VICOTE®

VICTREX® PEEK COATING TECHNOLOGY

700 SERIES ELECTROSTATIC POWDER COATINGS PRODUCT DATA SHEET

VICOTE® 708 and 709 Powder Coatings

VICOTE® is the brand name for VICTREX® PEEK polymer-based coatings. VICOTE Coatings are only available through Victrex or its preferred coater network. Contact Victrex for further details.

PROPERTIES

VICOTE 708 and 709 grades are specially developed powder coatings (based on VICTREX HT™ polymer) with a higher T_g and melting point than the standard VICOTE products. VICOTE 708 and 709 grades deliver extended high temperature performance while offering all the key characteristics of standard VICOTE Coatings. Key features of VICOTE 708 and 709 grades include:

- Retention of mechanical and physical properties at temperatures 30°C higher than other 700 series coatings.
- Up to 3 times the wear resistance of standard 700 series coatings.
- Higher levels of fatigue performance.
- Higher creep modulus than standard 700 series coatings at 150°C

VICOTE 708 and 709 grade powders are available in various average particle sizes from 10 – 50 microns. The powders are off-white in color and are available in various melt viscosities depending on the film thickness and level of melt flow required. Typical film thicknesses range from < 100 microns up to 500 microns.

VICOTE 708 and 709 grades, like other non-coating grades of VICTREX HT polymer, are thermoplastic in nature and exhibit flow above the melt temperature. When processed using the correct guidelines, the coatings will exhibit the excellent properties that VICTREX HT polymer is renowned for.

- High continuous use temperature of 260°C
- Excellent wear abrasion and cut through resistance at these high temperatures
- Excellent chemical and radiation resistance
- Low level of extractables
- Hydrolysis resistant
- Inherently flame retardant

Typical Properties of 708 and 709 Grade Powder Coatings

Property	Test Method	Units	Value
Density	ISO 1183	g cm³	1.32
Melt Temp.	DSC	°C	374
Glass Transition	DSC	°C	157
CUT (RTI)	UL746B	°C	260

FDA COMPLIANCE

Materials and articles manufactured from VICOTE grades 708 and 709 comply 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.

SUBSTRATES AND PREPARATION

VICOTE Coatings can be applied to most ferrous and non-ferrous 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 Aluminium will be affected at VICOTE Coatings processing temperatures.

- 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 Coating products. Ovens should be capable of attaining up to 450°C. For general processing information consult the VICOTE powder coating guide.

- By following the processing guide, smooth coatings should be achievable. VICOTE materials are semi-crystalline thermoplastics, and 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 708 and 709 natural resins may depend on the substrate. For example, if a thin VICOTE Coating is applied, the processing temperatures will turn some steels blue and may impart a blue/grey colour to the final VICOTE 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 Powder Coatings are packed in 10 kg 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 the powders at 150°C for 3 hours or 120°C overnight is recommended before use.

SAFETY PRECAUTIONS

- Before applying VICOTE Powder Coatings, read the appropriate Material Safety Data Sheet (MSDS) and the processing guide, available from Victrex.

- VICOTE natural coating resins should only be applied using suitable local exhaust ventilation system.

- Care should be taken not to inhale dust, vapors and fumes evolved during processing.

- VICOTE Coatings must only be applied and processed where Local Extract Ventilation (LEV) is available.

- Washing of hands and good housekeeping are a prerequisite before handling these products.

Note: these products are not for human implantation.

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