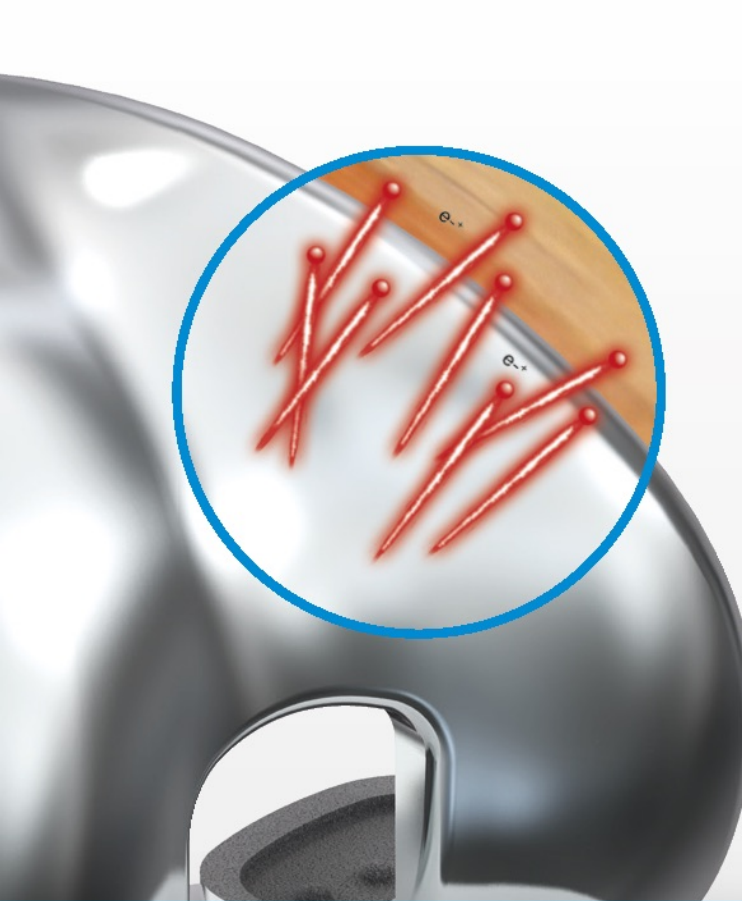


SHIELDED WITH LINK PorEx

LINK CoCrMo implants coated with PorEx (TiNbN) ceramic coating finished with **HighGliss**

- + Decreased Co and Cr ion release^{1,2}
- + Lower friction coefficient⁵
- + Increased fatigue strength²
- + Increased hardness^{1,2}



INNOVATIVE MATERIAL

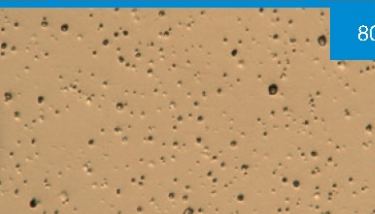
LINK PorEx (TiNbN) surface modification significantly reduces the release of metal ions from the CoCrMo alloy substrate.^{1,2}

Relative hardness in Vickers



LINK PorEx Coating

LINK CoCrMo



800x



Competitor Coating

IMPROVED TRIBOLOGY

PorEx coated implants show to be more hydrophilic than CoCrMo implants. A better wettability increases lubrication in vivo² and reduces the friction coefficient.⁵

Droplets on PorEx coating surface are reduced by additional polishing step during the coating production, called **HighGliss** finish.

Wear of total knee joint prostheses in standard testing (ISO 14243)⁴



WEAR RESISTANCE

PorEx reduces polyethylene wear

- + TiNbN surface modification reduces UHMWPE wear by more than 3 times compared to non-coated CoCr heads.^{2,3}

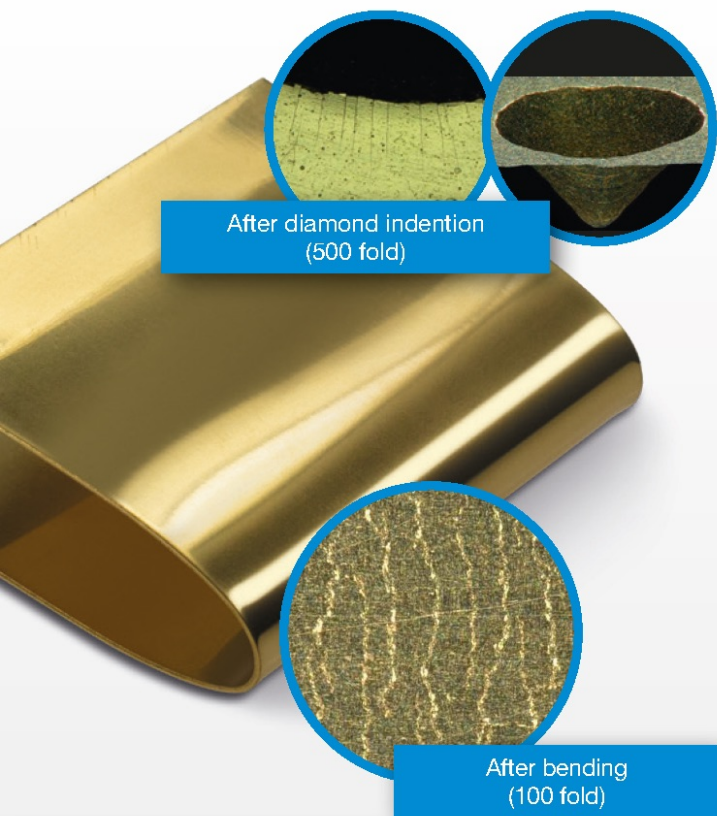


PVD COATING

Since 1993, ceramic-like coated surfaces have been available to protect implants against wear and ion release.

LINK PorEx is applied through PVD (Physical Vapor Deposition) treatment which is known for its excellent properties:

- + Adhesive strength of coating on substrate
- + Reliability
- + Reproducibility



NO DELAMINATION

in bending or indentation testing

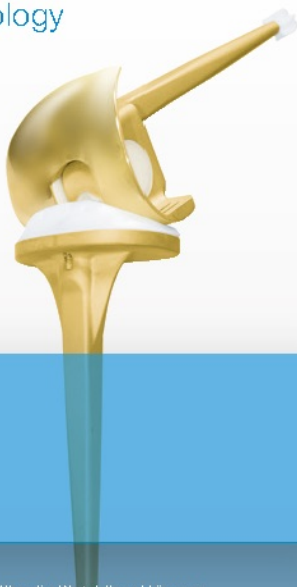
Diamond indentation test results show that due to TiNbN coating the surface hardness of such modified implants is higher when compared to uncoated Cobalt Chromium implants.^{1,2}

A metal strip for testing is included in each batch of implants to be coated. After the bending test, the surface reflects a pattern of cracks, however, no delamination on LINK PorEx coating is detected.

This excellent adherence strength is achieved due to LINK's proprietary coating technique. Insufficient adherence results in delamination.


LINK PorEx TiNbN Technology

- Significant reduction of metal ions release^{1,2}
- Ceramic-like surface¹
- Outstanding hardness¹



References

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- 2 Farfy C., Zietz C., Bauman A., Bader R. Wear Performance of Sequentially Cross-Linked Polyethylene Inserts against Ion-Treated CoCr, TiNbN-Coated CoCr and Al2O3 Ceramic Femoral Heads for Total Hip Replacement, 2015
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