

Butterfly valves

ZIRCONIA

ISO9001

PN 16

Why Choose a Carten HiLife Ceramic Butterfly Valve?

Extreme hardness and high temperature capabilities give ceramics exceptional resistance to cavitation- even continuous, aggressive cavitation does not affect the material. Unlike other ceramic materials, zirconium oxide (ZrO_2 –also known as zirconia) is a material with very high resistance to abrasion, and crack propagation.

Zirconia Toughened Alumina (ZTA) ceramic is utilised as standard for the ceramic lining of this HiLife butterfly valve, due to its high resistance to wear and abrasion. In effect, it is an intermediate solution between alumina and zirconia – but with the increased mechanical strength and fracture toughness over alumina. ZTA has a high temperature stability and corrosion resistance.



HiLife

HiLife Ceramic Butterfly Valve Part Descriptions

Zirconia-Toughened Alumina Seat Lining

fitted to every piece of the HiLife Butterfly series ensures maximum protection for end users piping systems against wear, corrosion, abrasion, and erosion. The flange steel component effortlessly absorbs the adjustment forces; the ceramic lining ensures efficient wear protection therefore the flow-path is fully enclosed by ceramic components ensuring exceptional wear, corrosion, abrasion, and erosion-resistance for all components used for flow control.

EPDM Lining available to create ANSI FCI 70/2 Class VI leak rate for shutoff leak rate if required, and suitable to application.

Zirconia-Toughened Alumina ensures increased mechanical strength and fracture toughness over alumina. ZTA has a high temperature stability and corrosion resistance.

ISO Mounting Pad to ensure compatibility with all major actuator brands (DIN3337 available as option)



Solid Zirconia-Toughened Alumina Disc is utilised as standard as this component needs to be extremely strong, wear-resistant, abrasion, erosion and corrosion-resistant, chemically inert, and have a fracture toughness of a high level.

Cavitation Resistant Carten Zirconia-Toughened Alumina ceramics are not affected by cavitation, and will not degrade in high differential-pressure applications that are subject to cavitation.

Serialised Valves as standard to ensure traceability to all production records, raw material, chemical and mechanical composition data

Line Size available from DN50 (2") to DN300 (12") available

Properties of HiLife Ceramic Butterfly Valves

Property	Units	Material
		Zirconia Toughened Alumina
Colour	-	Ivory
Bulk Density	g/cm ³	4.2
Water Absorbency	%	0
Hardness	Kgf/mm ²	1300
Flexural Strength	MPa	480
Compressive Strength	MPa	2000
Thermal Conductivity @ 20°C	W/mk	22
Fracture Toughness	MPavm	5.5
Maximum Use Temperature (in valve)	°C/ °F	200/392
Thermal Shock Resistance	°C/ °F	<250/482
Young's Modulus of Elasticity	GPa	320
*Coefficient of thermal expansion	200 °C (*10 ⁻⁶ / °C)	7-8

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