

Arthrex Bone Cement

High and Medium Viscosity, With and Without Gentamicin



Arthrex® 

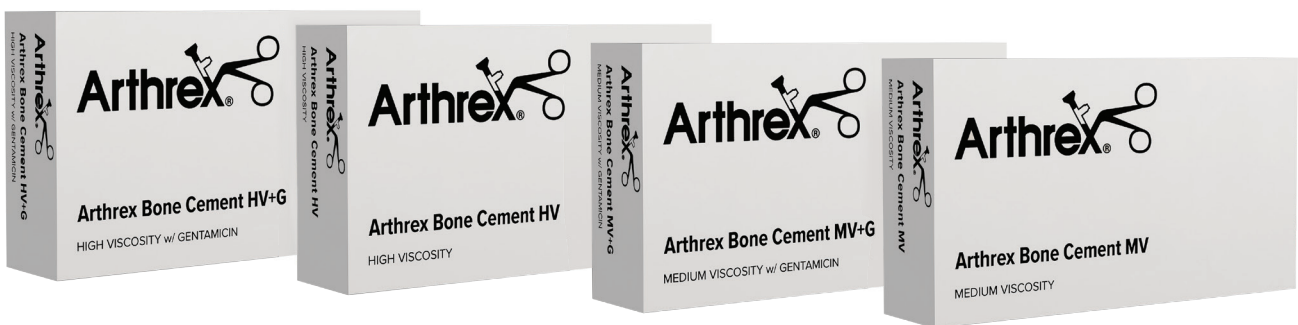
Introduction

Arthrex Bone Cements provide surgeons with standard and antibiotic-loaded solutions designed to support stable implant fixation in primary arthroplasty or in the second stage of a 2-stage revision procedure.¹ These versatile formulations can be used in a variety of clinical settings, such as degenerative joint disease, posttraumatic joint conditions, or situations involving reduced bone quality.

The Arthrex Bone Cement portfolio includes high-viscosity (HV) and medium-viscosity (MV) formulations, each available with gentamicin (HV+G, MV+G) or without (HV, MV). Each bone cement is supplied as two components, powder and liquid, that are mixed and applied in the operating room.

Arthrex Bone Cement HV is formulated to secure metallic and polymeric prostheses to living bone and designed to achieve the appropriate viscosity based on the desired application. Once hardened, the cement forms a stable structure that enhances the mechanical performance of the implant.^{2,3}

Arthrex Bone Cement MV supports prosthesis cementation and is specially optimized for efficient syringe delivery and reliable shoulder spacer creation. Its use is particularly recommended in revision procedures or when infections caused by gentamicin-sensitive microbes are present.⁴

