

# HISTORY of FLUOROPOLYMERS

It has long been known that fluorinated polymers have many properties that are superior to their hydrocarbon counterparts. Among these properties are the ability to better resist heat, light and chemical attack - all things which cause protective coatings to fail, In addition, Fluoropolymers are known for Very low surface energy, a quality which imparts to the polymers improved water, oil and soil resistance. The disadvantage of Fluoropolymers has been in trying to apply them to a surface as a coating. Fluoropolymers were both expensive and difficult to apply, generally requiring high temperatures to cure. This was true until SP created its set of fluorinated Coatings. The new materials created by SP, make it convenient and practical to apply a fluorinated coating using conventional painting equipment, any of the series of fluorinated coatings can be applied and cured under ambient conditions. These coatings have excellent adhesion to most epoxy, alcyd and polyurethane primers. Our fluorinated coatings even adhere to themselves (even after aging), a quality that allows for the easy repair of damage to a coating.

The **SP** Fluoropolymer coatings have permeability which is an order of magnitude lower than conventional coatings. This prevents moisture and oxygen from reaching the surface of the substrate. Corrosion, like combustion requires the presence of several essential ingredients in order to proceed. The elimination of one or more of these ingredients means that corrosion cannot occur. The **SP** Fluoropolymers have proven to be low enough in permeability to prevent sufficient oxygen and water from reaching the surface for corrosion to take place.

One of the first applications of Fluoropolymers was in the environmental test chamber, (the cloud physics chamber) operated for the EPA at Calspan Corporation. Originally coated in 1973, the test chamber is used to study pollutants from various sources at high altitudes, where different chemicals can react together under intense UV radiation. Calspan needed a coating that would be easy to clean and would not react with the experiments being conducted within. Teflon and Fluoropolymer were the only two materials which qualified. Calspan coated the entire chamber from floor to ceiling, including the light fixtures and the energy Lamp bulbs (used to activate the experiments) with fluoropolymer. For more than a decade coating has been subjected to a wide range of pollutants including auto and diesel exhaust, emissions from power plants, chemical companies, volcanos, trees, sewer and water treatment facilities, and even chemical weapons. The coating is still in excellent condition and the chamber is still in use.

## *The SP Series of Fluoropolymer Coatings are:*

**Weather Resistant** (shows no weathering characteristics even after prolonged exposure)

**Chemical Resistant** (does not react with most chemicals)

**Resistant to Soiling** (dirt does not stick)

**UV Light Stable** (immune even to high doses of UV)

**Corrosion Barrier** (does not permit moisture or oxygen to reach the substrate)

**Hydrophobic Surface** (water cannot wet the surface)

**Oleophobic Surface** (oil cannot adhere to the surface)

**Organo-phobic Surface** (surface contains no nutrients upon which organic material may feed)

**Low Surface Energy-** Non-Stick Surface

**Low refractive index** for optical applications

**Immune to electrical breakdown, Dielectric**

**"WHEN YOU WANT THE VERY BEST**

**There is a "Difference"**

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