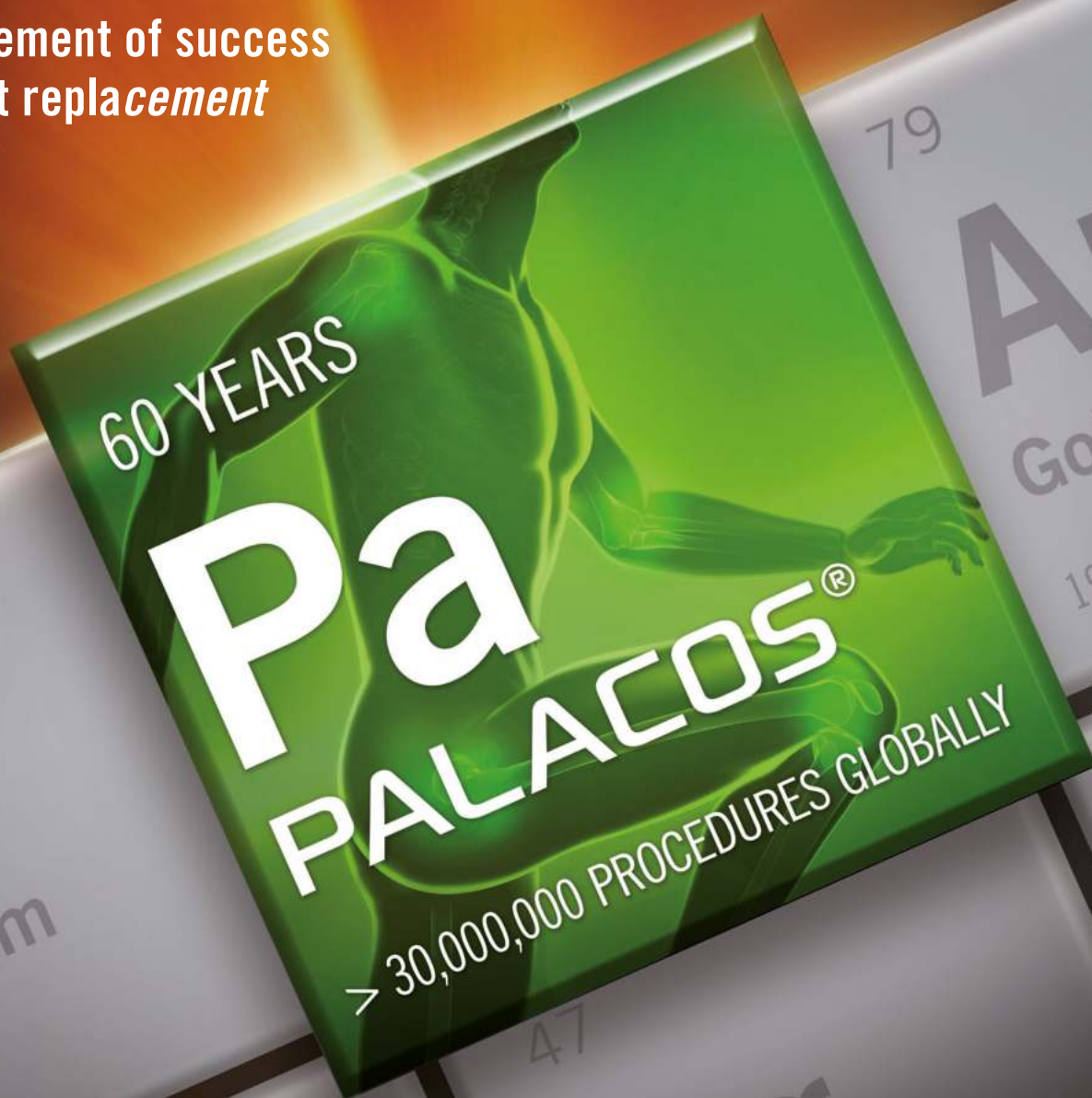


# PALACOS®

The element of success  
in joint replacement



# TRUST IS EARNED

## PALACOS® – THE ELEMENT OF SUCCESS

Demographic changes, increased life expectancy and earlier time of joint replacement all mean that the number of joint replacements has increased and will continue to increase. The main concern of both doctor and patient is to achieve