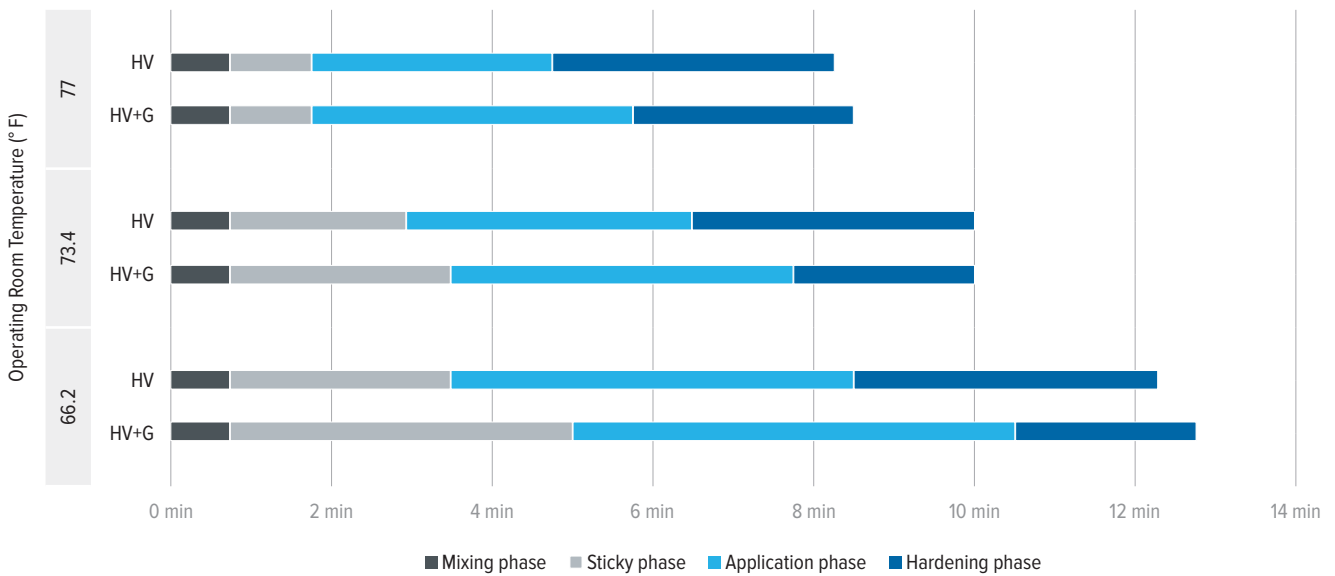


High-Viscosity Bone Cement

Arthrex Bone Cement HV is available in both standard and antibiotic-enhanced formulations, offering surgeons the flexibility to choose the optimal solution for each clinical scenario. Its radiopaque profile and precisely engineered viscosity and handling characteristics make it exceptionally well-suited for the secure cementation of large-joint prostheses.^{2,3}

The HV+G formulation elevates performance even further by incorporating gentamicin, delivering targeted antimicrobial protection against gentamicin-sensitive organisms to the cured cement mantle and surrounding tissues.^{5,6} This added defense makes HV+G an excellent choice for revision procedures and cases where infection risk from susceptible microbes is a concern—helping support stronger, more reliable outcomes.⁴

High-Viscosity Bone Cement Timing



Mixing Characteristics⁷

- > Reduced mixing time (45 seconds)
- > 4- to 5-minute working time for application
- > Complete polymerization at 10 minutes
- > Low polymerization temperature to reduce risk of thermal shock

Bone Cement

High Viscosity	AR-901-HV
High Viscosity With Gentamicin	AR-901-HVG

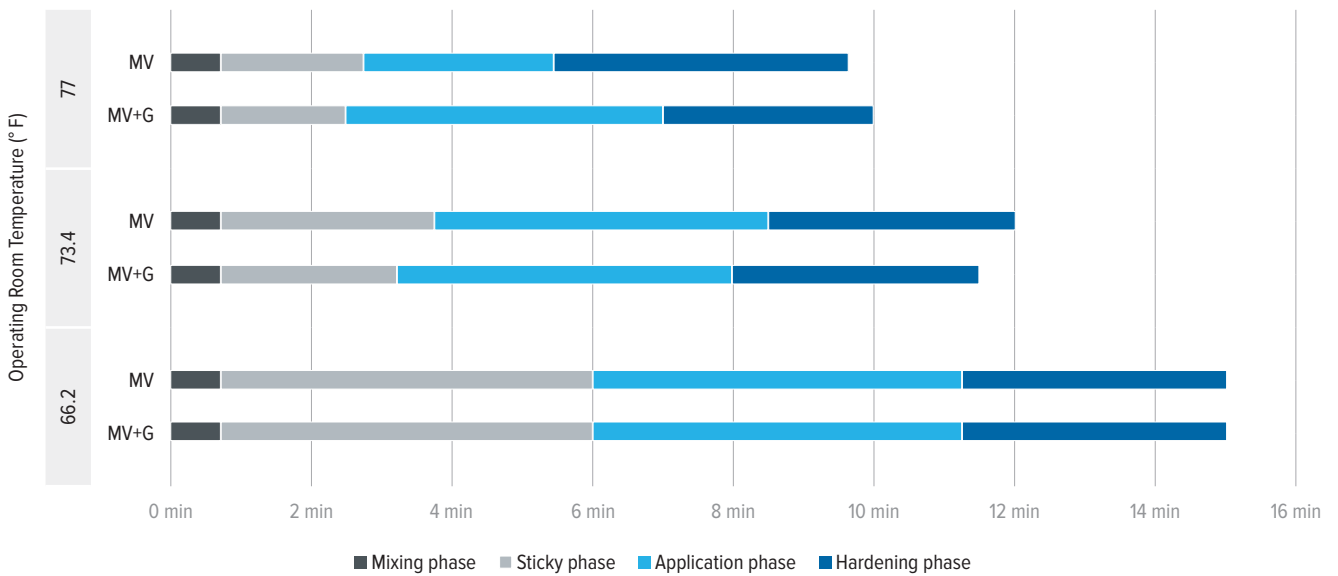
Medium-Viscosity Bone Cement

Arthrex Bone Cement MV and MV+G are lower-viscosity bone cements primarily designed for syringe-based application. When applied manually, clinical judgment is used to determine the appropriate viscosity to safely proceed with the procedure.

