

Biomet Bone Cement R and Refobacin® Bone Cement R

- High viscosity bone cement
- Easy handling in modern vacuum mixing systems
- Green color for easy recognition during surgery
- Mechanical properties exceeding international standards¹



Biomet Bone Cement R and Refobacin® Bone Cement R

Decades of experience in bone cement and cementing systems has allowed us to help in the treatment of millions of patients worldwide. Building upon that heritage we are now introducing Biomet Bone Cement R and Refobacin® Bone Cement R to the U.S. market. Together with our comprehensive assortment of products for mixing and delivery, pressurization and bone bed preparation, they make for one of the most complete portfolios for Modern Cementing Technique (MCT) in the market today.

With our Biomet Bone Cement R and Refobacin® Bone Cement R we offer high viscosity cements with and without antibiotics, radiopaque and easy handling. Both bone cements contain chlorophyll which creates a green cement that is easily distinguishable during surgery.

High viscosity bone cement

The use of high viscosity cement both with and without antibiotics, such as Biomet Bone Cement R and Refobacin® Bone Cement R, have in the Norwegian Arthroplasty Register and the Swedish Hip Arthroplasty Register shown to result in the lowest incidence of revision.^{2,3}

Mechanical properties exceeding international standards

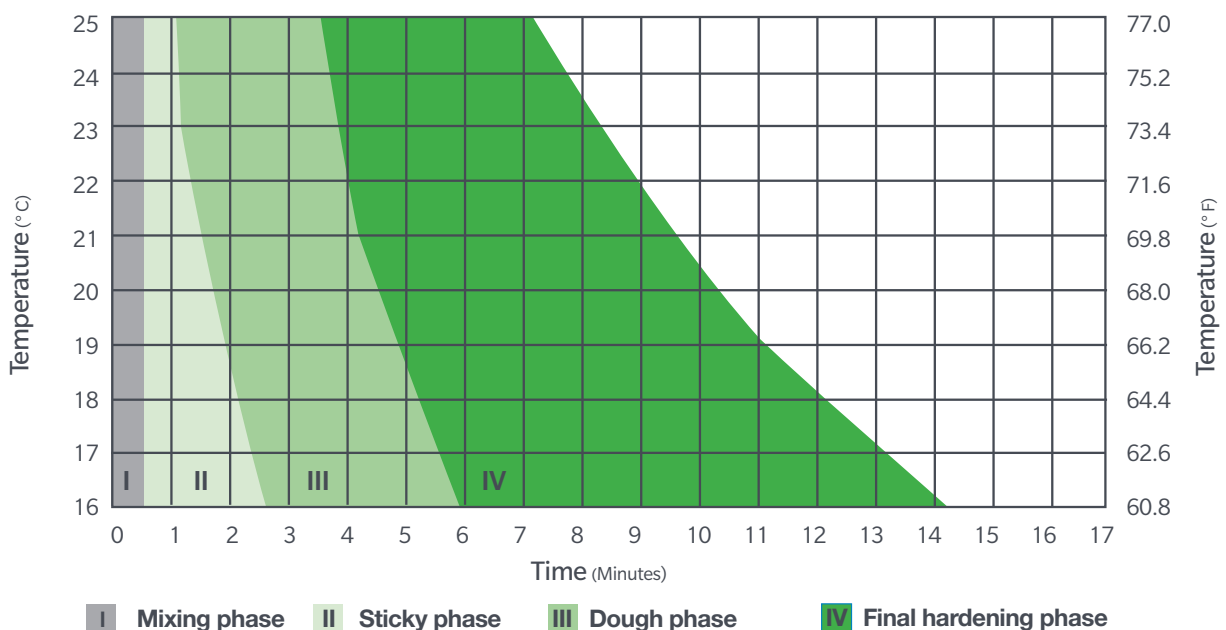
The mechanical properties of bone cement are tested for compressive strength, bending strength and bending modulus according to ISO 5833.⁴ Biomet Bone Cement R and Refobacin® Bone Cement R exceed these international standards established for strength.

