



HFX™ Series – Housing Filtration Excellence Engineered for Performance

HFX-PL-PVDF™ – Polyvinylidene Fluoride Plastic Bag Housing Technical Overview

FiltraCore Asia's **HFX-PL-PVDF™ Polyvinylidene Fluoride Plastic Bag Housings** are specified for critical liquid-filtration processes where **material integrity, chemical resistance, low extractables, and thermal stability** are non-negotiable. Compared with polypropylene or polyethylene, **PVDF** offers a more robust balance of **broad-spectrum chemical resistance** and **elevated-temperature performance**, making it suitable for services involving **strong mineral acids, halogenated media, oxidising agents, and chlorinated water**. Continuous service to **~110 °C** is typical, with **operation up to ~120 °C at reduced pressure** where the design and gasket selection permit; apply the published **pressure/temperature derating** for all elevated-temperature duties.

The housing employs **precision-moulded PVDF construction** with smooth internal surfaces to limit dead zones, support clean operation, and simplify rinsing. **All wetted components are non-metallic**, providing a **corrosion-free wetted path** to reduce risks of ion leaching and metallic contamination in high-purity lines. Closure options include a **tool-free hand-nut** (standard) or **clamp-ring** (on request) for rapid access; **vent and drain ports** are available for safe depressurisation, sampling, and cleaning. Seal materials are **EPDM, FKM (Viton®), or PTFE-enveloped elastomers** to align with process chemistry and purity targets; note that overall limits remain **gasket-dependent**.

HFX-PL-PVDF™ accommodates **industry-standard #02 filter bags** (with **#01** available on request) across felt/depth, mesh, and pleated formats and common sealing geometries. This supports straightforward integration into existing thermoplastic single-bag systems **once port size/type, centres, footprint, closure style, and rating class are verified**. Typical pressure class is **up to 6 bar at 20 °C** (model-dependent) with a conservative derating towards higher temperatures; housing-induced Δp is low relative to media Δp , but final **flow and pressure drop** depend on viscosity, micron rating, and allowable Δp .

Designed for **semiconductor fabrication (including UPW), pharmaceutical manufacturing, chemical processing, and ultra-pure water production**, HFX-PL-PVDF™ pairs proven PVDF material performance with a clean, serviceable architecture. The result is a **high-purity housing** that helps safeguard **product quality and operational uptime** under demanding conditions – provided operation stays within the published **MAWP, temperature derating, and chemical compatibility** for both process and CIP media. **Not for steam service or thermal shock.**

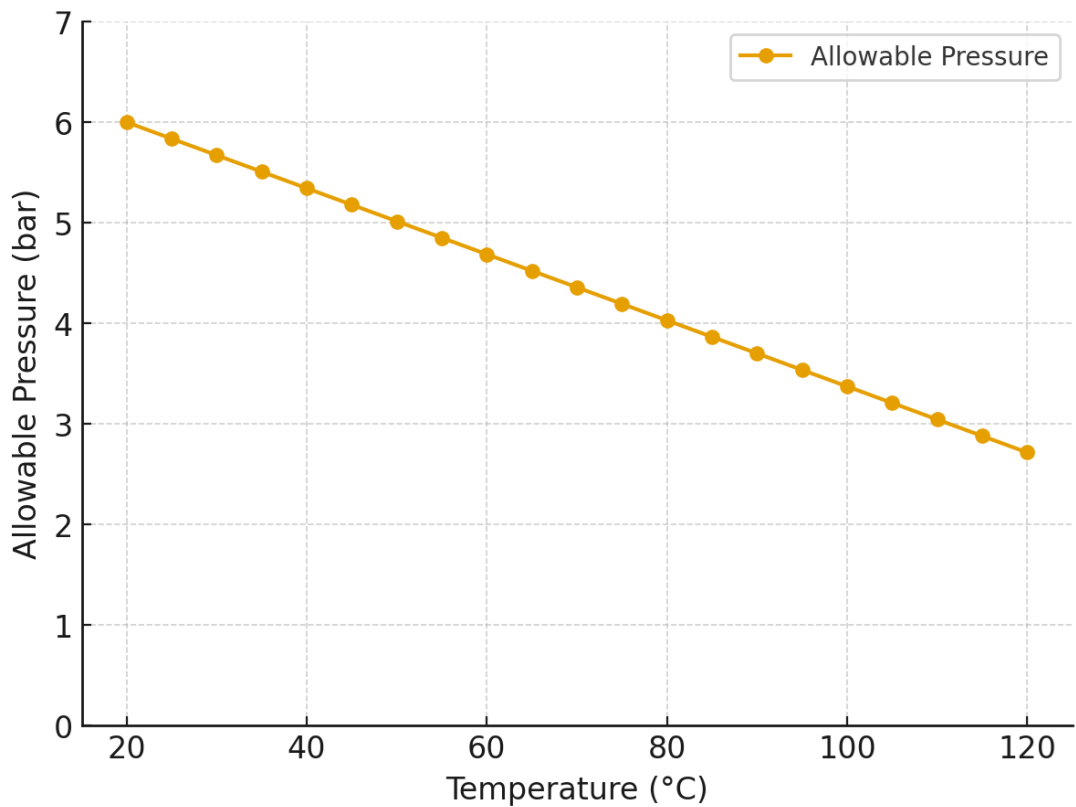
Engineered for Purity. Optimized for Resistance. Proven in Extremes.