a long life for the endoprosthesis. Critical for the long-term success of a cemented endoprosthesis is the choice of bone cement: Relying on PALACOS® leads to a lower revision rate compared to other bone cements.<sup>(1)</sup>

Hip



-25 %

Knee



-13 %

**Lower revision rates when using PALACOS® R+G  
compared to other bone cements<sup>(1)</sup>**

(1) NJR Data Supplier Feedback (summary reports); Cumulative revision rates (2007–2019) status May 2019. Current report accessible at <http://herae.us/njr-data>  
We thank the patients and staff of all the hospitals in England, Wales, Northern Ireland and the Isle of Man who have contributed data to the National Joint Registry. We are grateful to the Healthcare Quality Improvement Partnership (HQIP), the NJR Steering Committee and staff at the NJR Centre for facilitating this work. The views expressed represent those of Heraeus Medical GmbH and do not necessarily reflect those of the National Joint Registry Steering Committee or the Health Quality Improvement Partnership (HQIP) who do not vouch for how the information is presented.

# GLOBAL LEADER IN CLINICAL EVIDENCE

## PALACOS® – THE MOST STUDIED BONE CEMENT

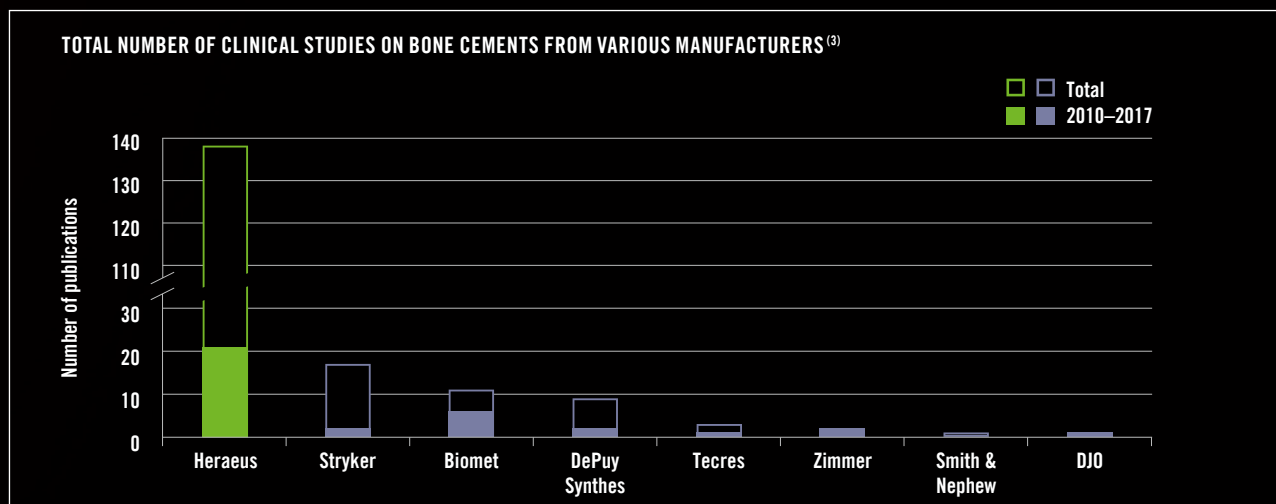
PALACOS® has been successfully used for 60 years in arthroplasty for effective and permanent fixation of implants in bone. Its proven clinical expertise is demonstrated by more than 30 million procedures worldwide.<sup>(2)</sup> Among all

bone cements, PALACOS® is a leader in the number of published studies.<sup>(3)</sup> The evidence-based expertise goes as far back as 1961 and is continually being expanded. Trusting in PALACOS® means trusting in clinical evidence.