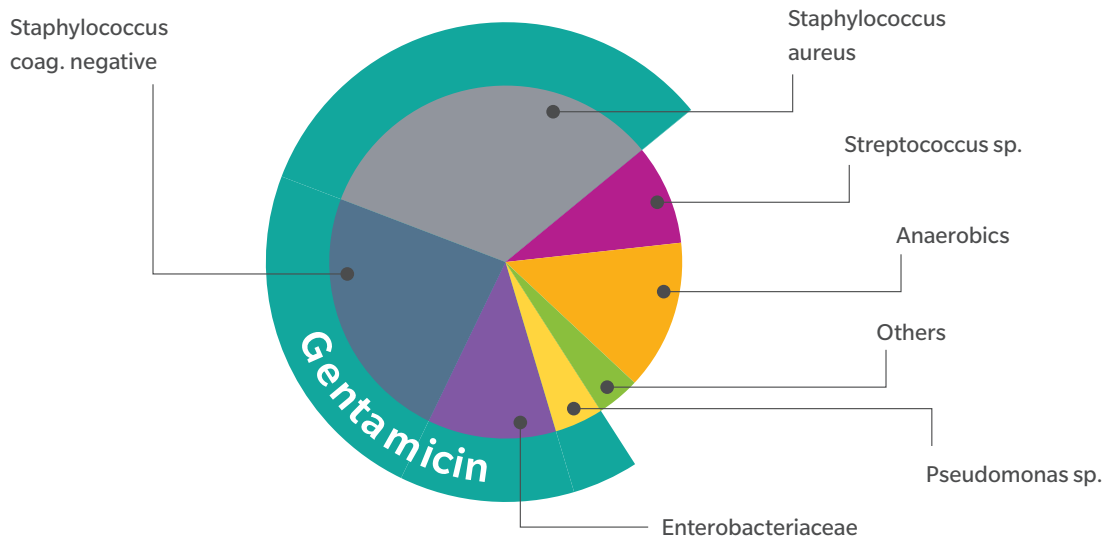
Easy handling

Biomet Bone Cement R and Refobacin® Bone Cement R can be mixed both by hand and in a vacuum mixing system. However, MCT recommends using a vacuum mixing system such as the ClearMix™ or Zimmer Biomet Compact Vacuum Mixers for mixing and delivery of bone cement. This makes standardized handling easy and helps achieve a reproducible, homogeneous bone cement of the highest quality.^{5,6}

The handling properties will vary depending on the temperature of the cement and the operating room: higher temperatures will result in a shorter working phase and faster setting time. If longer handling and setting time is needed, the bone cement can be pre-chilled (please refer to product Instructions for Use).

Biomet Bone Cement R and Refobacin® Bone Cement R Non-prechilled, mixed under vacuum





Gentamicin covers most of the bacteria common to infected arthroplasty cases.⁷

Antibiotic-loaded bone cement - may reduce risk of re-infection⁸

Refobacin[®] Bone Cement R includes 0.50 g active gentamicin per 40 g sachet. The bone cement is to be used in the second stage of a two-stage revision for total joint arthroplasty, after clearance of an initial infection.

Gentamicin – for broad coverage

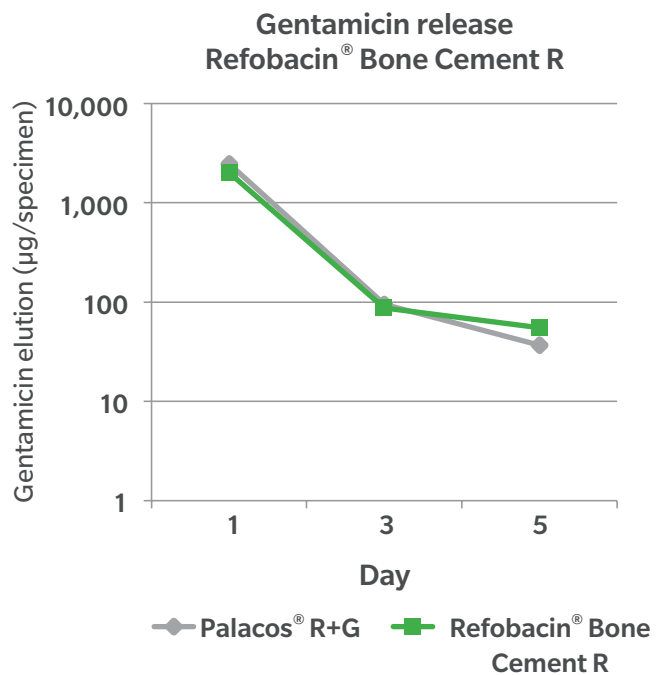
Gentamicin has shown to be the antibiotic of choice for bone cement, as its broad therapeutic spectrum covers gram-positive and gram-negative bacteria, such as staphylococci, E. coli and pseudomonas.^{9,10} Gentamicin is bactericidal on proliferating and resisting pathogens, and its release from the bone cement is superior to that of other antibiotics.¹⁰

