

**PRESS RELEASE**

## **Cannon EG-AX system for optimum processing of expandable graphite filler used as a flame retardant in flexible PU foams**

*Patented multicomponent mixing head controls and reduces critical mechanical stress of expandable graphite flakes preserving integrity of PU formulation*

**Caronno Pertusella, (Varese), Italy, November 17, 2021**

Cannon Afros, a company of Cannon Group, which specialises in mixing equipment and dosing systems for polyurethanes (PU) and urethane elastomers, has developed the EG-AX system which includes a high-pressure foaming machine and patented multicomponent mixing head which allows the speedy processing of expandable graphite filler while maintaining the integrity of the flakes.

Expandable graphite (EG) is an inorganic flame retardant which has a mineral origin and is derived by treating flake graphite with reversible intercalation reagents such as nitric acid and sulphuric acid. When exposed to heat it will expand or exfoliate and create an intumescent layer on a material's surface and is especially effective in flexible PU foams. However, expandable graphite filler is also sensitive to mechanical stress when incorporated into the PU formulation during processing and requires careful handling. In fact, it increases the release of sulfuric acid, which damages the catalyst in the polyol.

“Our Cannon EG-AX system features a patented multicomponent mixing head available in different sizes equipped with special stream distributor and injector that shortens the high-pressure recycling time down to about one second, thereby greatly reducing the shear stress on the expandable graphite flakes in the polyol formulation,” said Stefano Andreolli, Sales Manager, Automotive Applications. “This system preserves the formulation in the foaming machine up to 3 times longer than conventional foaming machines.”

Flexible PU foams are low density foams with open cells and are widely used in seating applications due to their design versatility and comfort factor, especially in railway passenger public transport which must meet the highly stringent EN 45545 fire safety norm.

However, flexible PU foams are intrinsically flammable and require high performing flame retardants and expandable graphite filler is considered one of the most effective to combat fire



propagation. Heat generated by a fire causes the graphite filler to expand, increasing its volume up to 300 times. This forms a low-density worm-like intumescent layer on the surface of the PU foam that prevents heat and oxygen transfer, slowing the spread of fire and minimizing the harmful effect of combustion - the creation of dangerous toxic gas emission and fumes.

Cannon is exhibiting at Booth F14 at UTECH 2021 in Maastricht, the Netherlands (November 16-18).

#### About Cannon Afros

Cannon Afros, a company of the Cannon Group founded in the early 1960s, is the world's leading supplier of dosing systems, mixing equipment and processing technologies for polyurethanes and multi-components resins. Today Cannon Afros offers an extensive range of processing technologies for molding, pouring, injection, spraying, and manufacturing abilities dedicated to a comprehensive range of resins such as polyurethanes, silicones, elastomers, epoxy resins, phenolic foams, and bi-component adhesives. Cannon Afros design, manufactures and sells a vast range of equipment from single mixing heads and stand-alone units to complex turnkey and customizable production plants to serve the following main industrial applications: automotive interiors and exteriors, appliances and refrigerator insulation, rigid insulation for the cold chain industry and refrigerated transportation, building and construction insulation, sanitary ware, piping insulation for oil heating and district heating, technical components and medical equipment, flexible padding and seats for furniture and automotive industries, sealing and gluing for lighting and electrical enclosures, and encapsulation and potting for electrical and electronic components.

#### About Cannon Group

Founded in 1962, Cannon Group comprises 29 companies, with a global presence in more than 40 countries and is recognized as a market leader in technologies, processing and molds for polyurethanes and urethane elastomers for the plastics and composites industries. The Group designs and manufactures high- and low-pressure dosing machines and mixing equipment, for continuous slab and discontinuous molded polyurethane foams. Dedication to continuous innovation now positions Cannon Group as a driving force offering the design, manufacture, servicing, and maintenance of equipment also in other key technology areas including: Energy - industrial boilers for standard and special applications, comprising steam boilers, hot water heaters, heat recovery boilers, and thermal oil heaters, with in-house engineering and fabrication services; Water & Wastewater Treatment - deaerators, condensate treatment and recovery, effluent treatment plants, sanitary water treatment and sewage treatment, injection water treatment, demineralization, produced water; and Automation, where Cannon Group offers process digitization and condition monitoring, connect-IT and emissions monitoring. Cannon Group is committed to reducing the ecological footprint of all the Group's technologies and industrial processes offered to the market through energy efficiency, resource consumption reduction and emissions reduction. Cannon Group delivered net sales of €250 million in 2020. To learn more, visit [www.cannon.com](http://www.cannon.com)

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Cannon EG-AX system for optimum processing of expandable graphite filler used as a flame retardant in flexible PU. Photos: Cannon Group