# Product Data Sheet
# ZOTEK™ F30

(photograph to be applied at a later date)

## Description:

ZOTEK™ F 30 is a closed cell foam of density 1.9 pcf made from KYNAR® PVDF (poly vinylidene fluoride) available in sheet form. The material will thermoform into simple and complex shapes.

ZOTEK™ F foam is made using a unique nitrogen manufacturing technology, Zotefoams has formed Kynar® PVDF (Polyvinylidene Fluoride), a fluoropolymer with a range of densities down to 30 kg/m3.

Kynar® PVDF is a remarkable material, a tough, fluoropolymer that offers a unique balance of properties. It shows exceptionally wide temperature tolerance (to 160 degrees C), excellent UV, nuclear radiation and ageing resistance, high dielectric strength and outstanding resistance to a wide range of solvents and aggressive chemicals.

## Typical use & applications:

The properties of ZOTEK™ F30 combined with the flexural response, buoyancy and thermal insulation properties given by foaming to produce suitable for use in a broad spectrum of applications. These include materials for thermal and acoustic insulation in aircrafts, insulation in aggressive chemical process environments and in applications were excellent UV resistance is required. The compliance response of these new ZOTEK™ F foams make them ideal for both low and high closure force seals for the petrochemical industry while their "closed cell" nature enables the buoyancy characteristics to be exploited in "unsinkable" floats and level sensors in chemicals.

## Physical-mechanical properties:

| Property | Test Method | Units | Typical Value |
|---|---|---|---|
| Density | ISO 845 | pcf | 1.9 |
| Max. operating temperature | Internal | F | 230 |
| Compression stress strain Characteristics | | | |
| 10% compression | ISO 7214 | psi | 3.5 |
| 25% compression | (1st compression) | psi | 6.8 |
| 40% compression | | psi | 11.5 |
| 50% compression | | psi | 16.1 |
| Tensile strength | ISO1798 | psi | 58 |
| Elongation | | % | 151 |
| Tear strength | ISO 8067 | lbf/in | 6 |
| Compression set (22hrs @25% compression, 73`F, ½ hr recovery) | ISO 7214 1" cell-cell | %set | 6 |
| (22hrs @25% compression, 73`F, 24hrs recovery) | 1" cell-cell | %set | 3 |

| Property | Test Method | Units | Typical Value |
|---|---|---|---|
| (22hrs @ 50% compression, 73` F, 1/2hr recovery) | ASTM D3575 1" cell-cell | %set | 11.5 |
| (22 hrs @50% compression, 73` F, 24hrs recovery) | 1" cell-cell | %set | 7.5 |
| Thermal Conductivity | | | |
| Mean temperature of 32`F | ISO 8301 | Btu in/ft2.hr | 0.226 |
| Mean temperature of 104`F | DIN 52 612 | Btu in/ft2.hr | 0.266 |
| Mean temperature of 176`F | ASTM C 521 | Btu in/ft2.hr | 0.316 |
| Flammability | | | |
| | FAR/JAR 25.853(d)/(c) | | |
| Heat Release | Appendix F Pt IV (g) | | Pass at 1/8"& ½" |
| Smoke Density | Appendix F Pt V (b) | | Pass at 1/8" & ½" |
| Toxic Gas Emission | ABD0031 para. 7.3.2 | | Pass at 1/8" & ½" |
| Vertical Bunsen Burner | FAR/JAR 25.853 | | Pass at 1/5" & ½" |
| Radiant Panel | FAR/JAR 25.856 | | Pass at 1/5" & ½" |

## Other Properties:

Creep Performance
PVDF resins typically exhibit excellent creep performance, however, data on the creep performance of the PVDF foam is not available at this point in time.

Water Vapor Permeability
PVDF resins exhibit low permeability to most gases and liquids including water, however, data the water vapor permeability of the PVDF foams are not available at this time.

Processing & Operating Temperature
The maximum operating temperature is defined as that temperature, which typically cause a linear shrinkage of 5% after a 24 hour exposure period, using a sample of 4x4x1".

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