Gentamicin – for long-lasting, local antibiotic release



A protracted release of gentamicin from cured bone cement was proven as early as 1972.¹¹ By using antibiotic-loaded bone cement, high local concentrations of antibiotics can be administered to areas surrounding the implant, potentially preventing germs from settling. The protracted release of the antibiotics may protect the implant for an extended period of time, thus reducing the risk of revision.⁸

Refobacin[®] Bone Cement R – satisfactory gentamicin release

Refobacin[®] Bone Cement R provides high local concentrations of gentamicin over several days.¹²



Ordering Information

Product	Part Number	Description	Units/Case
	110035368	Biomet Bone Cement R 1X40	1
	110034355	Refobacin® Bone Cement R 1X40 (with gentamicin)	1

Biomet Bone Cement R and Refobacin® Bone Cement R are part of the Zimmer Biomet concept for Modern Cementing Technique, including:



Reference

1. Data on file at Zimmer Biomet, internal laboratory testing results, 2016. Laboratory testing is not necessarily indicative of clinical performance.
2. Havelin, L-I., *et al.* Prospective Studies of Hip Prostheses and Cements. A presentation of the Norwegian Arthroplasty Register 1987-1999. Scientific Exhibition presented at the 67th Annual Meeting of the American Academy of Orthopaedic Surgeons, March 15-19, 2000, Orlando, USA.
3. Malchau, H., *et al.* Prognosis of Total Hip Replacement, Scientific Exhibition presented at the 67th Annual Meeting of the American Academy of Orthopaedic Surgeons, March 15-19, 2000, Orlando, USA.
4. ISO 5833, Implants for Surgery - Acrylic Resin Cements (2002).
5. Dunne N-J, *et al.* Influence of the mixing techniques on the physical properties of acrylic bone cement. *Biomaterials*. 22: 1819-1826, 2001.
6. Wilkinson J.M., *et al.* Effect of mixing techniques on the Properties of Acrylic Bone-Cement. *The Journal of Arthroplasty*, 15:663-667, 2000.
7. Graph based on Riem, L. 39. Magdeburger Orthopädisches Symposium. Diagnostik und Therapie von Knochen- und Gelenkinfektionen. *Medizin Forum Aktuell* nr 64. Operative Orthopädie und Traumatologie. 10:1, 1998.
8. Parvizi, J., *et al.* Efficacy of antibiotic-impregnated cement in total hip replacement. A meta-analysis. *Acta Orthop*. 79 (3): 335-341, 2008.
9. Kühn, K-D. Bone Cements. Up-to-Date Comparison of Physical and Chemical Properties of Commercial Materials. Springer Verlag Berlin Heidelberg New York, 256, 2000.
10. Gehrke, T., *et al.* Pharmacokinetic study of a gentamicin/clindamycin Bone Cement Used in One-Stage Revision Arthroplasty; In: *Bone Cements and Cementing Technique*; Walenkamp, GHIM; Murray, DW (eds); Springer Verlag Berlin Heidelberg. 127-134, 2001.
11. Wahlig, H., *et al.* Über die Freisetzung von Gentamicin aus Polymethylmethacrylat. I. Experimentelle Untersuchungen in vitro. (Release of Gentamicin from Polymethyl Methacrylate. I Experimental in vitro tests.) *Langenbecks Arch. Chir.* 331, 169-192, 1972.
12. Data on file at Zimmer Biomet, internal laboratory testing results, 2017. Laboratory testing is not necessarily indicative of clinical performance.

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