KYNAR, HYLAR or PVDF?

What is PVDF?

It is a resin used in architectural coatings that has exceptional weathering characteristics. PVDF stands for polyvinylidene fluoride. It is also known as 'Kynar', or more properly, Kynar 500®. Kynar 500® is a registered trade mark of Arkema Inc. To quote Arkema, "Kynar polyvinylidene fluoride (PVDF) resin is one of the most stable and pure of all commercial resins. It resists strong acids, solvents and reducing agents and is used in several industries, including electrical and electronic manufacturing, chemical processing, pulp and paper, and transportation." The word Kynar is being used in everyday conversation the way the trade name Kleenex is used with tissues. However, as long as Arkema continues to protect its right to the trade name Kynar 500®, the generic way to describe it is 'polyvinylidene fluoride' or 'PVDF'. This is not exactly the same thing as a fluorocarbon resin. PVDF is one of several fluorocarbon resins. Another trade name used for PVDF is Hylar® 5000. Hylar® 5000 is a registered trade mark of Solvay Solexis Inc.

Brief History of PVDF

DuPont Corporation invented and patented polyvinyl fluoride film in 1948. Pennwalt Chemicals acquired the rights and developed the licensing program that allowed the first widespread commercial use as a pigmented liquid coating. This coating was sold under the Kynar 500® trade name in the mid 60's. In the 80's Pennwalt was acquired by Elf Atochem (now called Arkema). The Federal Trade Commission mandated that Elf divest one of its production facilities. Ausimont, USA (now Solvay Solexis) acquired it and became the second major supplier of PVDF coatings (under the trade name Hylar® 5000). Today, polyvinylidene fluoride is acknowledged as the premium resin for exterior metal coating.

PVDF 70

Polyvinylidene fluoride is popularly known by its original trade name Kynar – it is a fluoropolymer (PVDF or PVD2), a family that also includes Teflon and Halar. The key to this resin is the bond created between carbon and fluorine, the strongest possible polymeric connection. Years of testing demonstrate that PVDF is most durable when it makes up 70% of the overall coating. Several companies sell 50% PVDF formulations that are less costly but the performance drops off considerably. More that 70% does not coat well. Only 70% versions may be sold under the Kynar 500® or Hylar® 5000 trade names.

Sources:
www.saf.com
www.arkema-inc.com
www.solvayplastics.com

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