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Cannon Afros extends range of EG-AX kit to process expandable graphite for viscoelastic foams, continuous sandwich panels and poly-iso boards

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Cannon Afros, a company of Cannon Group, which specializes in mixing equipment and dosing systems for polyurethanes (PU) and other reactive resins, has extended the range of its EG-AX multi-component mixing head system to include viscoelastic foams, continuous sandwich panels and poly-iso boards. With the range extension Cannon can now offer the EG-AX system to process expandable graphite in any kind of product, including insulation panels, flexible foams for furniture, molded foams for mass transit as well as integral skin and flexible molded foams for automotive applications.

“We developed our EG-AX system in response to the increasing use of expandable graphite due to other flame retardants being phased out. This includes melamine, which is now classified in the EU as a ‘substance of very high-concern’, and many material suppliers and players in the industry anticipate it too, will soon be phased-out,” said Stefano Andreolli, Sales and Marketing Manager at Cannon Afros, referring to the REACH (European Union’s Registration, Evaluation, Authorisation and Restriction of Chemicals) regulation 203-615-4 issued on June 2022. *“Expandable graphite is considered as an eco-friendly, highly effective intumescent char-forming fire retardant with low smoke and toxicity. However, it’s very fragile and sensitive to mechanical stress, and therefore requires expertise when processed in a PU dosing machine. Thanks to the very short high pressure recycling time before the shot and special injector, the EG-AX system results in far lower particle breakage than other solutions offered on the market. For customers this means double savings. They need less expandable graphite to achieve the same fire resistance, while also reducing waste of chemicals and downtime due to spoiled formulation.”*

Expandable graphite is a fragile and ‘tricky’ flame retardant. If broken, the expandable graphite particles release sulfuric acid, which damages the catalyst blended in polyol. The EG-AX system allows to process high-quantity of expandable graphite drastically reducing the release of sulfuric acid. EG-AX consists of a Cannon AX mixing head with 4 streams - one for slurry made of polyol and expandable graphite, two for isocyanate, fed by a single pump and split into two by a flow divider. A fourth stream is available as an optional input to process additives or blowing agent, depending on the application.

The EG-AX system can also be used for processing other solid flame retardants, such as ammonium polyphosphate (APP). Even though APP is not as fragile as expandable graphite, the base concept of EG-AX of using 2 iso streams and 1 slurry stream allows for very efficient mixing, even with high percentages of filler. For sandwich and board panels requiring a continuous process, a generous proportion of the polyol is drawn from the slurry and injected via the fourth stream, thus allowing much lower injection pressures for the slurry.

At present Cannon EG-AX is already in use with several manufacturers of seats for mass transit, automotive engine covers, sound deadening parts for white goods, insulated piping and sandwich panels. Moreover, those customers who could see and try EG-AX system, selected it for their manufacturing due to easy and economic processing of expandable graphite fire retardant filler.

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-component 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 1965, Cannon Group comprises 30 companies, with a global presence in more than 40 countries, and is recognized as the market leader in technologies for the processing of polyurethanes and urethane elastomers, and multi-component and reactive resin systems for the plastics and composites industries. The Group, operating worldwide, is composed of several companies focused on specific application segments, that work in synergy and combine their experience and know-how to manufacture bespoke solutions based on customer needs for the following main industrial applications: automotive, aerospace, refrigerator insulation, building and construction insulation, technical components and medical equipment, wind power, sanitary, furniture and consumer and industrial goods. Cannon Afros is the world's leading supplier of dosing systems, mixing equipment, and processing technologies, including an extensive array of solutions 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 Ergos is dedicated to manufacturing turnkey plants and machinery for polyurethane, composite, and thermoplastic materials (and die-cast aluminum processing). Cannon Tipos specializes in developing specific tools for a wide range of technologies for plastics and composite materials, supplying dedicated, tailor-made solutions. Cannon Legos is a top-level integrator of machines, equipment, and complete production lines matching the manufacturing requirements of each application and specific geographic limitations.

A comprehensive R&D department support customers worldwide in developing innovative tailor-made technologies and production processes by designing, manufacturing, and installing customized facilities or developing their production projects through the realization of prototype molds, the production of trial parts to tune the process, and part validation. 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 €280 million in 2023. To learn more, visit www.cannon.com

Media Contacts

Alberta Stella
Head of Corporate Marketing Communications
+39 347 63 76 787
astella@cannon.com

Peter Ibes
Bridge B2B (PR Agency)
+31 657 321 649
p.ibes@bridge-b2b.nl



Cannon Afros has extended the range of its EG-AX multi-component mixing head system for expandable graphite to include viscoelastic foams, continuous sandwich panels and poly-iso boards. Photo Cannon Group