Technical Specifications

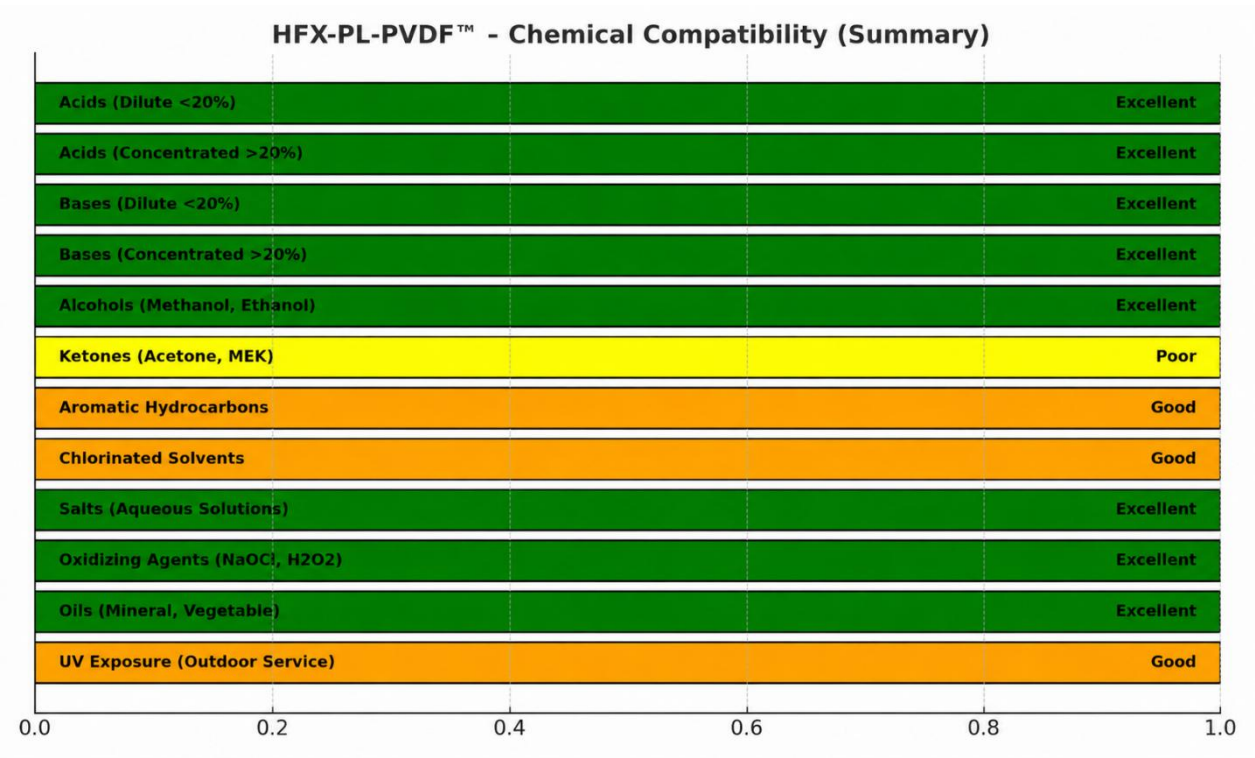
- **Model:** HFX-PL-PVDF™ – Polyvinylidene Fluoride Single-Bag Housing
- **Filter compatibility:** Standard #02 filter bags in felt, mesh or pleated types across a wide micron range; #01 available on request (customization)
- **Housing material:** High-purity PVDF (polyvinylidene fluoride) providing exceptional chemical and thermal resistance; purity grade per certified resin
- **Basket material:** PVDF (recommended) or polypropylene perforated support basket; note that polypropylene baskets have lower chemical/temperature limits
- **Seal options:** EPDM, FKM (Viton®), PTFE, or PTFE-encapsulated elastomers; select low-extractables gaskets for high-purity service
- **Closure options:** Hand-nut closure (standard) for tool-free servicing; clamp-ring available on request
- **Inlet/Outlet connections:** BSPT or NPT threaded, typically 1–2 in; ANSI/DIN flanged nozzles available; side-entry standard, other orientations on request
- **Vent & drain ports:** Optional top vent and bottom drain for safe depressurisation, sampling and fluid removal
- **Pressure rating:** Up to 6 bar at 20 °C (model-dependent); pressure de-rates to ~3–4 bar by 90–110 °C – refer to FiltraCore pressure/temperature derating chart
- **Temperature range:** –20 °C to 110 °C continuous duty, up to ~120 °C at reduced pressure, subject to gasket selection and pressure derating
- **Flow range:** Up to ~40 m³/h with a #02 bag, depending on fluid viscosity, micron rating and allowable Δp
- **Surface finish:** Smooth internal PVDF surfaces; all wetted components non-metallic and cleanable
- **Mounting:** Base-mounted with moulded support feet; suitable for floor or skid installation
- **Compliance:** Food-contact (FDA 21 CFR; EU 1935/2004 & 10/2011) and USP Class VI compliant variants available when specified and documented
- **OEM compatibility:** Accepts #1/#2 filter bags and common sealing geometries used in many thermoplastic housings (e.g. Hayward®, Eaton®, Pentair®, FCP®); verify port centres, footprint, closure type and pressure/temperature class before retrofit

