PRESS RELEASE

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ARKEMA FOCUSES ON MANY PATHS TO SUSTAINABILITY AND INNOVATION AT FORMNEXT 2024

Arkema, a world leader in specialty materials, will meet with partners across the value chain to discuss sustainability and innovation for the additive manufacturing (3D Printing) industry in Frankfurt, Germany, November 19-22, Hall 12.1, Booth C129. Arkema offers a wide range of solutions and materials for 3D printing applications, with a focus on the industrial manufacturing, transportation, dental, medical and consumer goods markets.

"Arkema is exploring every possible channel to improve the performance and sustainability of 3D printed materials," Brad Rosen, Global Business Director for 3D printing at Arkema, said. "We look forward to meeting with partners and others in the industry at Formnext to showcase and discuss what the future holds for this industry."

Arkema offers multiple technologies for 3D printing applications, including liquid resins for UV curing, thermoplastic powders for powder bed fusion and thermoplastic pellets for filament extrusion.

Sustainability through innovation

Arkema will showcase a range of existing and new initiatives that help customers achieve their goals in decarbonization, innovation, and manufacturing efficiency. These initiatives are designed to support our customers' sustainability targets and enhance material performance. Examples include:

- **Lower carbon footprint bio-mass balance UV/LED/EB Curable Resins**: Arkema is launching a new range of bio-attributed resins, with carbon footprint reduction of up to 40%, as part of the company's ongoing Mass Balance* efforts globally. These products are produced at ISCC+ certified plants in China and France (US sites to follow in 2025).

- **Bio-based UV performance resins:** Arkema is expanding its bio-based UV-cured performance resins and achieves new certifications through the USDA BioPreferred® Program:
  - **Sarbio® 7407** flexible acrylate oligomer contains 84% USDA certified biobased content and enables elastomeric performance.
  - **Sarbio® 7405** toughening oligomer with 50% biobased content offers an excellent balance between hardness and flexibility.
  - **N3xtDimension® N3D-PR184-BIO** industrial and consumer modeling material that contains 53% USDA certified biobased content and exhibits stiffness, accuracy, resolution and easy processability.

- **Lower Carbon Footprint PA11**: Arkema has achieved a carbon footprint of 1.3 kg CO2e/kg for the global production of its bio-based polyamide 11 chain, according to ISO14040, 14044, and 14067 standards.

- **Virtucycle® Recycling Program**: Arkema's Virtucycle® program develops partnerships to collect used polyamide powders and printed parts, including industry leaders such as EOS, HP, Materialise and Sculpteo.

- **Easy3D On-Demand Printing Service**: Arkema's Easy3D platform provides a material selection tool and access to qualified suppliers for on-demand 3D printing services, developed with 3YOURMIND.

Sustainability through industry partnership

Arkema will showcase multiple partnerships, including:

- **Game-changing PA12 material enhancing Selective Laser Sintering (SLS) technology:** Arkema is introducing new Orgasol® PA12 powders with the highest powder recyclability among PA12 powders on the market. Addressing refresh rate, which is the main cost driver for SLS users, these Orgasol® PA12 powders ensure substantial cost savings for PA12 users (reducing Variable Costs by up to 50%), while producing parts with superior aesthetics and smoother surface finish.

- **Reusable Thermoplastic Powders Enabling HP 3D HR PA12S Launch**: Arkema's PA12 powders have enabled the launch of HP 3D HR PA12S, offering high reusability and excellent surface finish for HP's Multi Jet Fusion (MJF) technology.

- **UV materials on Stratasys DLP printers:** Arkema and Stratasys partner to qualify four additional N3xtDimension® photocurable resins on the Stratasys P3$ DLP Origin® solution using the OpenAM platform. These advanced materials are engineered to enhance printing precision and versatility, offering a range of benefits such as
    - High-temperature resistance (N3D-HT511)
    - Flame retardancy (N3D-FR512)
    - Toughness (N3D-TOUGH784)
    - Higher bio-based content for modeling (N3D-PR184-BIO)

  Stratasys is pushing the boundaries of innovation with their open platform, catering to diverse industries including automotive, aerospace, dental, and industrial.

- **UV materials on Rapid Shape DLP printers:** Rapid Shape and Arkema continue their strategic partnership to push additive manufacturing forward through a selection of N3xtDimension® formulations certified on Rapid Shape's DLP 3D printers. N3D-PR184-BIO modeling resin with over 50% bio-content, N3D-TOUGH784 toughening resin and N3D-HT511 high-temperature resin will be accessible on Rapid Shape's open platform systems for precise modelling to high-volume industrial applications.

- **UV flame retardant material on Axtra3D® printers:** Arkema and Axtra3D partner to qualify N3xtDimension® flame retardant resin (N3D-FR512) on their Lumia X1 printer powered by their breakthrough HPS (Hybrid PhotoSynthesis) technology that images with the laser and DLP simultaneously. Lumia X1 offers exceptional precision, smooth surfaces and fast print speeds for maximum efficiency. The N3xtDimension® resin performance in flame retardance, printing, and material properties and Axtra's HPS printing technology will enable customers to fill previously unmet needs in transportation and electronics applications.

- **SLA resin for electroplating masks used in aerospace applications**: Arkema and Figure Engineering have partnered to develop an SLA resin designed for 3D printing masks used in electroplating. This collaboration aims to address the challenges of traditional masking methods in the aerospace and defense industry by providing a more efficient and cost-effective solution. Figure Engineering's new material Resist 3D™, incorporating Arkema's photocurable materials, offers significant labor and material cost reductions while improving the overall efficiency of the electroplating process.

To learn more, visit the Arkema booth, Hall 12.1, Booth C129, at Formnext in Frankfurt, November 19-22.

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Stratasys, Origin and P3 are trademarks or registered trademarks of Stratasys Ltd
Axtra3D is a registered trademark of Axtra3D, Inc.
Resist 3D is a trademark of Figure, Inc.

* Mass Balance: Mass balance chain of custody is designed to track the total amount of the content in scope through the production system and ensure an appropriate allocation of this content to the finished goods based on auditable bookkeeping. Property conservation principle is set to ensure that the total certified output does not exceed its original input and take into account the appropriate conversion losses and production / assembly ratios. "The ISSC+ certification of the whole supply chain guarantees that the origin of the renewable sources meets ISCC+ standards for sustainable feedstocks.

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 92% of Group sales in 2023, 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 € 9.5 billion in 2023, and operates in some 55 countries with 21,100 employees worldwide.

Press contact:
Mike Crisp +1 864 525 9307 mike.crisp-ext@arkema.com