PROFESSIONAL PLASTICS

FLAMETEC FIRE SAFE MATERIALS

VYCOM OLEFIN AND PVC SOLUTIONS

FLAMETEC™ CLEANROOM PVC-C™ (FM 4910 LISTED PVC MATERIAL)

TYPICAL PHYSICAL PROPERTIES	UNITS OF MEASURE	VALUE	ASTM METHOD
Physical			
Density	g/cm^3	1.53	D 792
Water Absorption	%	0.03	D 570
Hardness	Shore D	76	D 2240
Cell Class	-	23445	D 1784
Mechanical			
Tensile Strength @ Yield	psi	7,190	D 638
Tensile Modulus	psi	366,000	D 638
Notched Izod Impact	ft-lb/in	3.0	D 256
Thermal			
Heat Deflection Temp (66 psi)	°F	190	D 648
Heat Deflection Temp (264 psi)	°F	173	D 648
Coefficient of Linear Expansion	in/in/°F	3.3×10^{-5}	D 696
Flammability			
FM Global (Factory Mutual)	FM-4910	Listed	-
Vertical Burn Test	UL-94	5-VA	-

Cleanroom PVC-C History

In **2000**, a product known as **Corzan® 4910 (white 120)** was introduced to the market. It was a creamy white color, and for descriptive purposes was an off-white color. It was distinctive in the fact that it was not a similar white to polypropylene, which was widely used prior to the introduction of the FM4910 protocol.
Lubrizol Advanced Materials (formerly Noveon) supplied Vycom Plastics the compound for the manufacture of rigid sheet which is sold to the semiconductor industry.

In **2003** Lubrizol introduced **Corzan 4911 (white 140)**, also referred to by **G2** (by the compounder) and the name Cleanroom PVC-C by Vycom Plastics. This product, too, is FM4910 listed and approved. Lubrizol (Noveon) held the listing for the resin and Vycom holds the listing for the finished sheet.

There were several reasons behind the introduction of this second generation product. We were asked to produce a material that was whiter, moving toward something that was similar in color to the "refrigerator white" polypropylene that was used in wet bench construction. In addition, an easier processing material, both from the extrusion and the fabrication standpoint, was requested. As Cleanroom PVC-C continued to gain acceptance, a decision was made to discontinue the production of the original **Corzan 4910 (white 120)** material.

A decision was made in approximately **2005** to discontinue the production of the **Corzan 4910 (white 120)** compound. In light of the fact that there we many tools that had been produced with the original creamy white material, Lubrizol decided to offer a similar colored product for those applications which required the original creamy white color. Due to the fact that the call for this product was limited, we needed to require minimum order quantities for this special product.

Several key customers, including Applied Materials, required more detail about the materials, the colors, and how specifications would be affected by the Cleanroom PVC-C product replacing Corzan 4910. In the world of "Copy Exact," this presented problems and confusion for tool fabricators and design engineers at Applied. In order to accommodate the market, Lubrizol introduced the **Corzan 4911 (white 120)**, which was the creamy white version of the Cleanroom PVC-C.

In **2013**, Lubrizol decided they no longer wished to participate in the FM 4910 market. They licensed their formulations to PolyOne Corporation, whom Vycom is currently getting their compound from.

The following is a basic timeline of what has taken place:
1. 2000: Corzan 4910 (white 120) introduced; off-white / creamy in color
2. 2003 (approx): Corzan 4911 (white 140) - aka Cleanroom PVC-C was introduced; bright white in color
3. 2005 (approx): Corzan 4910 (white 120) product is made obsolete
4. 2006 (approx): Corzan 4911 (white 120) is introduced; an off-white / creamy white version of Cleanroom PVC-C is formulated.
5. 2013: Lubrizol licenses PolyOne to formulate FM 4910 compound for Vycom