More than  
**130 studies**  
according to JBJS\* criteria

Over  
**20 publications**  
since 2010

Worldwide  
**9.000 patients**  
in the studies



\* JBJS = The Journal of Bone & Joint Surgery

(2) Data on file.

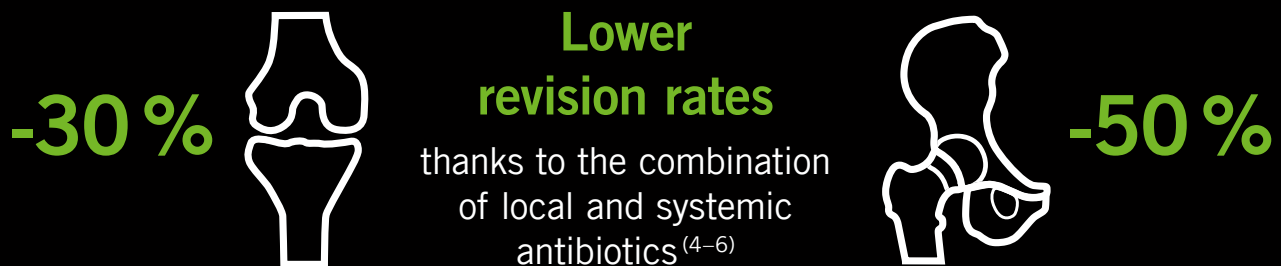
(3) Pilz V, Hanstein T. A Literature Review of the Clinical Evidence Situation of Bone Cements. Research & Reviews: Journal of Medical and Health Sciences 2018; 7(1): 31–36.

# FIXATION AND LOCAL ANTIBIOTIC RELEASE

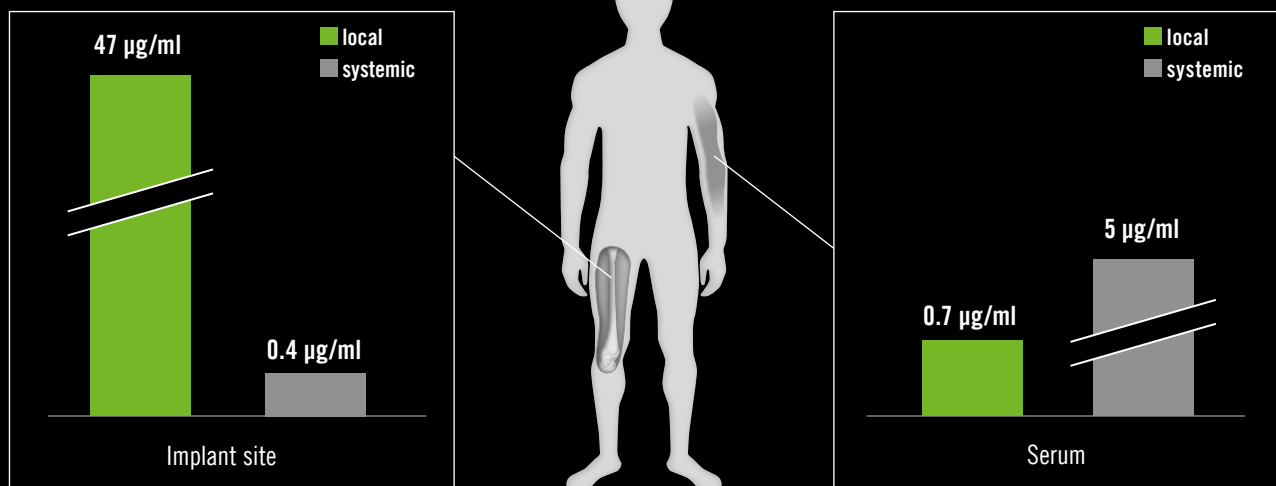
## PALACOS® R+G – OPTIMAL COMBINATION

Along with implant fixation, bone cement is also used as a carrier of antibiotics. This means that antibiotics can also exert their effects in difficult to access compartments such as bones and joints. Compared to systemic antibiotic prophylaxis alone, the combination of local and systemic

administration of antibiotics achieves the best preventive results in arthroplasty: 30% lower revision rates in primary knee arthroplasty and 50% lower revision rates in primary hip arthroplasty.<sup>(4–6)</sup>



