Heraeus

Medical

PALAMIX®

QUALITY AND FLEXIBILITY IN MIXING



HIGH CEMENT QUALITY AND SAFETY

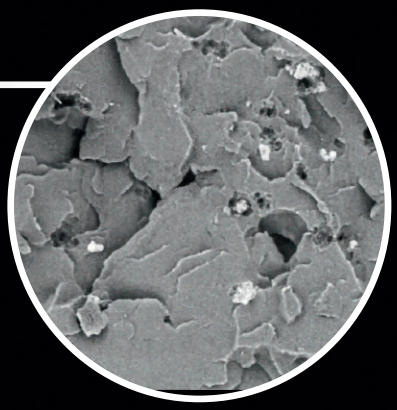
PALAMIX®: FOR SUCCESSFUL SURGICAL OUTCOME

Using modern cementing technique in arthroplasty is key to ensure long survival rates for endoprostheses and a low risk of revision.[1,2] One of its crucial success factors is a homogeneously mixed bone cement.[3]

Vacuum mixing improves cement homogeneity by reducing porosity and strengthens the cement prosthesis interface.[4] The disposable vacuum mixing system PALAMIX® enables standardized mixing of homogeneous bone cement of reproducibly high quality.

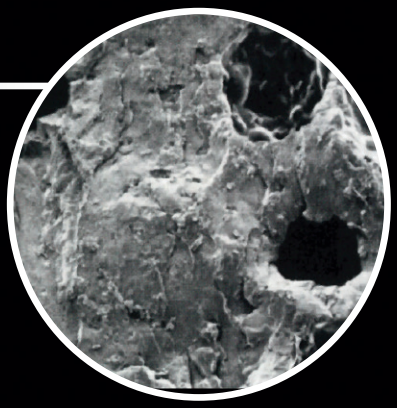
VACUUM MIXING

- porosity of 0.1–1%[5]
- substantially decreases cement implant interface voids[4]
- increases force required to separate cement and implant and improves fatigue strength[4]
- reduces the longer term risk of revision in THA[1]
- substantially reduces MMA* fumes (<10 ppm)[6,7]

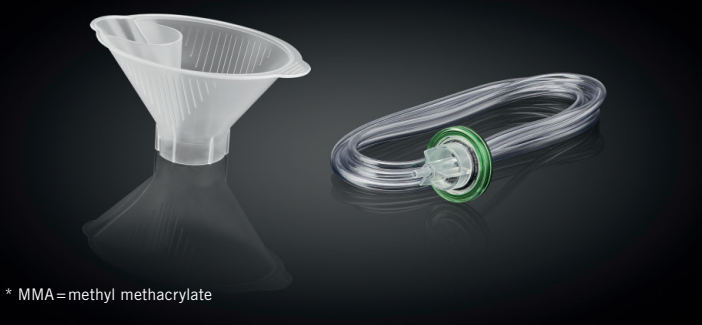


NON-VACUUM MIXING

- porosity of 5–16%[5]
- weaker cement implant bonds[4]
- decreases the fatigue life of the cement[3]
- higher MMA fumes exposure[6]



SAFETY FOR STAFF AND PATIENTS



* MMA = methyl methacrylate

To ensure a high level of safety, PALAMIX® has a filling funnel with two separate sections for the bone cement components. A particle filter in the liquid chamber protects against small glass particles in the bone cement. It avoids injuries and preserves the cement's mechanical quality.
Additionally, the PALAMIX® vacuum hose comes with an active charcoal filter that minimizes MMA fumes during mixing.[7]

