

AluVaC®

All-aluminum chambers & components with CF knife edge

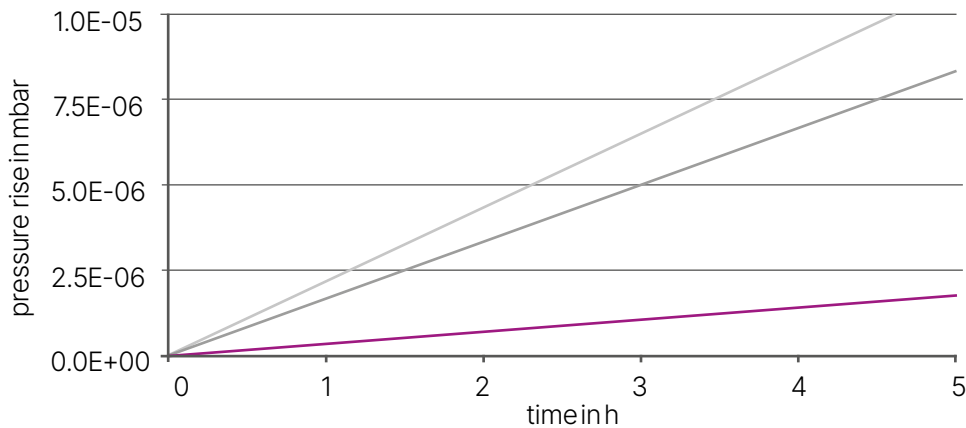


- Long-term durable
CF knife edge according
ISO 3669
- Non-magnetizable,
 $\mu_r = 1.00002$
- Outgassing rates
down to
 $q \leq 2 \cdot 10^{-14} \text{ mbar} \cdot \text{l/s/cm}^2$

Technical Data

- Long-term durable CF-knife edge according ISO 3669*
- Specified vacuum performance according to VACOM Purity Classes

UHV/XHV-Performance of AluVaC® compared to stainless steel



Pressure rise in identically constructed vacuum vessels of:

- Stainless steel 316L (after 24 h bakeout at 120 °C)
- Stainless steel 316L (after 24 h bakeout at 200 °C)
- Aluminum (after 24 h bakeout at 120 °C)

Typical outgassing rates determined from this:

- Stainless steel 316L (24 h, 200 °C) $q \leq 1E-12 \text{ mbar} \cdot \text{l/s/cm}^2$
- Aluminum (24 h, 120 °C) $q \leq 1E-13 \text{ mbar} \cdot \text{l/s/cm}^2$

Material Properties	
■ Material	Aluminum alloys 6xxx & 5xxx
■ Material density	2.7 g/cm ³ (Cf. stainless steel ~ 8.0 g/cm ³)
■ Rel. magn. permeability	< 1.00002
■ Thermal conductivity	170 – 220 W/(m·K)
■ Yield strength	240-260 MPa
■ Maximum temperature	160 °C (max. 30 minutes)
Product Specification	
■ He leak rate	< 1.0 · 10 ⁻¹⁰ mbar · l/s
■ Recommended bake-out temperature	120 °C
■ Max. operating temperature	120 °C
■ Required sealing material	Copper OFHC, annealed (e.g.: CUA40)
■ Max. part dimensions	1200 × 700 × 600 mm

Products

Lightweight chambers with CF-connections	CF-components
<ul style="list-style-type: none"> ■ Rectangular chambers up to 1200 × 700 × 600 mm ■ Cylindrical chamber up to DN400 ■ Customized chambers 	<ul style="list-style-type: none"> ■ Flanges ■ Tubulated flanges ■ Straight connectors ■ Customized flanges ■ Zero-length reducer flanges

NOTE: All AluVaC®-components are also usable in combination with CF-components made of stainless steel.

* verified by long-term testing with 100 tightening cycles (with annealed OFHC copper gaskets) and after bakeout for 48 h at 120 °C. Please see our additional product information.