### HIGH EFFECTIVE ANTIBIOTIC CONCENTRATIONS



Antibiotic-loaded bone cement enables high effective antibiotic concentrations at the implant site – with low load for the body.<sup>(7)</sup>

(4) Jämsen E et al. Risk factors for infection after knee arthroplasty. J Bone Joint Surg Am. 2009 Jan; 91(1): 38–47.

(5) Espehaug B et al. Antibiotic prophylaxis in total hip arthroplasty. J Bone Joint Surg Br. 1997 Jul; 79(4): 590–595.

(6) Parvizi J et al. Efficacy of antibiotic-impregnated cement in total hip replacement. Acta Orthop. 2008 Jun; 79(3): 335–341.

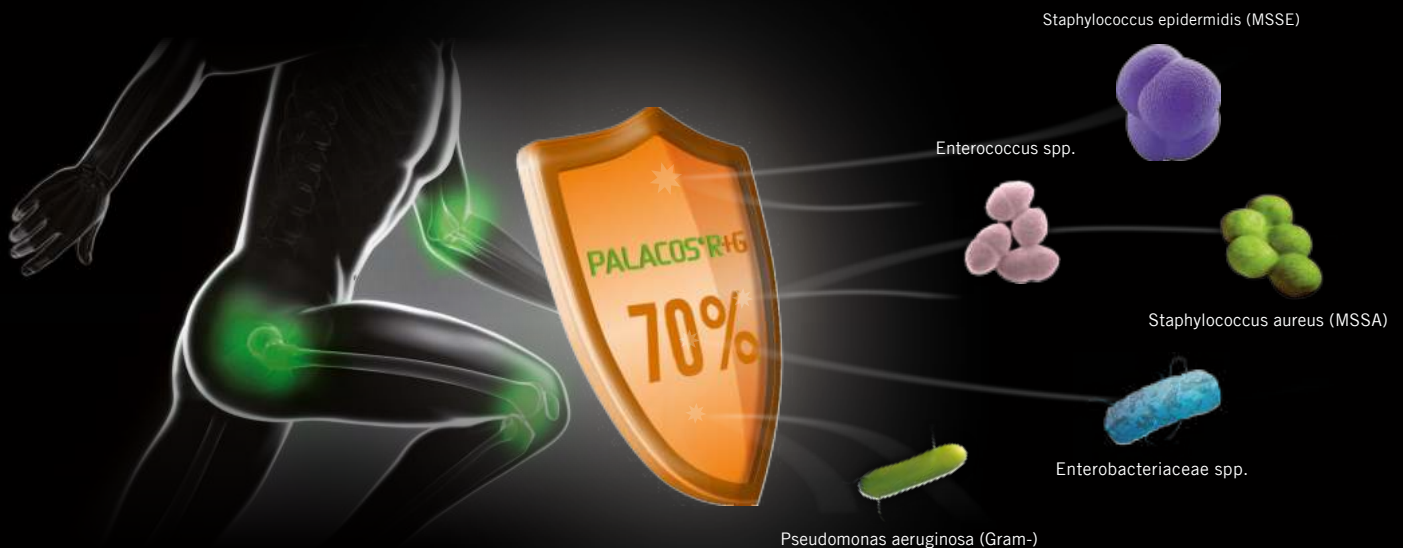
(7) Kühn KD et al. Local antibiotic therapy. Unfallchirurg 2017; 120: 561–572.