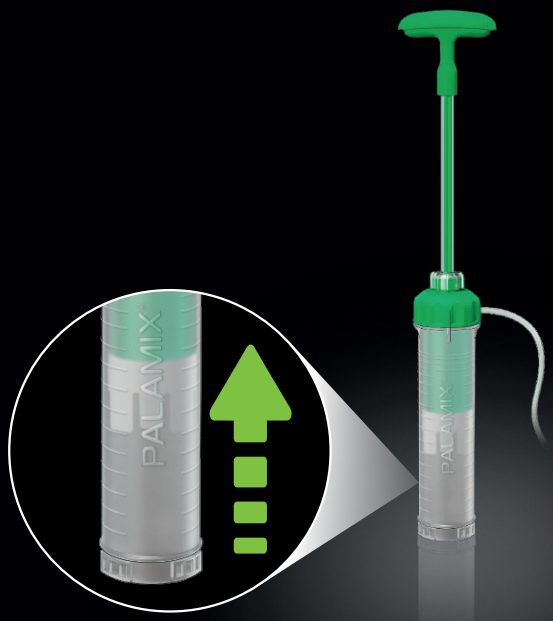
1. Malchau H, Herberts P, Ahnfelt L. Prognosis of total hip replacement in Sweden. Follow up of 92,675 operations performed 1978–1990. Acta Orthop Scand. 1993; 64(5): 497–506. | 2. Breusch S, Malchau H. The Well Cemented Total Hip Arthroplasty. Theory and Practice. Springer Verlag 2005; 147–148. | 3. Dunne NJ et al. The relationship between porosity and fatigue characteristics of bone cements. | Biomaterials 2003; 24(2): 239–245. | 4. Geiger MH et al. The clinical significance of vacuum mixing bone cement. Clin Orthop Relat Res 2001; 382: 258–266.

MORE CONVENIENCE AND FLEXIBILITY

MIXING AND COLLECTING

With PALAMIX®, the mixing of the components and the collection of the bone cement is carried out under vacuum, which

- facilitates mixing
- saves preparation time before application
- reduces porosity[5]
- results in a homogeneously mixed bone cement that builds the basis for long term success in arthroplasty.[8]



APPLYING AND PRESSURIZING

PALAMIX® provides various options for application and pressurization of bone cement. Different nozzles are available for individual procedures and allow flexibility in surgery. With PALAMIX®, it is even possible to expel the mixed bone cement remaining in the nozzle, thereby minimizing cement waste.
A spatula clip can be attached to the short nozzle to apply a thin cement layer on the bone or prosthesis.

Pressurization results in greater penetration of the bone, improved bone cement interface and increased fatigue strength of the cement.[9] The PALAMIX® system contains two pressurizers for both, hip and knee arthroplasty. The soft material and shape of the femoral pressurizer enhance the sealing of the femur during cement application.[10]
In knee surgery, the included knee pressurizer helps to increase the cement's interdigitation into the tibial plateau.[10]



5. Wang JS. The Benefit of Vacuum Mixing. In: The Well Cemented Total Hip Arthroplasty 2005. Springer Verlag; 107–112. | 6. Kuehn KD. PMMA Cements. Springer Verlag 2014; 262. | 7. Jelecevic J et al. Methyl methacrylate levels in orthopedic surgery: comparison of two conventional vacuum mixing systems. Ann Occup Hyg. 2014; 58(4): 493–500. | 8. Breusch SJ, Kühn KD. Bone cements based on polymethylmethacrylate. Der Orthopäde 2003; (32): 4–50. | 9. Wang JS. Femoral Pressurisation. In: The Well Cemented Total Hip Arthroplasty 2005. Springer Verlag; 160–163. | 10. Data on file at Heraeus Medical GmbH.

PALAMIX®

ADVANTAGES AT A GLANCE

- homogeneous bone cement of reproducibly high quality
- convenient and intuitive handling
- time saving thanks to collection under vacuum
- various application options for flexibility in surgery
- safety for staff and patients



PALAMIX®	Description	Content	REF
PALAMIX® uno	Vacuum mixing system with collection under vacuum for up to two pouches (2 x 40)	10	66057893
PALAMIX® duo	Vacuum mixing system with collection under vacuum, with two cartridges for up to four pouches (4 x 40)	10	66057897
PALAMIX® medium nozzle	Flexible, conical nozzle; ∅ 8.7 – 12.6 mm	10	66043960
PALAMIX® slim nozzle	For use with low-viscosity bone cements; ∅ 7 mm	10	66036747
PALAMIX® cement gun	Reusable cement gun	1	66036163
PALAMIX® vacuum pump	Vacuum pump	1	66036748

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