



VICTREX® PEEK COATING TECHNOLOGY

700 SERIES POWDER COATINGS PRODUCT DATA SHEET

VICOTE® 705 Blue Powder Coatings

VICOTE is the brand name for the Victrex range of coatings. VICOTE Coatings are available through Victrex plc or its preferred coater network. Contact Victrex plc for further details.

PROPERTIES

VICOTE 705 Blue is a blue pigmented version of the VICOTE 705 grade and contains additives to help with adhesion, wetting of the substrate and shrinkage. This grade has a nominal particle size of ~ 50 microns. The powder is light blue in colour and is a low melt viscosity grade for lower film builds. Typical film thicknesses range from 50 – 80 microns. The final coating takes on a mid blue colour after stoving.

The VICTREX® PEEK polymer contained in the VICOTE powder coatings are thermoplastic in nature and exhibits flow above the melt temperature. When processed using the correct guidelines the coatings will exhibit the excellent properties that VICTREX PEEK polymer is renowned for.

Typical properties are high continuous use temperature of 260°C, excellent wear, abrasion and cut through resistance at these high temperatures combined with excellent chemical and radiation resistance. VICOTE Coatings have a low level of extractables and are hydrolysis resistant and inherently flame retardant.

SUBSTRATES AND PREPARATION

VICOTE Coatings can be applied to most ferrous and nonferrous metals. A primer is not required. Cast metals need to be de-gassed in an oven to prevent pin holes in the coating surface. Aluminium may be coated however the mechanical properties of the metal will be affected at processing temperatures of VICOTE Coatings.

Substrates should be free from grease, oils and corrosion prior to coating. Solvent de-greasing and grit blasting with aluminium oxide with final solvent wash should ensure a suitable surface for coating.

Note: phosphate pre-treated substrates are not recommended for VICOTE Coating grades as the high processing temperatures required for processing can result in de-lamination of the coating.

PROCESSING

Conventional electrostatic spray equipment is suitable for VICOTE Coatings. Ovens should be capable of attaining up to 450°C. For general processing information consult the VICOTE powder coating guides.

By following the processing guide smooth coatings should be achievable. Because VICOTE Coatings are semi crystalline thermoplastics, as with all these types of products shrinkage will take place when the coating cools. Depending on the mass of the substrate, coating thickness and rate of cooling will determine the amount of shrinkage.

Normally processed and cooled coatings should result in crystalline coatings which should not require further post processing treatment. However an increase in crystallinity may enhance certain properties such as wear and scratch resistance. To anneal the coating the part should be placed in an air circulating oven and the temperature raised at 10°C per minute to 250°C and held at that temperature for 30 minutes to 1 hour.

With coated parts that are subject to a high service temperature it may be beneficial to anneal the parts at 10°C above the maximum service temperature to prevent further volume change of the coating.

Note: The colour of the final coating when using VICOTE 705 Blue may depend on the substrate. For example, if a very thin coating is applied the processing temperatures will affect the colour of the steel which in turn could influence the final colour of the coating.

STORAGE AND HANDLING CONSIDERATIONS

VICOTE boxes should be stored in a clean dry environment and should not be stored with the lids and internal liner opened as this may result in airborne dust contaminating the product, which could cause coating defects.

VICOTE Coatings are packed in 10kg strong cardboard boxes with the VICOTE logo on the outside. Smaller quantities are available on request. The powders have an indefinite storage life if the powder is kept sealed in its original box. Drying of the powders at 150°C for 3 hours or 120°C overnight is recommended before use.

SAFETY PRECAUTIONS

Before applying VICOTE Coatings, read the appropriate Material Safety Data Sheet (MSDS) and the processing guide, available from Victrex plc. VICOTE Coatings should be only applied using suitable local exhaust

ventilation system. Care should be taken not to inhale dust, vapour and fumes evolved during processing. Washing of hands and good housekeeping are a pre requisite before handling these products.

Note: these products are not for human implantation.

FDA Compliance

Materials and articles manufactured from VICOTE 705 Blue complies with the compositional requirements of regulation 21 CFR 175.300 for resinous and polymeric coatings of the Food and Drug Administration (FDA) of the United States of America.

Regulation 21 CFR 175.300 further specifies that the finished coated part which is in contact with food is subject to extractive limitations. Compliance with any applicable extractive limits can only be demonstrated by testing carried out on the finished article.

Typical Property Data for VICOTE® F705 Blue Grade Powder Coating

Property	Test Method	Units	Nominal Value
Density	ISO 1183	gcm ³	1.32
Melt Temperature	DSC	°C	343
Glass Transition	DSC	°C	143
CUT (RTI)	UL746B	°C	260
Konig Hardness	BS EN ISO 1522	seconds	177

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