Medium-viscosity bone cements are optimized for use with specialized molds that enable surgeons to create high-quality custom modular spacers directly

in the operating room. These spacers provide critical temporary joint stability, preserving soft-tissue integrity by maintaining proper tension and preventing tissue degradation during infection treatment. For detailed procedural information on constructing custom shoulder spacers, refer to the CeMend™ Shoulder Spacer and Molds System surgical technique guide.

Medium-Viscosity Bone Cement Timing



Mixing Characteristics⁷

- › Reduced mixing time (45 seconds)
- › 6- to 8-minute working time for application
- › Complete polymerization at 13 minutes
- › Low polymerization temperature to reduce risk of thermal shock

Bone Cement

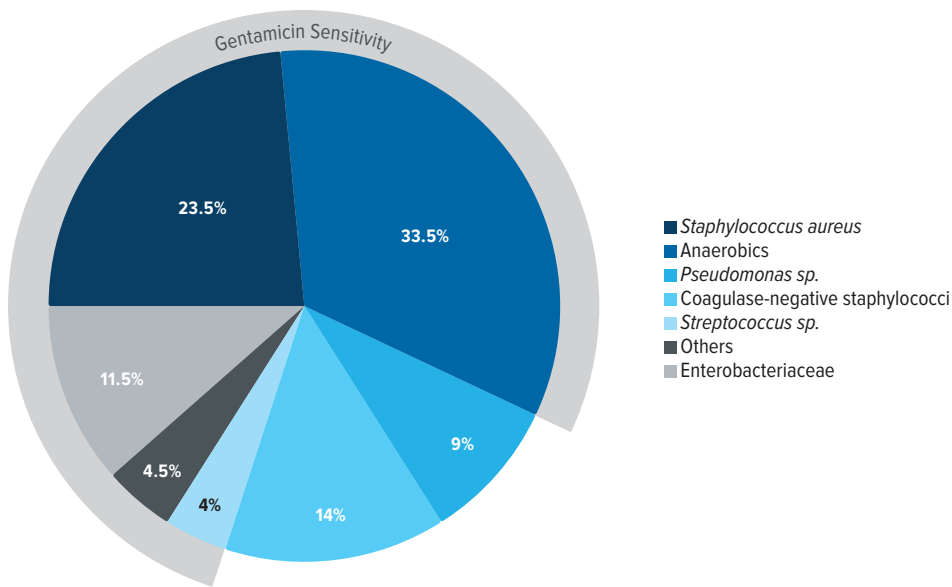
Medium Viscosity	AR-901-MV
Medium Viscosity With Gentamicin	AR-901-MVG

Antibiotics

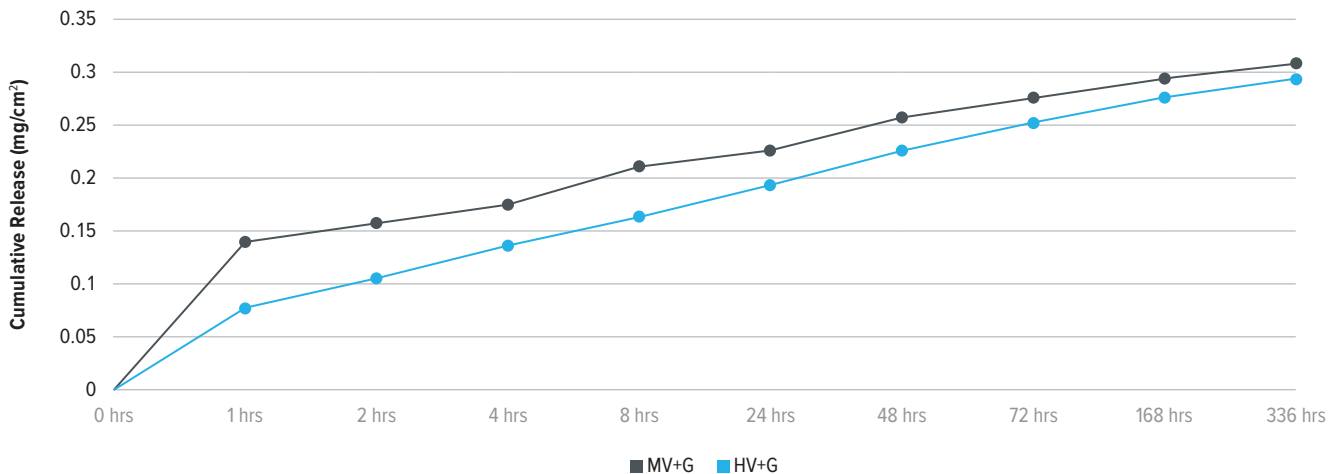
Total joint arthroplasty remains one of the most common and successful procedures in orthopedic surgery. Effective management of periprosthetic joint infections often requires high local antibiotic concentrations. Incorporating antibiotics into the bone cement used for implant fixation has become a widely adopted strategy.

