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ARKEMA ANNOUNCES A NEW ADVANCED BIO-CIRCULAR MEDICAL POLYMER FOR THE MANUFACTURE OF SURGICAL TOOLS AND MEDICAL DEVICES

With a proven legacy in high performance materials for medical applications, Arkema now announces the launch of a new high rigidity Advanced Bio-Circular polyamide 11 medical polymer intended to replace metal and traditional polymers in demanding medical applications.

The new polymer offers a combination of features in terms of physical performance, lightweight and sustainability. More and more, medical device manufacturers are demanding the best of both worlds, especially in terms of their drive toward improved CSR (corporate social responsibility) and climate change impact:

- Biocompatibility
- As high performing as metal
- Easy to process
- Lightweight
- Allowing for a perfect finish
- High resistance to aggressive chemical agents and repeated sterilization cycles
- >98% Bio-based carbon – with a climate change impact that is typically 40 to 50% lower than competitive fossil based alternatives; Strong reduction in depletion of natural resources (fossil fuels)
- Recyclable – especially as part of Arkema’s closed loop and open loop Virtucycle® recycling programme

Arkema’s Advanced Bio-Circular (ABC) materials have a long, proven legacy in some of the world’s most demanding applications. These bio-based, recyclable polymers are derived from Arkema’s flagship amino 11 chemistry, which in turn, is derived from the oil of the renewable castor bean. Castor beans do not compete directly with the food chain and do not cause deforestation.

Formulated with a high content (65%) of glass fibers, the new Rilsan® MED polyamide 11 grade displays a tensile modulus of 18.5GPa, making it an ideal candidate to replace metal for the production of highly demanding surgical tools. The new grade also requires low mold temperatures and injection pressures. Those properties helped early adopters to switch materials easily and to decrease their cycle times significantly whilst maintaining component integrity.

Furthermore, this new material exhibits excellent resistance to gamma, steam, ETO and e-beam sterilization, opening new doors and opportunities for the development of sustainable reusable surgical tools and for the replacement of petroleum based polymers.

The biocompatibility of this new product has been successfully assessed according to USP Class VI, ISO 10993-4, ISO 10993-5 and ISO 10993-10 standards.

“We have found in this new product an ideal material for our surgical tools, easier to process than the PARA (Polyarylamide) we were using before. Its bio-based nature has given us a real advantage to answer our customer’s drive towards more sustainable materials.” said Mark Jessup, Managing Director at Surgical Dynamics, one of the early adopters of this new Rilsan® MED.

« Arkema continues to innovate to offer sustainable and recyclable materials, based on our proprietary polyamide 11 chemistry, to the most demanding and challenging markets. Our medical device customers are becoming more and more vocal on sustainability and Arkema is extremely well positioned to successfully help them transition to renewable materials and reaching their goals to reduce natural resource depletion,» said François Ruas, Health & Beauty Global Market Manager, Arkema High Performance Polymers».

This new polymer is available worldwide and is sold by Arkema’s High Performance Polymers medical distributors.

Arkema’s medical policy : <https://www.arkema.com/global/en/social-responsibility/innovation-and-sustainable-solutions/responsible-product-management/medical-device-policy/>

For further information: <https://www.extremematerials-arkema.com/en/markets-and-applications/consumer-goods-and-healthcare/healthcare-solutions-overview/>

Building on its unique set of expertise in materials science, **Arkema** offers a portfolio of first-class technologies to address ever-growing demand for new and sustainable materials. With the ambition to become in 2024 a pure player in Specialty Materials, the Group is structured into 3 complementary, resilient and highly innovative segments dedicated to Specialty Materials -Adhesive solutions, Advanced Materials, and Coating Solutions- accounting for some 82% of Group sales in 2020, and a well-positioned and competitive Intermediates segment. Arkema offers cutting-edge technological solutions to meet the challenges of, among other things, new energies, access to water, recycling, urbanization and mobility, and fosters a permanent dialogue with all its stakeholders. The Group reported sales of around €8 billion in 2020, and operates in some 55 countries with 20,600 employees worldwide.

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