights and indicator lights, headlamp reflectors/bezels, etc. | X | X | X | | X |
| Polybutylene Terephthalate (PBT) | DuPont | Crastin® | Semi-crystalline engineering thermoplastic that offers weight and cost savings used in electrical connectors, mirror housings, cowl vents, handles, fans, fuel system components, fuse boxes, sensor housings, ignition system components, windshield wiper covers, manual shifter pivot components, etc. | X | X | | X | X |
| Polyethylene Terephthalate (PET) | DuPont | Rynite® | Lightweight, glass-reinforced composition, dimensional stability, durability, and high-gloss finish, used across a wide range of applications, particularly as a replacement for die-cast metals and thermosets. Coil bobbins, solenoid encapsulations, wiper arms, lamp sockets, electrical connectors, control knobs, housings, covers, brackets. Makes electrical devices, photovoltaic panels, switches, and other critical energy components stronger and reliable. | X | X | | | X |
| Polyphthalamide (PPA) | DuPont | Zytel® HTN | High performance, high temperature resistant plastic that can replace aluminum in complex automotive components. | | | | X | X |

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| Polypropylene (PP) & PP Blends (Alloy, Compounds, Copolymer) | Trinseo | INSPIRE™ | The most frequently used of any plastic in automotive manufacturing due to its excellent formability, excellent chemical, heat and impact resistance. Typically found in bumpers, gas tanks, carpet fibers, instrument panels, interior trim components, fender liners, seating, bumper fascias, battery cases, rocker panels, scuff plates, cowl grilles, lamp housings, splash shields, door trim, trunk liners, etc. | | X | X | X | |
| | INVISTA | INVISTA™ | | | X | X | X | X |
| | GEON Performance Solutions | GEON® | | X | X | X | X | |
| | INEOS Olefins & Polymers | INEOS® | | | X | | | |
| | LyondellBasell | Hifax® | | | X | X | | |
| | | Hostacom® | | X | X | X | X | |
| | | Pro-fax® | | | X | X | X | |
| | | Softell® | | | X | | | |
| | Pinnacle Polymers | Pinnacle PP | | | X | X | X | X |
| | RheTech, Inc. | RheComp | | X | X | X | X | X |
| Specialty Formulations | Avient | Complēt™ | A portfolio of application specific materials that can be used in automotive areas that require high mechanical performance within tight specifications such as door & under the hood components. Also materials for applications that require weight, radiation shielding, or metal/lead alternatives and low-density formulations for underhood covers, panels and inserts fans and air management systems, battery trays, roofing systems and other interior and exterior components. | | X | X | X | X |
| | | ECCOH™ | | | | | | X |
| | | Edgetek™ PKE | | | | | X | |
| | | Gravi-Tech™ | | | X | | | |
| | | LubriOne™ | | | | X | | |
| | | Maxxam™ FR | | | | | X | |
| | | OnForce™ | | | X | X | | |
| | | Stat-Tech™ | | | | | | X |
| | | Surround™ | | | | | | X |
| | | Therma-Tech™ | | X | | | | X |
| Styrene Methyl Methacrylate (SMMA) | INEOS Styrolution | NAS® XC | These transparent copolymers are a premium choice for applications demanding a strong, stiff, water-clear plastic. The material is designed for applications requiring ultra clarity and very low haze. The UV version offers enhanced UV and high UV color stability making it an ideal material for automotive exterior and interior applications. | X | X | | | X |
| | | NAS XC® UV | | X | X | X | | |

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| | | | | LIGHTING | INTERIOR | EXTERIOR | UNDER THE HOOD | ADVANCED MOBILITY |
| Thermoplastic Polyester Elastomer (TPC-ET) | DuPont | Hytel® | High temperature, high performance copolyester elastomers that combine the properties of thermoplastics and thermoset rubbers with good resistance to weather, chemicals wear and heat. Used in constant velocity (CV) joint boots, tie rod boots, ball joint boots, air ducts, seating, air bag deployment covers, etc. | | X | X | X | X |
| | GEON Performance Solutions | GEON® | Characterized by high impact resistance, low density and good chemical resistance, used in HVAC modules, engine covers, underbody panels, running boards, IP retainers, door panel substrates, sun visor cores, seat backs and load floors, etc. | | X | X | | |
| Thermoplastic Polyolefin (TPO) Compounds | RheTech, Inc. | RheComp | | X | X | X | X | X |
| | LyondellBasell | Adflex® | POEs offer low density and high flexibility and are commonly used as impact modifiers and to make molded products more flexible. They can be used in bumper covers and fascias, interior trim panels, door panels, etc. | | X | X | | |
| Thermoplastic Polyolefin Elastomer (TPO (POE)) | | Hifax® | | | X | X | | |
| | | Hostacom® | | | X | X | | |
| Thermoplastic Polyurethane (TPU) Polyester/Polyether | | Softell® | | | X | | | |
| | Covestro | Texin® | Outstanding abrasion resistance, heat resistance, shock absorption, good moisture, oil and chemical resistance. Used for flexible body panels, interior trim, convertible top rear windows, etc. | X | X | X | X | X |



