SOLVAY

asking more from chemistry®

Hyflon® PFA & MFA®

for Cryogenic Applications

SPECIALTY POLYMERS

Hyflon® PFA and MFA®
for Cryogenic Applications

Faced with the rising demand of the Oil & Gas industry to explore in more extreme regions such as deepwater and arctic areas, polymer technology must adapt and improve to meet performance requirements.

The increasing interest in Floating LNG (FLNG) is driving the development of several aerial cryogenic system that enable more conventional transfer of LNG on the open sea.

In this challenging scenario Solvay Solexis, one of the world's leaders in fluorinated materials, provides Hyflon® PFA and Hyflon® MFA®, that are a unique family of semi-crystalline melt-processable perfluoropolymers, that combine excellent mechanical characteristics with novel properties such as very cold temperature resistance, inherent flame resistance, chemical inertness, heat resistance, low surface energy, and exceptional dielectric properties.

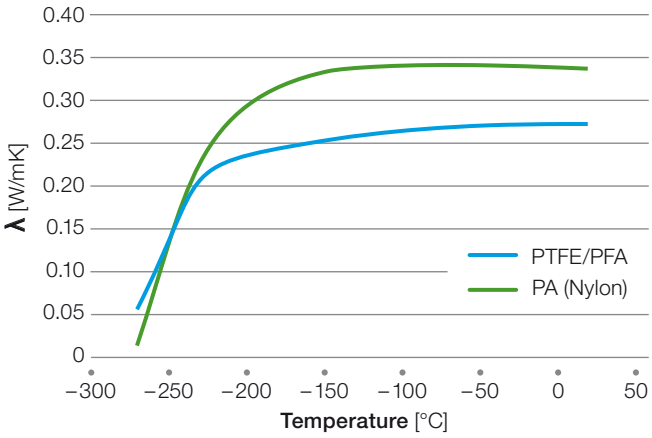
Hyflon® resins are used in several Oil & Gas applications such as EM cables, metal tubing encapsulation, piping, tank linings, tower packing, valve linings and heater cables.

Hyflon® resins have been designed to retain their properties over a wide range of temperatures from cryogenic (–200 °C) to 250–260 °C.

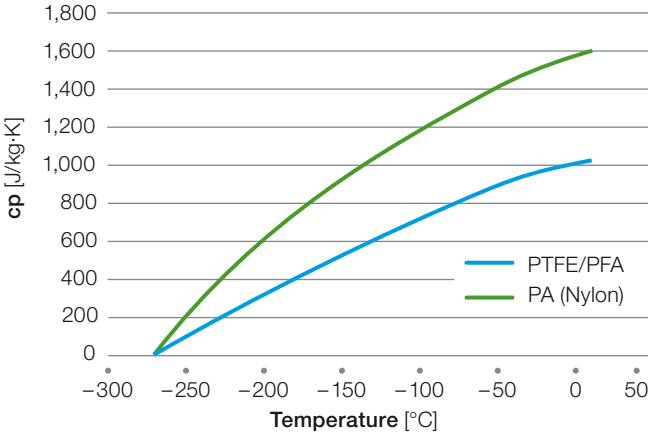
Why Use Hyflon® in Cryogenic Applications?

- Lower thermal conductivity than nylon, down to –230 °C
- Lower specific heat than nylon, down to –250 °C
- Good flexibility and ductility down to –100 °C (lowest temperature tested)
- Mechanical properties and dimensional stability, from –200 °C to +260 °C
- Excellent long-term ageing resistance
- No plasticizer, no additives
- Intrinsic UV resistance

Thermal conductivity



Specific heat



Hyflon® PFA M620

Sample Type IV (thickness: 1.5 mm) acc. ASTM D638

Temperature [°C]	E [MPa]	Stress at Break [MPa]	Strain at Break [%] (traverse)
23	465	35.6	281
0	609	39.6	258
–20	690	41.6	232
–50	960	44.4	182
–100	2,980	55.6	22.8

www.solvay.com

SpecialtyPolymers.EMEA@solvay.com | Europe, Middle East and Africa
SpecialtyPolymers.Americas@solvay.com | Americas
SpecialtyPolymers.Asia@solvay.com | Asia Pacific

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