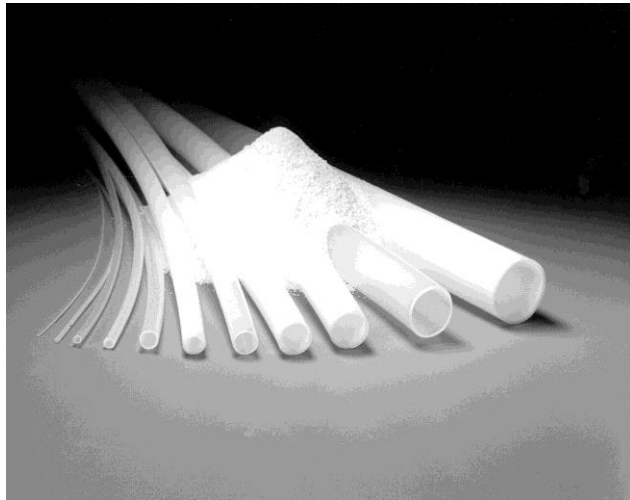


Chemical Resistance of PTFE

PTFE has an excellent chemical resistance. It is resistant to most chemicals and solvents, with only a few limitations.

The content of this data sheet is based on information from our raw-material suppliers. It is intended for use by persons having technical skill. The actual application and risks involved must be considered in each specific case. Because conditions of product use are outside our control, we make no warranties in connection with any use of this information.

The chemical threats to products made of PTFE could be generally summarised in the following table:



Chemical	Effect
Organic and halogenated solvents	Swell, reversible after short-term exposure, irreversible after long-term exposure
Alkali metals, in solution or molten state	Elimination of fluorine, destruction of the polymer
Halogens, gaseous fluorine, chlorine trifluoride, oxygen difluoride	Chemical reactions possible at elevated temperatures, destruction of the polymer, swelling, explosion possible
Monomers: Such as styrene, butadiene and acrylonitrile	Penetration possible, spontaneous polymerization may destroy the polymer
Concentrated sodium and potassium hydroxide	Temperature > 200 °C Chemical reaction possible
Strong Lewis bases (boranes, aluminium chloride, ammonia, some amines and imines)	Temperature close to 260 °C Chemical reaction can occur at high temperature close or above maximal service temperature
70 % nitric acid	Temperature ≥ 250 °C under pressure Slow oxidative attack possible
High energy radiation	Gamma radiation: 10 kGy dosage may already reduce physical properties by approximately 50%
Nitrating acid: Mixture of conc. H ₂ SO ₄ and HNO ₃	Temperature >100 °C: Decomposition of the fluoropolymer possible

