



VICTREX® PEEK COATING TECHNOLOGY

800 SERIES AQUEOUS DISPERSIONS PRODUCT DATA SHEET

VICOTE® F817 Enhanced Adhesion Grade

VICOTE® is the brand name for the Victrex range of coatings based on VICTREX® PEEK polymer. The VICOTE dispersions are available through Victrex plc or its preferred coater network. Contact Victrex plc for further details.

VICOTE dispersions are aqueous based, however there may be small amounts of solvent present. Refer to the appropriate MSDS sheet for details.

SUBSTRATES AND PREPARATION

VICOTE F817 can be applied to most ferrous and non ferrous metals. Cast metals need to be de-gassed in an oven to prevent pin holes in the coating surface. Aluminium and other thermally sensitive substrates may be coated however the mechanical properties of the substrate may be affected when exposed to VICOTE processing temperatures.

The VICOTE F817 enhanced adhesion grade can be used on metal substrates where limited surface roughening is allowed or desired. When using this VICOTE grade the adhesion to a non-roughened or grit blasted surface is much higher than using the standard VICOTE dispersions. VICOTE F817 will withstand 24 hours boiling water test on non-grit blasted stainless steel without loss of adhesion.

Note: Although roughening the metal surface may not be required, removal of oils and greases must be undertaken to obtain the optimum adhesion. Rust and mill scale would need to be removed by conventional grit blasting while either thermal degreasing or a conventional vapour degreasing step should be employed to remove oils and greases. Once this is done the substrate should not be handled with bare hands.

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

SPRAYING

A conventional gravity fed spray gun with a nozzle size between 0.7 and 1.8mm has been found suitable for applying VICOTE dispersions. Edges of components should be sprayed first before applying a complete coating. An air pressure to the gun of between 35 and 50 psi has been

found to be a suitable spray pressure. Spray at right angles to the substrate wherever possible. The spray gun and cup can be cleaned with water after use.

PROCESSING

For general processing information consult the VICOTE dispersion coating guides. Coated parts should be dried in air for 10 minutes then dried in an oven for 10 minutes at 120°C before placing in an oven at 400°C to fuse and melt the coating.

By following the processing guide smooth coatings should be achievable. Because VICOTE Coatings are semicrystalline thermoplastics as with all these types of products some 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.

VICOTE F817 should result in crystalline coatings which should not require further post processing treatment.

STORAGE AND HANDLING CONSIDERATIONS

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

The VICOTE dispersions will soft settle after prolonged standing. They can be re-dispersed readily by stirring of the liquid suspension. The drums can also be rolled to agitate the dispersion and re-disperse. High shear dispersing should be avoided as the wetting agent is prone to shear thinning. Although it is recommended that the dispersion is not allowed to freeze, re-dispersing after thawing is possible. Optimum storage temperature is 5°C – 25°C.

VICOTE F817 is packed in 20 kg polythene UN drums enclosed in a strong cardboard box with the VICOTE logo. The product has a shelf life of 12 months if kept in its original container with the lid securely fastened and ideally should not be used after this time.

SAFETY PRECAUTIONS

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

VICOTE F817 should be only applied using suitable exhaust ventilation. Care should be taken not to inhale fumes or vapours. The washing of hands and good housekeeping are a prerequisite before handling these products.

Note: These products are not for human implantation.

FDA

Materials and articles manufactured from VICOTE F817, comply with 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® F817 Aqueous Dispersion Coating

Property	Test Method	Units	Nominal Value
Viscosity @ 25°C	BS EN ISO 2431 Din 6 Cup	seconds	30
Weight Solids	Victrex Internal Test Method	%	40
Theory Volume Solids	—	%	28
pH	Victrex Internal Test Method	—	10
S.G. @ 25°C	ISO 2811	g/cc	1.15
Mtg Pt. (peak)	DSC	°C	343

Typical Property Data for VICOTE® F817 Aqueous Dispersion Coating - Coating Film Thickness 25 – 35µm

Property	Test Method	Units	Nominal Value
Cross Hatch Adhesion	BS EN ISO 2409	rating 0-5	0 - mild steel 0 - stainless steel 0 - aluminium
24 Hour Boiling Water Adhesion	Victrex Internal Test Method	rating 0-5	0 – on non-grit blasted stainless steel
Direct Impact	BS EN ISO 6272 Part 1 (pass criterion)	height (m) weight (kg) indentation depth (mm)	1 1 15
Conical Blend	BS EN ISO 6860	mm	pass at 3mm
Konig Hardness*	BS EN ISO 1522	seconds	118
Salt Spray	ISO 4628	degree of rusting	Ri/1

* Minimum coating thickness required for this test was 30µm, coatings tested were between 40 and 50µm.

World Headquarters

Victrex plc
Hillhouse International
Thornton Cleveleys
Lancashire FY5 4QD
United Kingdom
Tel: + (44) 1253 897700
Fax: + (44) 1253 897701
Email: victrexplc@victrex.com

Americas

Victrex USA Inc
300 Conshohocken State Road
Suite 120
West Conshohocken, PA 19428
USA
Tel: + (1) 800-VICTREX
Tel: + (1) 484-342-6001
Fax: + (1) 484-342-6002
Email: americas@victrex.com

Europe

Victrex Europa GmbH
Langgasse 16
65719 Hofheim/Ts.
Germany
Tel: + (49) 6192 96490
Fax: + (49) 6192 964948
Email: eurossales@victrex.com

Asia Pacific

Victrex Japan Inc.
Mita Kokusai Building Annex
4-28, Mita 1-chome
Minato-ku
Tokyo 108-0073
Japan
Tel: +81 (0)3 5427 4650
Fax: +81 (0)3 5427 4651
Email: japansales@victrex.com

Asia Pacific

Victrex High Performance
Materials (Shanghai) Co Ltd
Part B Building G
No. 1688 Zhuanxing Road
Xinzhuan Industry Park
Shanghai 201108
China
Tel: + (86) 21-6113 6900
Fax: + (86) 21-6113 6901
Email: scsales@victrex.com

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