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| Avient | Color, Additives & Inks | CESA™ | | | | X | |
| | | ColorMatrix™ Excelite™ | | X | | | |
| | | Hydrocerol™, OnColor™, Smartbatch™ | | X | X | | |
| | PA 6 or PA 66 | Nymax™, Nymax™ PIR, Renol™, Smartbatch™ FX | | X | X | X | |
| | | Remafin™ | | X | | X | |
| | | reSound™ R ND | | X | | | |
| | Specialty Formulations | Complēt™ | | X | X | X | X |
| | | ECCOH, Stat-Tech™, Surround™ | | | | | X |
| | | Edgetek™ PKE | | | | X | |
| | TPE | Gravi-Tech™ | | X | | | |
| | | LubriOne™ | | | X | | |
| | | Maxxam™ FR | | | | X | X |
| | | OnForce™ | | X | X | | X |
| | | Therma-Tech™ | X | | | | X |
| | | OnFlex™ | | X | X | | |
| | | Versaflex™ CE | | X | | | |
| Chevron Phillips | PE | Marlex® | | X | | X | |
| Covestro | PC, HH PC, PC+ABS, PC+ASA, PC+SAN | Apec®, Bayblend®, Makrolon® | X | X | X | | X |
| | PC+PBT, PC+PET | Makroblend® | | | X | | X |
| | PC+TPU, TPU Polyester, TPU Polyether | Texin® | X | X | X | X | X |
| Dow | Polyethylene | DOWLEX® | | X | | X | |



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| SUPPLIER | PRODUCT FAMILY | PRODUCT NAME | LIGHTING | INTERIOR | EXTERIOR | UNDER THE HOOD | ADVANCED MOBILITY |
| DuPont | Acetal (POM) | Delrin® | x | x | x | x | x |
| | Masterbatch | Siloxaine Masterbatch | | x | | | |
| | PA 6, PA 66, PA 66/6 Copolymer | Zytel® | x | x | x | x | x |
| | PA 612, PA 66/6T Copolymer | Zytel® | | x | | x | x |
| | PBT | Crastin® | x | x | | x | x |
| | PET | Rynite® | x | x | | | x |
| | PPA | Zytel® HTN | | | | x | x |
| | TPC-ET | Hytel® | | x | x | x | x |
| INVISTA | PP Copolymer | INVISTA™ | | x | x | x | x |
| GEON® Performance Solutions | HDPE Compounds | GEON® | | x | | | |
| | PP Compounds | GEON® | x | x | x | x | |
| | TPO Compounds | GEON® | | x | x | | |
| INEOS Olefins & Polymers | PP Copolymer | INEOS® | | x | | | |
| INEOS Styrolution | ABS | Lustran® | x | x | x | | x |
| | ABS, ASA , PC+ABS | Novodur®, Luran® S | x | x | x | x | x |
| | ABS | Terluran® | | x | x | | |
| | ABS+PA, ASA+PA | Terblend® N, Terblend® S, Triax® | | x | | | x |
| | PC+ASA | Luran® SC | | | x | | |
| | SMMA | NAS® XC | x | x | | | x |
| | SMMA | NAS XC® UV | x | x | x | | |
| LyondellBasell | ASA, ASA+AES, ASA+TPE, PP Alloy, PP Compounds/PP Copolymer, TPO (POE) | Centrex®, Hifax®, Hostacom®, Adflex® | | x | x | | |
| | PP Compounds/PP Copolymer | Hostacom® | x | x | x | x | |
| | PP Compounds/PP Copolymer | Pro-fax® | | x | x | x | |
| | PP Compounds/PP Copolymer, TPO (POE) | Softell® | | x | | | |
| | | | | | | | |
| Pinnacle Polymers | PP Copolymer | Pinnacle PP | | x | x | x | x |
| RheTech, Inc. | Bio-Fiber Reinforced TPO | RheVision | | x | | | x |
| | PP Compounds, TPO Compounds | RheComp | x | x | x | x | x |
| Trinseo | ABS | MAGNUM™ | | x | x | | |
| | Acrylic (PMMA) | Plexiglas® | x | x | x | | x |
| | Acrylic (PMMA) | Plexiglas® Frosted, Plexiglas® Reflect™ | x | x | | | |
| | PC | CALIBRE™, CALIBRE™ MEGARAD™, EMERGE™ | x | | x | | |
| | PC+ABS | EMERGE™, PULSE™ | x | x | x | | |
| | PC+PET | EMERGE™ | x | x | | x | |
| | PP, PS | INSPIRE™, IR STYRON™ | | x | x | x | |



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