KYNAR® BY ARKEMA

POLYVINYLIDENE FLUORIDE

Automotive Applications

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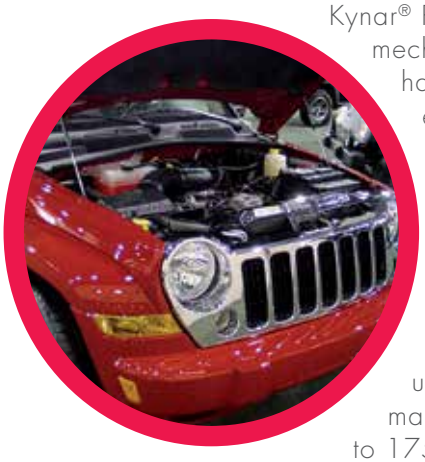
Kynar®, Kynar Flex® and Kynar 500® polyvinylidene fluoride (PVDF) resins exhibit high chemical and abrasion resistance, excellent thermal stability, are unaffected by UV radiation, and are resistant to creep under mechanical stress and load. Kynar® PVDF resins can be used for molded parts, for extruded profiles, or as protective coatings.

WIRING HARNESSES



Kynar® PVDF is a thermoplastic fluoropolymer with a high melting point and excellent mechanical properties, including cold flow and abrasion resistance. Kynar® resin also has exceptional chemical resistance, is unaffected by UV radiation and is resistant to electrical arc tracking. Because of its unique chemical structure, Kynar® PVDF produces almost no smoke when exposed directly to flame and does not propagate fire like polyolefins and PVC. Kynar® fluoropolymer can be extruded as primary insulation for wiring or used as a protective cover. Its excellent chemical resistance and high melting point make Kynar® PVDF well suited for applications "under the hood."

Kynar® PVDF insulated wire is commonly cross-linked by electron-beam radiation to further increase its toughness, cut-through resistance and continuous-service use temperature. If specifically formulated and processed, the cross-linked polymer makes light-weight, flame-retardant wire insulation that offers a temperature rating up to 175°C (347°F). Kynar® PVDF is resistant to most solvents, fuels, lubricants and other hydrocarbon fluids. Cross-linked Kynar® PVDF insulation is commonly used in automotive T4 wire (150°C, 3000 hrs). This Kynar® PVDF-based insulation has become a construction standard for major original equipment manufacturers (OEMs) in the world. Originally developed for aerospace and military requirements as Mil Spec 81044 wire, cross-linked Kynar® PVDF insulation is widely used where environmental conditions demand high performance in commercial and military electronics, satellites, ships, trains, automobiles and in aerospace applications.

DECORATIVE FILMS

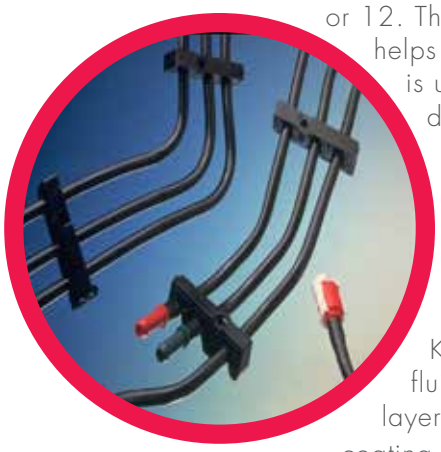
Kynar® PVDF decorative films for automotive accessories are both aesthetically pleasing and highly resistant to corrosion and weathering. These films are used on a variety of parts, such as rocker panels, roofing strips, tail lamp housings, bodyside moldings, front and rear bumpers, mirror housings and pillars. The films can be processed with standard plastics equipment and general polymer knowledge, thus requiring little capital investment. Durable Kynar® PVDF films are applied to metal, PVC, PC, TPO and ABS, and can be supplied with a heat-activated adhesive for bonding to polyolefins. The films can be thermoformed to a shape, trimmed and then placed into a mold. They can also be laminated to flat stock sheets, then thermoformed into the required shape. Films are also available with pressure-sensitive adhesives for lamination under ambient conditions. Kynar® films are available in virtually any color, including solid, metallic, pearlescent, chrome and brushed aluminum.

