



Trinity cluster shell with Trinity Dual Mobility (ECiMa insert)



Trinity shell with ECiMa liner



ECiMa elevated posterior wall liner



ECiMa neutral liner

ECiMa™

Vitamin-E enriched advanced polyethylene

About

Corin's most advanced polyethylene enriched with antioxidant vitamin E, designed to provide an alternative to hard bearings.

Ultra-low wear

In mobile joint replacement, minimising wear is critical to longevity.

ECiMa has excellent wear properties thanks to extensive cross-links created during an optimised, cold gamma irradiation process¹. When compared to UHMWPE and HXLPE, a 95% and 83% reduction in wear rate was recorded².



Mechanical performance

After cross-linking, some free radicals may remain. Removing these reactive free radicals is critical.

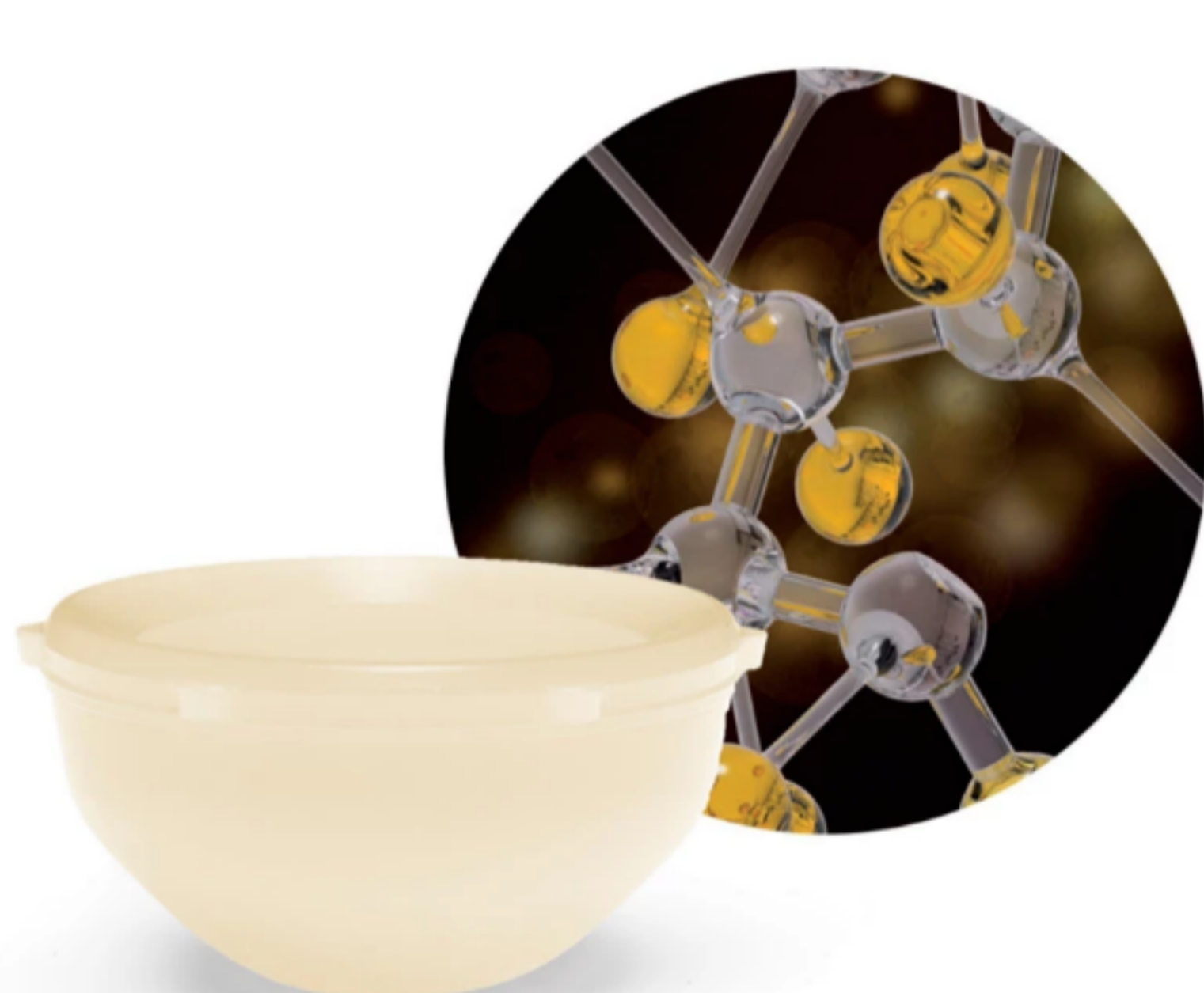
Corin use a proprietary mechanical annealing process to reduce free radicals created during the irradiation process without re-melting. This means crystallinity is largely unaffected and ECiMa retains the proven mechanical strength and performance of UHMWPE³.



Oxidative stability

An optimised dosage⁴ of vitamin-E is blended with UHMWPE before consolidation to provide uniform, long term resistance to oxidation^{2,5,6,7}.

This vitamin-E reduces oxidation initially by neutralising reactive free radicals created during irradiation, and a remaining antioxidant reservoir provides active stabilisation to minimise in vivo oxidation.



References

1. Oral E, Godleski Beckos C, Malhi AS, Muratoglu OK. The effects of high dose irradiation on the crosslinking of vitamin E-blended ultra-high molecular weight polyethylene. *Biomaterials*, 2008;29;3557- 60.
2. Traynor A, Simpson D, Collins S. ECiMa™ for low wear, optimal mechanical properties and oxidation resistance of hip bearings. *Total Hip Arthroplasty - Wear Behaviour of Different Articulations*, EFORT Reference in Orthopaedics and Traumatology, Springer: ISBN 978-3-642-27360-5, 2012.
3. Data on file, Corin Group Ltd.
4. Data on file, Corin Group Ltd.
5. Competitor literature review.
6. Oral E, Wannomae KK, Hawkins NE, Harris WH, Muratoglu OK. a-Tocopherol doped irradiated UHMWPE for high fatigue resistance and low wear. *Biomaterials*, 2004;25(24):5515-22.
7. Oral E, Christensen S, Malhi A, Wannomae K, Muratoglu O. Wear resistance and mechanical properties of highly crosslinked UHMWPE doped with vitamin E. *Journal of Arthroplasty*, 2006;21(4):580-91. 5 Oral E, Godleski Beckos C, Malhi AS, Muratoglu OK. The effects of high dose irradiation on the crosslinking of vitamin E-blended ultra-high molecular weight polyethylene. *Biomaterials*, 2008;29;3557- 60.