



Biomaterials  
**marPOR®**

## Biomaterials

### The Concept

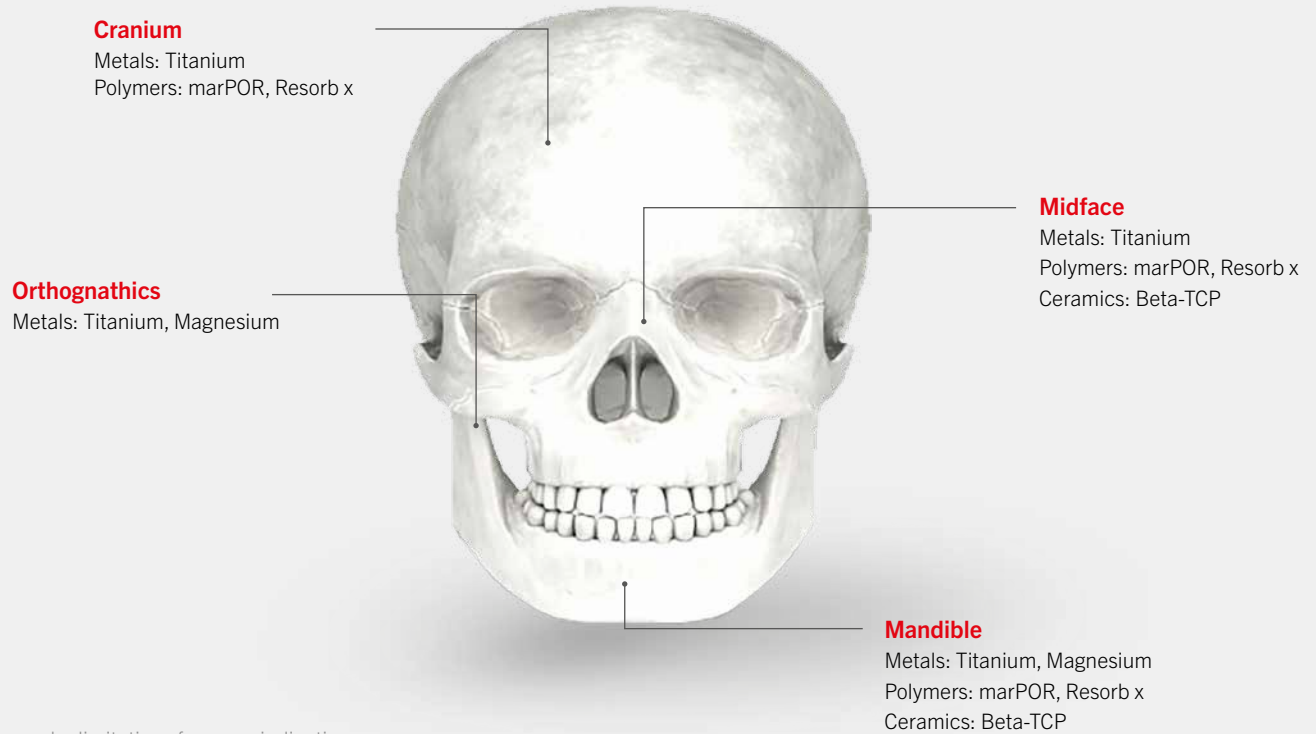
The properties of our different materials are as individual as all patient with their specific requirements. With different materials, KLS Martin offers further alternative for procedures in the CMF area. The aim here is not to replace standardized materials such as titanium, but rather to offer surgeons several options so that they can choose the solution with the best properties for each patient depending on the situation.

**Biomaterial:**

A material used in medicine for therapeutic or diagnostic purposes that comes into direct contact with biological tissues of the body.

**Biocompatibility:**

Ability to perform the desired function without causing any local or systemic adverse response.



### Metals

- Have excellent mechanical properties and biocompatibility.
- Can be used for load-bearing applications.
- Are known as the gold standard for numberless osteosynthesis implants and distractors.

### Polymers

- Are the most commonly used biomaterials due to their wide range of properties.
- Are biocompatible and have different properties like flexibility combined with a certain stability.
- Can be manipulated to have controlled degradation rates or promote tissue regeneration.

### Ceramics




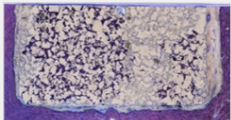
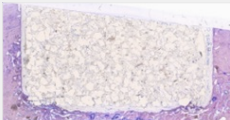

- Are particularly biocompatible and have unique properties that make them suitable for medical applications.
- Provide high stability which is beneficial for load-bearing applications such as dental implants and bone grafts.
- Can have osteoconductive or osteoinductive properties which promotes bone regeneration and minimiz the risk of infection.
- Manufacturing processes can exhibit, for example, controlled degradation rates or imporved tissue regeneration.

