New active ingredient combination for aircraft and automotive construction

Fatliquoring agent for flame-retardant leather

Leverkusen – Trumpler GmbH & Co. KG of Worms, Germany, has developed a fatliquoring agent known as Truposol® FRF to provide leather for use in aircraft and cars with a flame-retardant finish. What’s more, the new product is halogen-free and low-fogging. The preparation is based on a flame retardant from the Disflamoll® range manufactured by the LANXESS chemicals group. It consists of an organic phosphorus compound that reduces the fire risk by inhibiting the combustion process and slowing down, or in some cases even preventing, the spread of fire.

Otto Mauerer, an expert in flame retardants in LANXESS’s Functional Chemicals business unit, has been involved in the development of the product right from the start: “We are proud that our idea has evolved into a commercial-grade product. Our flame retardant had already proved effective in other applications and so we were sure that it could also be used successfully in the leather industry.” For trial purposes, Trumpler incorporated the flame retardant in fatliquoring preparations which were then used to treat leather. “We subsequently carried out various fire tests on numerous leather specimens with and without Disflamoll® in our Applications Development department to see how effective the flame protection was,” says Mauerer. “The tests we used included the small flame test according to DIN 4102, Part 1.” This involved exposing the leather specimens to a two-centimeter-high pilot flame for 15 seconds. The specimens treated with fatliquoring agent based on Disflamoll® displayed the best fire behavior, with little damage to the material and no afterglow.

Lightfast Truposol® FRF can be used for the obligatory fatliquoring in the wet finishing process, thereby simultaneously providing the leather with a flame-retardant finish without any extra work or the need for any chemicals. Based on environment-friendly, renewable raw materials, the
fatliquoring agent is free of antimony and halogen compounds and improves the penetration of the fatliquor and the insulation of the fibers. Exhaustion of the fatliquoring floats is excellent, ensuring low COD values. Leather treated with Truposol® FRF has good softness and fullness coupled with a pleasant, silky surface touch. For aircraft applications, the fatliquoring preparation must be combined with other inorganic flame retardants in order to comply with the aircraft standard FAR 25.853, which stipulates that the material must be self-extinguishing within 15 seconds after flame impingement by means of a kerosene burner for one minute. The flames must be no more than 15 centimeters high.

Disflamoll® is used primarily in plastics and rubbers, e.g. in numerous articles based on polyvinylchloride (PVC), phenolic resin, polyurethane, cellulose acetobutyrate and acetoxypropionate, polymethylmethacrylate (PMMA), polystyrene (PS), natural rubber, styrene-butadiene rubber (SBR), acrylonitrile-butadiene rubber (NBR) and chloroprene rubber (CR). The flame retardant is highly suitable for use in areas where stringent fire protection regulations apply, such as the mining and construction industries. The flame retardants from LANXESS’s Disflamoll® and Levagard® ranges are also effective on organic substrates and for the flame-retardant treatment of aqueous polymer dispersions that are processed into foam products or coatings. Detailed information on the range of flame retardants from LANXESS can be found on the Internet at www.phosphorus-chemicals.com.

The Functional Chemicals business unit belongs to the Performance Chemicals segment, which posted sales of EUR 1.977 billion in fiscal 2005.

Information for editors:
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Forward-Looking Statements
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