# EFFECTIVE RELEASE OF ANTIBIOTICS

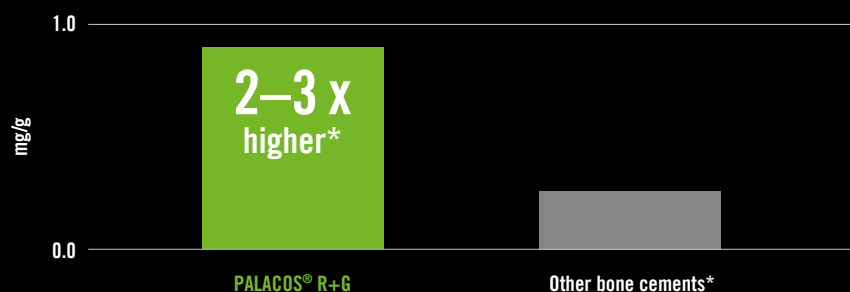
## PALACOS® AND GENTAMICIN – THE PROVEN TEAM

PALACOS® R+G offers good protection against periprosthetic joint infections: The broad spectrum antibiotic gentamicin is effective in the ideal case against up to 70% of the bacteria associated with a periprosthetic infection.<sup>(8)</sup> In addition, the proven and unique polymer structure of PALACOS® R+G enables release rates of antibiotics that are more than

2 to 3 times higher compared to other bone cements.<sup>(9, 10)</sup> In particular during the high-risk period for a periprosthetic joint infection – within the first 48 hours of implantation of the endoprosthesis<sup>(11)</sup> – the antibiotic release from PALACOS® shows a high concentration.<sup>(10)</sup>



### 2 TO 3 TIMES HIGHER RELEASE OF ANTIBIOTICS WITH PALACOS® R+G WITHIN THE FIRST 7 DAYS (CUMULATIVE)<sup>(10)</sup>



\* Mean value calculated by Antibiotic Simplex® P with Tobramycin, Cemex®-Genta LV, SmartSet® GHV, Cerafixgent® Genta C-ment® 1, Cemex®-Genta HV, CMW® 1 G, Genta C-ment® 3, CMW® 2 G, Refobacin® Bone Cement R

(8) Zimmerli W. Bone and Joint Infections. 2015; 132.

(9) Wahlig H, Dingeldein E. Antibiotics and Bone Cements: Experimental and Clinical Long-Term Observations, Acta Orthopaedica Scandinavica. 1980; 51: 1–6; 49–56.

(10) Kühn KD. PMMA Cements. Springer 2014; 147.