## Biomaterials **marPOR®**



UHMWPE is a polyethylene with a ultra-high molecular weight which has been used for many years in medicine for surgical implants - e.g. hip prostheses. It is a non-resorbable polymer that consists of open and interconnecting pores. Thanks to their three-dimensionally interconnected and highly porous structure, marPOR® implants made of UHMWPE provide the ideal conditions for potential vascularization and osseointegration.

Feature, Function,  
and Benefit

	Feature and Function	Benefit
	marPOR® is made of medical grade polyethylene (UHMWPE)	<ul style="list-style-type: none"><li>▪ Light weight</li><li>▪ More natural feeling/haptic than titanium or PEEK implants</li></ul>
	<p>Interconnecting pore structure with different pore sizes</p> <p>In-house invented production process from KLS Martin</p>	<ul style="list-style-type: none"><li>▪ Flexible and porous while maintaining high strength</li><li>▪ Easy handling and manipulating</li><li>▪ Allowing fixation with plates, screws or sutures materials</li><li>▪ Different surfaces possible</li></ul>
	The porose structure of marPOR® allows fluid transfer	<ul style="list-style-type: none"><li>▪ marPOR® implants promote bone ingrowth and vascularization</li></ul> <div></div> <div>Post OP: 3 MonthPost OP: 12 Month</div>
	Cleanroom production and sterile delivery (ETO)	<ul style="list-style-type: none"><li>▪ marPOR® implants come sterile packed</li><li>▪ Ready for immediate usage</li><li>▪ No reprocessing is needed</li></ul>


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## Biomaterials marPOR®

Explanation of icons:

1 Packaging unit

 Plate profile

**STERILE | EO** Sterile packaged implants


### Product Overview

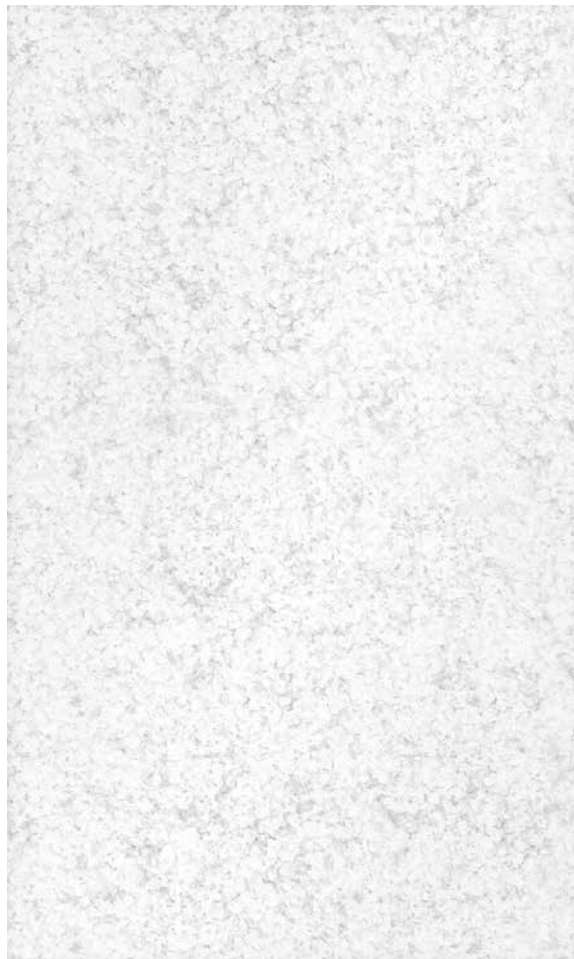
#### Standard Sheets

1/2

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38 x 50 mm

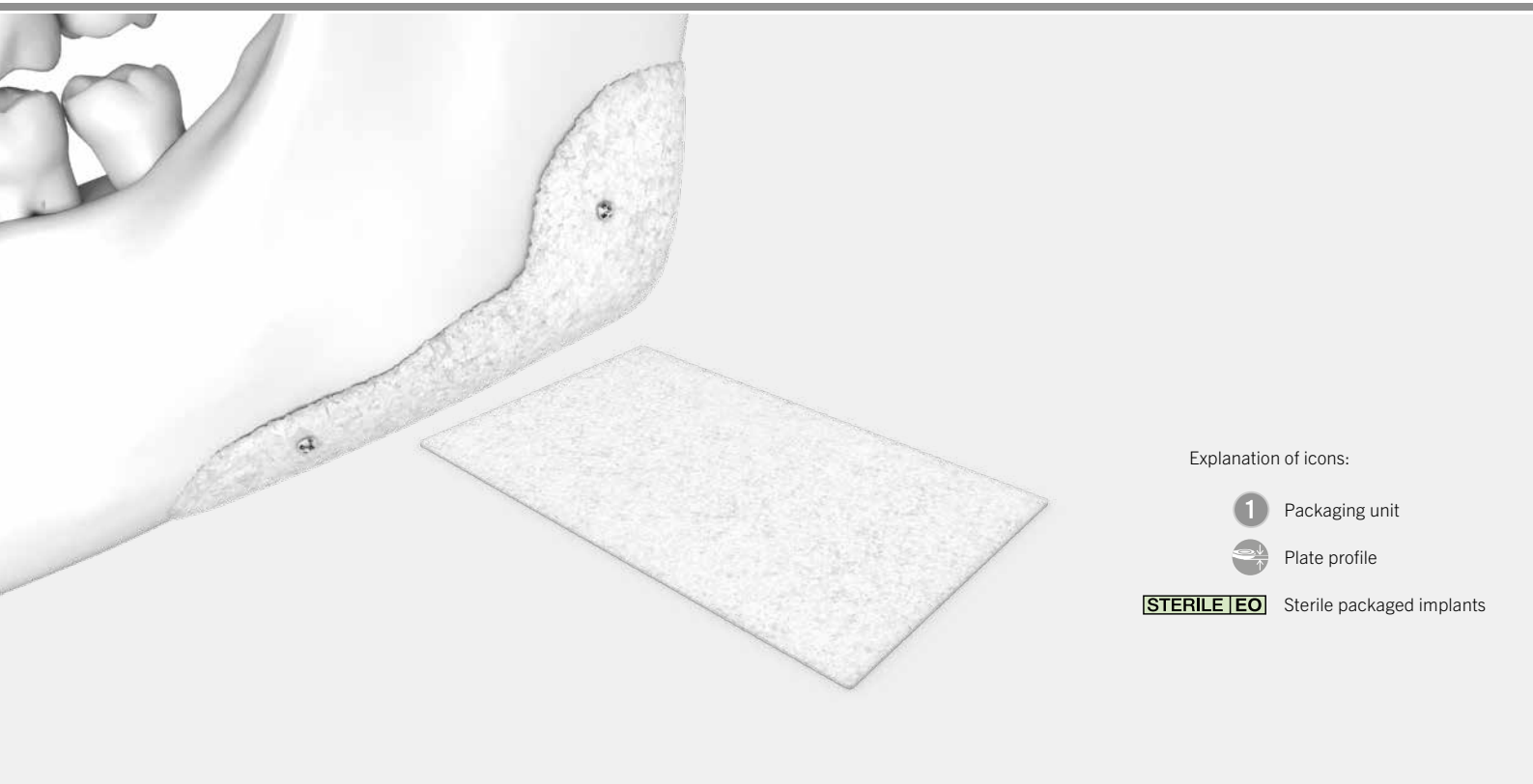
 = 1.5 mm



25-323-17-71 1

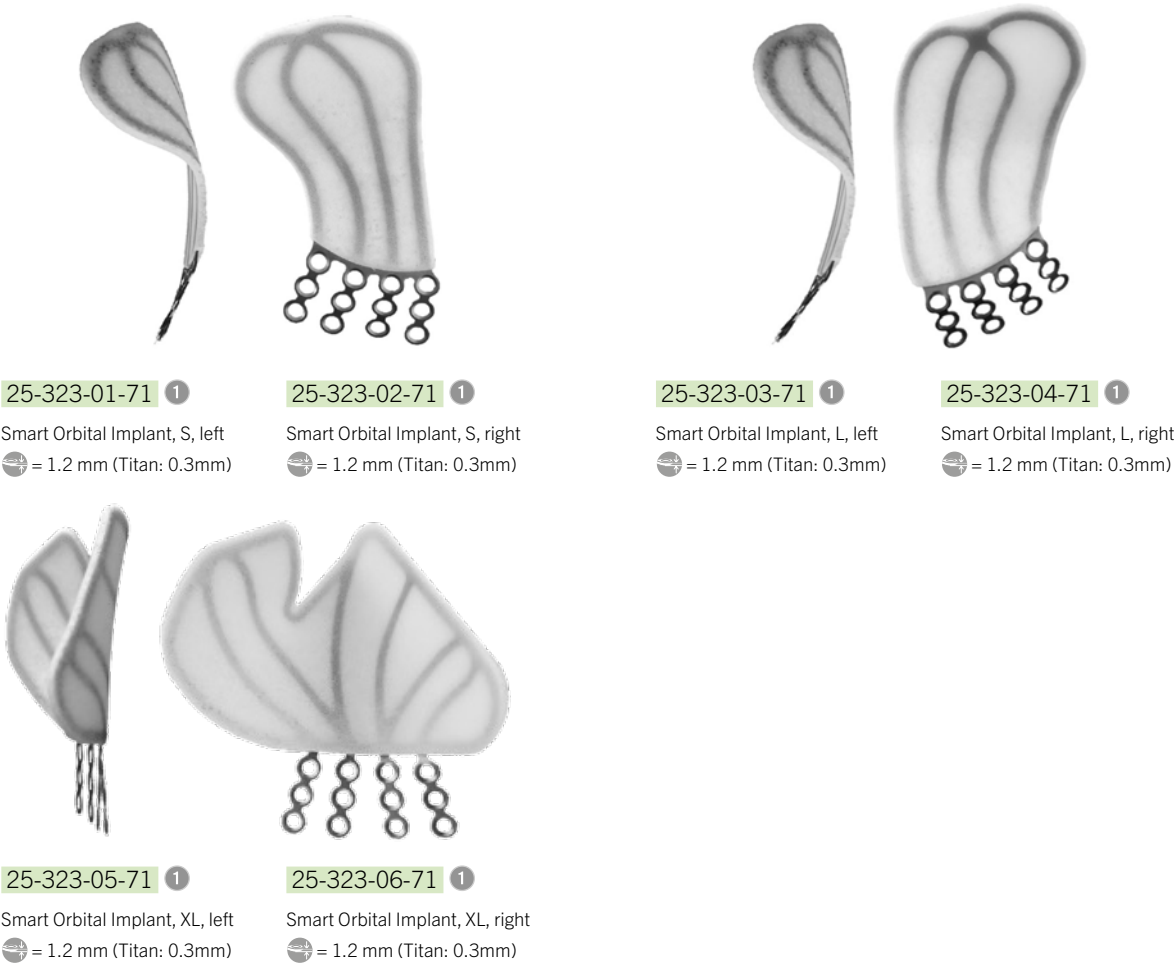
76 x 127 mm

 = 0.85 mm



Product Overview

Smart Orbital Implant



## Biomaterials **marPOR®**

### Product Overview

#### **IPS Implants®**

- Implants are available as onlay or implant
- Can be Used in the whole craniomaxillofacial area
- Also other areas are possible



## Biomaterials marPOR®



### Handling

#### Handling and Fixation

- Sheets and smart orbital implants can be easily modified with a scalpel, scissors or drills
- Multiple easy fixation methods:
  - maxDrive® and drill free screws
  - Conventional miniplates and screws
  - Medical sutures
  - Suture materials



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## Osteosynthesis Accessories

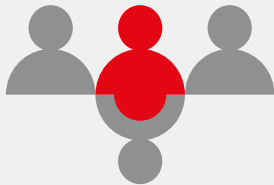


In addition to the marPOR® implant KLS Martin offers all needed accessories for the whole workflow.

- Osteosynthesis accessories plates and screws in the planned diameters
- A screwdriver to fit the planned osteosynthesis screws
- A sterile goods trolley for an excellent workflow management in the OR



## The IPS® Product Range



### IPS CaseDesigner®

As part of the KLS Martin IPS® product range, the IPS CaseDesigner® is more than just 3D planning software. IPS® enables the planning and implementation of surgical procedures on a single platform: from data transfer to the creation of patient-specific implants, models, splints, and templates - more quickly and with greater precision than ever before.



### IPS Gate®

The web-based platform and app guide surgeons and users reliably and efficiently through the process of inquiring about, planning, and completing custom-made products. With the HTTPS standard, IPS Gate® ensures encrypted data transmission, which is additionally certified by the TÜV Süd seal.



### IPS Implants®

Custom-made implants, planning aids, and anatomical models are made from various materials using state-of-the-art fabrication technologies. Due to computer-based planning and functionalized custom-made implants, preoperative planning can be implemented in surgery with unprecedented precision.



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