PTFE, commonly known by the trade name Teflon or the proper name “Polytetrafluoroethylene” is a notoriously difficult material to bond as it is non-stick by nature. It is often used for applications where high temperature and / or exposure to harsh chemicals will be an issue.

**Properties:**
- Surface energy: 19mJ/m²
- Maximum service temperature: 260°C
- Melting temperature: 330°C

**PTFE Uses**
- Electronic and electrical components
- Chemical handling equipment, tank and vat liners
- Non-stick cookware

**Tips for surface preparation & bonding:**
For untreated PTFE there are several options:

a) bond untreated - select Permabond TA46XX structural acrylic products, these are developed especially for low-surface energy polyolefins and PTFE.

b) prime with Permabond POP and use with cyanoacrylate adhesive only (other adhesives are not compatible with POP).

c) Use a fluorocarbon etchant such as “Tetra-Etch”, once treated this offers much greater choice of adhesive technologies used. Corona, flame, plasma treatment and abrasion show virtually no improvement in adhesion strength.

Other names / Tradenames: Teflon, Fluon, Hostaflon, Chemfluor
Similar: Perfluoroalkoxy (PFA), fluorinated ethylene propylene (FEP).

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**Adhesive Recommendations**

| Cyanoacrylate | Use POP Primer first. All CA’s can be considered, 105 or 2050 are particularly good. For high temperature applications, consider 820 or 920 range. Be cautious if bonding dissimilar surfaces as there could be issues with differential thermal expansion and contraction (in which case go for a toughened or flexible CA such as 737). |
| Epoxy - 1part and 2 part | Can only be considered if etching solution is used first. |
| Structural Acrylic | Permabond TA46XX range is designed for bonding this material without the need to carry out surface pre-treatment. |
| UV-Curable | UVs can only be considered if PTFE is chemically etched before bonding. Other substrate needs to be clear. |

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