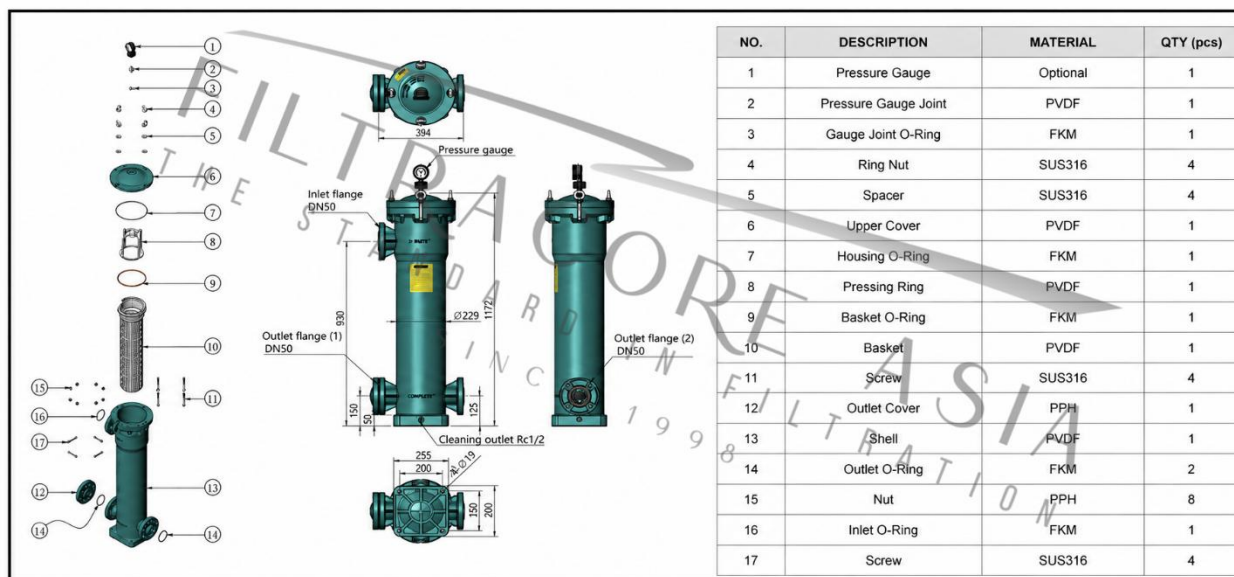


Pressure Rating Derating vs. Temperature¹



Chemical Compatibility² (Summary)





¹ Pressure ratings shown are for static liquid service only, based on water or fluids of similar viscosity. Ratings decrease with increasing temperature as indicated. Engineers should apply a minimum 1.5× safety factor when sizing housings for dynamic or cyclic service. Always consult application-specific conditions before finalizing pressure design limits. Pressure performance is validated by hydrostatic burst testing and long-term creep resistance, not by wall thickness. Refer to derating chart for application-specific limits.

² Compatibility ratings are general guidelines for PVDF housings in typical concentrations and temperatures. Actual chemical resistance may vary depending on concentration, temperature, exposure time, and presence of additives. “Excellent” indicates long-term resistance under most conditions; “Good” may require evaluation for prolonged use; “Poor” and “Not Recommended” indicate limited or unsuitable service. Users must validate compatibility against actual process conditions before deployment.

All data, dimensions, and ratings are provided for general reference only. FiltraCore thermoplastic housings are designed and hydrotested in accordance with relevant industry standards; however, actual performance will vary with process conditions, media, and installation. Maximum operating pressure and temperature are subject to material selection, gasket/elastomer choice, and published pressure–temperature derating curves. Standard rating is 6 bar (87 psi) @ 20 °C, with maximum operating temperatures of 60 °C for PP, 80 °C for GF-PP, and 120 °C for PVDF (subject to derating).

Chemical compatibility of housing materials, seals, and gaskets with the process fluid is the sole responsibility of the user; data provided are general guidelines derived from industry sources and laboratory testing, and actual performance may vary with concentration, temperature, and process variables.

Wetted parts in PP, GF-PP, or PVDF provide broad resistance to aqueous solutions and many process chemicals, while elastomer options (EPDM, Viton®, PTFE, PTFE-encapsulated) extend compatibility across most industrial and sanitary applications. For specific chemical resistance, consult the FiltraCore Chemical Resistance Guide or contact our technical team.

FiltraCore assumes no liability for improper use, chemical incompatibility, installation, or operation beyond published ratings. Specifications are subject to change without notice as part of continuous product improvement

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