Kynar® fluoropolymer films provide an attractive, corrosion-resistant alternative to paint.

The strength, durability and versatility of Kynar® PVDF makes it suitable for automobile wiring harnesses, fuel lines and fuel line coatings, decals, decorative films, coatings, electrochromic applications and plastic optical fibers (POF). Conductive Kynar® 340 and Kynar® 3312C, can be injection molded and extruded and is commonly used for handling aggressive, hot fuel mixtures.

FUEL LINES

Kynar® polyvinylidene fluoride resin provides a barrier layer in low-permeation automotive fuel lines. The tubing is a multilayer construction consisting of three or five layers in combination with Arkema's Rilsan® polyamide 11 or 12. The Kynar® PVDF layer resists oxidative by-products and alcohol permeation in fuels and helps carmakers meet strict EPA guidelines for hydrocarbon emissions. ADHEFLON® tie resin is used to bond the Kynar® PVDF barrier to the RILSAN® polyamide layers, resulting in durable, flexible, low-permeation tubing.



In addition to being easily processed on conventional co-extrusion equipment, this innovative fuel line construction exhibits excellent cold temperature impact strength (-40°C), chemical resistance and dimensional stability. It is also compatible with a wide range of fuel-alcohol blends and is available in a conductive version.

Kynar® PVDF can also be used as a protective coating over carbon steel fuel and brake fluid lines, and in under-chassis applications. Kynar® PVDF can be applied in very thin layers and maintains durability and corrosion resistance. It can also be applied as a liquid coating, as a powder coating, or by cross-head extrusion.

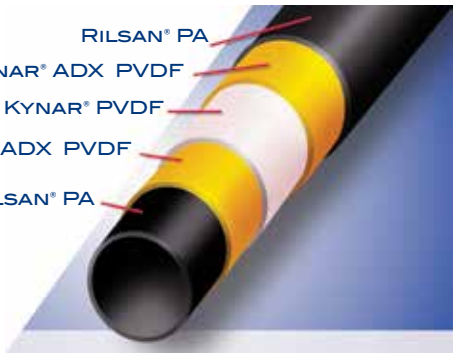
FLEX® 2850 PC FUNCTIONAL POWDER COATING

Kynar Flex® 2850 PC functional powder coating is a tough and weather resistant coating. This fluoropolymer coating resists gasoline, road salt, oils, lubricants, brake fluid, transmission fluid, windshield washer fluid, coolants, and battery acid. Kynar Flex® 2850 PC powder coating may be used to coat carbon steel parts as a low-cost alternative to stainless steel. This powder coating is durable and may be applied in very thick coatings up to 100 mils (2.5mm).

Kynar Flex® resin is corrosion resistant and unaffected by UV radiation, making it especially suitable for exterior applications. Excellent chemical, physical, and mechanical properties allow Kynar Flex® powder coating to be used in chemical processing applications such as tank linings, valve and flange coatings, and pipe coatings (exterior or interior). The powder is currently supplied in a natural, unpigmented form, though pigmented versions can be prepared. Kynar Flex® 2850 PC is typically applied by electrostatic spray over Kynar Flex® 2850 PC Primer.

KYNAR® ADX RESIN

Kynar® ADX resin and other Arkema developed tie layers are designed to bond to nylons, polyolefins and metals. Kynar® ADX melt processible resin bonds to various substrates, allowing cost effecient engineering solutions and maintains nearly all of the performance properties offered by Kynar® PVDF. Kynar® ADX can be a protective barrier against fuel chemistry on the inside or outside layer depending on the structure.



For more information on Kynar® PVDF

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