

AESCULAP[®] Isocer[®]

Ceramic Heads



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Isocer® Ceramic with
Vitelene® Polyethylene

High demand hip endoprosthesis treatment

with Isocer[®] ceramic heads in combination with highly-crosslinked Vitelene[®] Polyethylene with Vitamin E

- ✓ **High wear resistance**
2.4 mg/mio. load cycles with 36 mm Isocer[®] head against Vitelene[®] (1)
- ✓ **In vivo oxidation stability**
Vitelene[®] with stable oxidation index up to 5 weeks of aging 70°C/O₂/5 bar (ASTM F2003-02) (2)
- ✓ **Proven fracture resistance**
Statistic/dynamic fracture resistance 89.3 kN/72.6 kN Isocer[®] head 28L/TiAl6V4 12/14 (3)
- ✓ **More corrosion resistant taper connection**
Reduced ion transfer of ceramic heads compared to metal heads (4)

Material Properties	Isocer [®]	ISO 6474-2 Type X
Al ₂ O ₃ [Vol. %]	75 ± 2	60 – 90
ZrO ₂ + HfO ₂ + Y ₂ O ₃ [Vol. %]	25 ± 2	10 – 30
TD theoretical density [g/cm ³]	4.37 (100%)	≥ 99% of TD
Average grain size [µm]	0.8	≤ 1.5
Biaxial bending strength [MPa]	≥ 700	≥ 600
Fracture toughness [MPa√m]	≥ 5.0	≥ 4.0

Size	28 mm	32 mm	36 mm
S	NK324	NK424	NK524
M	NK325	NK425	NK525
L	NK326	NK426	NK526
XL	–	NK427	NK527



Isocer[®] 12/14

Isocer[®]: Zirconia-toughened alumina ceramic (Al₂O₃ / ZrO₂ / ISO 6474-2).
Isocer[®] heads are approved with PE / XLPE articulation only. No ceramic-ceramic articulation.

- (1) Data on file; Aesculap AG; Testreport T443 März 2014.
 (2) Grupp TM et al. Biotribology of a vitamin E-stabilized polyethylene for hip arthroplasty – Influence of artificial ageing and third-body particles on wear. Acta Biomater. 2014 Jul;10(7):3068-78.
 (3) Data on file; Aesculap AG; Testreport V1659 März 2015.
 (4) Kocagoz SB et al. Ceramic heads decrease metal release caused by head-taper fretting and corrosion. Clin Orthop Relat Res. 2016 Apr;474(4):985-94.

AESCULAP® – a B. Braun brand

Aesculap AG | Am Aesculap-Platz | 78532 Tuttlingen | Germany
Phone +49 7461 95-0 | Fax +49 7461 95-2600 | www.bbraun.com

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