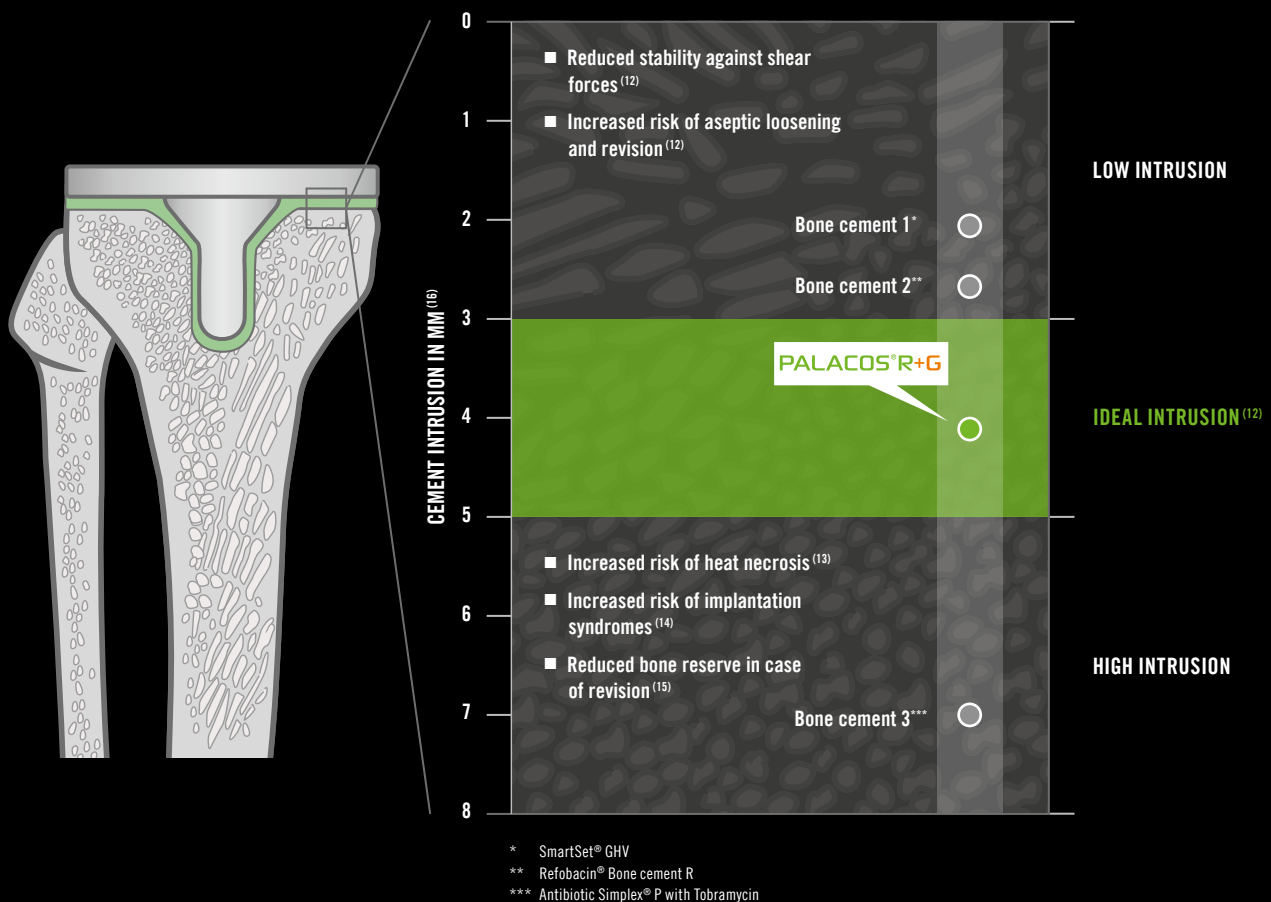
(11) Gristina AG, Naylor P, Myrvik Q. Infections from biomaterials and implants: a race for the surface. 1989; 205–224.

# IDEAL CEMENT INTRUSION

## PALACOS® – THE GOLDEN MEAN

The basic principle underlying stable endoprosthesis fixation is a positive contact between the implant, bone cement and bone. The key role here is played by the ideal cement intrusion. While too little intrusion can lead to an increased risk of aseptic loosening and revisions, a too deep intrusion

can be associated with increased rates of heat necrosis and implantation syndrome. PALACOS® R+G enables an ideal cement intrusion of 3–5 mm depth<sup>(12, 16)</sup> – a critical factor for surgical success.



(12) Vanlommel J. Cementing the Tibial Component in Total Knee Arthroplasty. J Arthroplasty 2011; 26(3): 492–496.

(13) Huiskes R, Slooff TJ. Thermal injury of cancellous bone following pressurized penetration of acrylic cement. Proc. Orthop. Res. Soc., Las Vegas, Nevada, February 1981; 134.

(14) Donaldson AJ et al. Bone cement implantation syndrome. British Journal of Anaesthesia 2009; 102(1): 12–22.

(15) Sharkey PF, Hozack WJ, Rothman RH, Shastri S, Jacoby SM. Insall Award Paper. Why are total knee arthroplasties failing today? Clin Orthop Relat Res 2002; 404: 7–13.

