Surgical Instrument with Greater Comfort

LED SpA specifies THERMOLAST® M from KRAIBURG TPE for lightweight, ergonomic and reusable SURGEON Pencil S

Specializing in the design and production of premium medical electronic equipment, LED SpA has added an innovative handpiece for use in high-frequency surgery to its portfolio. The SURGEON Pencil S provides a number of outstanding features that benefit from the medical conformity, design freedom and aesthetics of KRAIBURG TPE’s THERMOLAST® M thermoplastic elastomer compounds.

Unipolar electrode handpieces are instrumental in state-of-the-art high-frequency electro surgery. Together with various different active electrodes, they are used for sensitive cutting and coagulating procedures that require a firm and comfortable grip. The novel SURGEON Pencil S from LED SpA, based in Aprilia near Rome (Italy) meets these requirements with several parts molded and overmolded in different grades of THERMOLAST® M. The medical thermoplastic elastomer (TPE) from KRAIBURG TPE was chosen by the device manufacturer because of its well-established performance in healthcare along with the supplier’s dedicated customer support, including a comprehensive Medical Service Package.

Designed for Fatigue-Free Electro surgery

“For our advanced medical devices and instruments, we rely on high-performance materials that meet all the strict regulations in healthcare while at the same time offering greater design freedom for functional form and innovation,” says Fulvio Clementini style designer manager, LED SpA. “The outstanding property profile of THERMOLAST® M and the excellent cooperation between our team and KRAIBURG TPE made a significant contribution to accelerating the time-to-market of our SURGEON Pencil S product.”
The sleek and ergonomic design of the lightweight (30 g) grey pencil comprises a central handpiece with a screw-on electrode holder, two different-colored CUT/COAG button rings (yellow/blue) and a cable end. The body parts of the tool are two-component moldings with a solid polypropylene core and a THERMOLAST® M soft-touch skin. Apart from excellent long-term, direct adhesion from this combination, the TPE overmolding ensures the secure non-slip grip of the tapered instrument for fatigue-free surgery and comfort even in wet conditions. The convex shape of the button rings form a supporting area for the surgeon's fingers, and the buttons provide reassuring tactile feedback when engaged or disengaged.

The product accommodates electrodes from 2.4mm in diameter and above, and complies with the safety requirements of AAMI/ANSI Standard HF18 for electrosurgical devices. In contrast to commonsingle-use electrode handpieces, however, the SURGEON Pencil S can be autoclaved up to 100 times at 134°C thanks to the excellent sterilizeability of THERMOLAST® M.

Superior Medical Compliance
KRAIBURG TPE supports customers and molders in healthcare with a unique Medical Service Package that ensures the compliance of its THERMOLAST® M with strict international standards of biocompatibility, purity and quality. All medical compounds are exclusively manufactured on dedicated equipment lines. Tested and certified to USP Class VI (Chapter 88), ISO 10993-5 (cytotoxicity), ISO 10993-10 (intracutaneous irritation), ISO 10993-11 (acute systemic toxicity) and ISO 10993-4 (hemolysis), they are free of heavy metals, latex, PVC and phthalates, and offer consistent high purity for cleanroom processing. The quality control of raw materials used in compounding also covers full traceability on the side of KRAIBURG TPE’s suppliers.
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In addition, all THERMOLAST® M portfolio grades are listed in FDA Drug Master Files (DFM) to document and lock their formulation in accordance with a mandatory change control procedure, including prior notification of any changes. KRAIBURG TPE guarantees the continued availability of the original formulation for at least 24 months after notification before such changes come into effect. This provides maximum controlled quality and supply security to customers in the healthcare, pharmaceutical, medical and diagnostic industries.

Excellent Adhesion and Wide Hardness Range
The medical compounds are available in tailored grades for processing on standard injection molding and extrusion equipment. In two-component applications, they offer excellent adhesion to different thermoplastics such as PP, ABS, ABS/PC. KRAIBURG TPE also supported LED during first trials and sampling on site.

Finished parts molded or overmolded in THERMOLAST® M offer high surface aspect and outstanding mechanical properties, including scaled hardness ratings from 10 Shore A to 55 Shore D, and can be sterilized using common ethylene oxide (EtO), superheated steam, as well as beta or gamma irradiation. THERMOLAST® M generally is supplied in transparent or translucent colors but can also be colored customized while keeping basic medical compliance.
The SURGEON Pencil S from LED SpA for high-frequency electro surgery takes advantage of the superior property profile and medical conformance provided by KRAIBURG TPE's THERMOLAST® M thermoplastic elastomer compounds. (Photo: © 2018LED SpA)

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