Local antibiotic delivery allows high concentrations at the surgical site while minimizing systemic exposure. Polymethylmethacrylate (PMMA) bone cement is currently the standard material for antibiotic loading and serves as the primary vehicle for local antibiotic delivery in orthopedic surgery.⁸

Common Periprosthetic Joint Infections and Gentamicin Sensitivity



Cumulative Gentamicin Sulfate Release



Most infections around orthopedic implants are caused by common bacteria such as staphylococci and streptococci.^{5,6} Antibiotic-loaded bone cement can be used both during the initial joint replacement and as part of the treatment for periprosthetic joint infection. Many of these bacteria are sensitive to gentamicin. Studies show that gentamicin-loaded cement provides antibacterial activity for varying lengths of time depending on the

organism—for example, up to 1 day for some resistant staphylococci and *Klebsiella*, and up to 6 to 10 days for bacteria like *Escherichia coli* and *Pseudomonas*.⁹ In vitro testing has demonstrated gentamicin release from the cement for as long as 14 days.⁷ Gentamicin elutes from cement with an initial burst in the first few hours, followed by a slower, sustained release over the following days to weeks.

Mixing Accessories

Open Mixing Bowl

Sterile-packed, latex-free disposable plastic bowl includes a spatula for mixing the powder and liquid components of Arthrex Bone Cement.

Arthrex Bone Cement Open Mixing Bowl	AR-901-1
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Closed Mixing Bowl

High-capacity system delivers consistent, low-porosity bone cement through variable-axis mixing and optional vacuum attachment. Features a carbon filter to reduce MMA fume exposure and transparent walls for easy monitoring. Includes a latex-free bowl, spatula, and disposable curette.

Arthrex Bone Cement Closed Mixing Bowl	AR-901-2
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Mixing Syringe and Gun

Closed mixing and injection system for up to 180 g of bone cement. The transparent mixing syringe enables visual quality control and supports an optional vacuum connection, while a built-in carbon filter helps reduce MMA fume exposure. When used with the injection gun, it provides controlled, precise application.

Arthrex Bone Cement Mixing Syringe	AR-901-3
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Arthrex Bone Cement Syringe Gun, disposable	AR-901-4
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Ordering Information

Arthrex Bone Cement

Arthrex Bone Cement HV	AR-901-HV
Arthrex Bone Cement HV+G	AR-901-HVG
Arthrex Bone Cement MV	AR-901-MV
Arthrex Bone Cement MV+G	AR-901-MVG
Arthrex Bone Cement Open Mixing Bowl	AR-901-1
Arthrex Bone Cement Closed Mixing Bowl	AR-901-2
Arthrex Bone Cement Mixing Syringe	AR-901-3
Arthrex Bone Cement Syringe Gun, disposable	AR-901-4

References

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4. Ciucio F, Viola E, Ghiara M, et al. Le infezioni nella chirurgia protesica di anca e di ginocchio. *Ortopedica.* 2013;126(2):421-430.
5. Iarikov D, Demian H, Rubin D, Alexander J, Nambiar S. Choice and doses of antibacterial agents for cement spacers in treatment of prosthetic joint infections: review of published studies. *Clin Infect Dis.* 2012;55(11):1474-1480. doi:10.1093/cid/cis735
6. Van der Voort P, Valstar ER, Kaptein BL, Fiocco M, van der Heide HJ, Nelissen RG. Comparison of femoral component migration between Refobacin bone cement R and Palacos R + G in cemented total hip arthroplasty: a randomised controlled roentgen stereophotogrammetric analysis and clinical study. *Bone Joint J.* 2016;98-B(10):1333-1341. doi:10.1302/0301-620X.98B10.37116
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9. Chang Y, Tai CL, Hsieh PH, Ueng SW. Gentamicin in bone cement: a potentially more effective prophylactic measure of infection in joint arthroplasty. *Bone Joint Res.* 2013;2(10):220-226. doi:10.1302/2046-3758.210.2000188

This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes.



Arthrex manufacturer, authorized representative, and importer information (Arthrex eIFUs)



US patent information