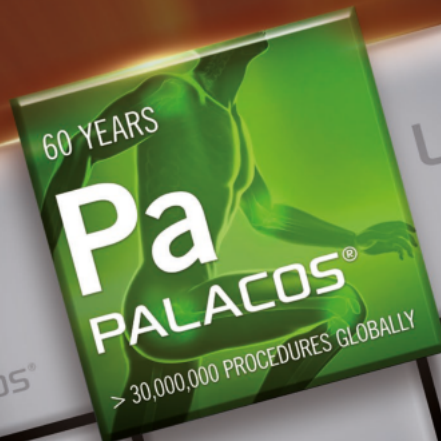
(16) Kühn KD. PMMA Cements. Springer 2014; 214.



PROVEN FORMULA WITH MANY OPTIONS

PALACOS® – THE ELEMENT OF SUCCESS

Proven



LV

PALACOS®

R

PALACOS®

R+G

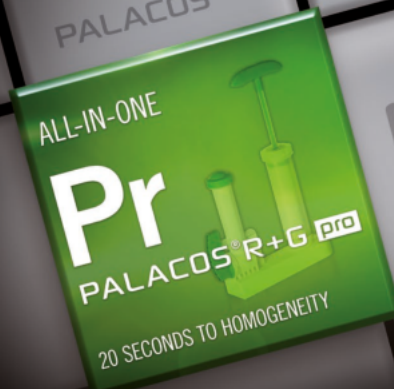
PALACOS®

MV

PALACOS®

LV+G

PALACOS®



MV+G

PALACOS®



Fast

Ready to mix

\* at 23°C room temperature

\*\* compared to PALACOS® R+G

# PALACOS® – ORIGINAL HERAEUS

PALACOS®	Description	Content	REF
PALACOS® R	High-viscosity bone cement	1 x 40 2 x 40	66017778 66017777
PALACOS® R+G	High-viscosity bone cement with gentamicin	2 x 10 2 x 20 1 x 40 2 x 40 1 x 60	66017776 66017775 66017771 66017747 66017772
PALACOS® MV	Medium-viscosity bone cement	1 x 40 2 x 40	66031982 66031984
PALACOS® MV+G	Medium-viscosity bone cement with gentamicin	2 x 20 1 x 40 2 x 40 1 x 60	66031998 66031993 66031995 66032000
PALACOS® LV	Low-viscosity bone cement	1 x 40	66017788
PALACOS® LV+G	Low-viscosity bone cement with gentamicin	1 x 40	66017787
PALACOS® fast R+G	Fast setting, high-viscosity bone cement with gentamicin	1 x 40	66056768
PALACOS® R+G pro*	High-viscosity bone cement ready-to-mix with gentamicin	net 55 net 75	66044273 66044274
Accessories	pro nozzle medium; length: 241 mm; Ø 8.3–12.6 mm (conical); flexible pro nozzle short with knee pressuriser; length: 65.0 mm; Ø 11.3 mm	10 10	66054436 66057202

\*to use with the PALAMIX® cement gun and PALAMIX® vacuum pump

PALAMIX®	Description	Content	REF
PALAMIX® uno	Vacuum mixing system with collection under vacuum (up to 80g bone cement)	10	66057893
PALAMIX® duo	Vacuum mixing system with collection under vacuum, with two cartridges (up to 160g bone cement)	10	66057897
Accessories	PALAMIX® cement gun PALAMIX® vacuum pump PALAMIX® nozzle medium; length: 240.0 mm; Ø 8.7–12.6 mm (conical); flexible PALAMIX® nozzle slim; length: 171.5 mm; Ø 7 mm	1 1 10 10	66036163 66036748 66043960 66036747

Simply order from Heraeus.

[www.heraeus-medical.com](http://www.heraeus-medical.com)