

Media Release

Clariant opens new production unit for halogen-free flame retardants in Hürth-Knapsack

- **Capacity for Exolit® OP doubled - ongoing global trend for halogen-free flame retardants in the electronics and electrical engineering market**
- **New reactive flame retardant products for use in plastics for electronics**

Muttenz, 9 October 2012 – Clariant is today opening a second production unit for the successful flame retardant (FR) Exolit® OP at the Hürth-Knapsack plant near Cologne. The established non-halogenated additive is used primarily in the electronics and electrical engineering (E&EE) sector. The new facility doubles the capacity for DEPAL (diethyl phosphinic acid aluminum salt)-based FRs.

Clariant has established itself as a world leader in non-halogenated flame retardants. By doubling the DEPAL capacity in Hürth, the company is responding to the growing demand for safe and environmentally friendly FRs for plastics in the global E&EE market. Exolit OP (based on organophosphorous compounds) has been manufactured at the Hürth-Knapsack plant since the product line was launched in 2004.

The efficient infrastructure of the Knapsack Chemical park and the central location of the site close to Cologne provide a solid basis for reliable and safe production, and ensure a high level of delivery reliability for customers.

“The strength of demand is demonstrated by the constant increase in utilization since production got underway,” says Michael Grosskopf. “The environmental and safety awareness of our customers has increased considerably, resulting in growing demand for our non-halogenated flame retardants. Key customers are indicating that their requirements will see further strong increases in the years ahead. This timely expansion of our production capacity means that we are ideally positioned to meet this demand.”

Global growth in demand in a range of applications

Exolit OP has proven successful as a halogen-free flame retardant, particularly for engineering thermoplastics such as polyamides and polyesters, and is used in switches, plugs, PC fans, and structural and housing components. Smartphones, washing machines, and airplane parts, among others, contain the product. Other applications include thermosetting resins as well as cable sheaths and insulation made from thermoplastic elastomers. Exolit can give these plastics flame retardant properties that are otherwise only achievable with expensive high-performance plastics which are less easy to work with.

In most cases, a relatively small dose is sufficient to meet the strict fire protection regulations applicable in these market segments, as well as to comply with all environmental legislation such as European Directive 2011/65/EU on the Restriction of Hazardous Substances (RoHS) in electrical and electronic equipment or European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE).

Clariant has developed two new non-halogenated FRs in Hürth-Knapsack under the name Exolit EP specifically for the flame retardancy of epoxy resins. Both products are aimed at the requirements of printed circuit boards and therefore perform vital functions such as minimizing the impact of the FR on the glass transition temperature of the plastic, which is a key parameter in epoxy resin chemistry in this demanding application. In addition, it has been shown that Exolit EP can reduce the quantity of flame retardant required by up to 50% compared with conventional products.

Alongside the Exolit OP and EP product families, Clariant also manufactures the Exolit AP flame retardant, which is based on ammonium polyphosphates (AP). This FR renders polyolefins fit for use in electrical and electronic items and increases the fire resistance time of steel/building structures. Further product groups include Exolit RP, based on red phosphorous in various formulations and dosage forms for polyamides, and Exolit 5060, used for viscose fibers for protective and safety clothing.

“Exolit can be formulated to create a tailored flame retardant system based on product requirements and customer specifications, in either its product form or in synergistic combination with other supporting substances,” says Dr. Adrian Beard, Head of Marketing FR at Clariant. “Together with its cost effectiveness, this makes Exolit perfectly positioned as a comprehensive technological alternative to halogenated and in particular brominated flame retardants.”

Improved health and environmental profile

Plastics containing flame retardants release gases when burning which cause the material to foam, quickly forming a carbonized non-combustible protective layer. This isolates the as yet unaffected plastic against heat and keeps away atmospheric oxygen. Part of the FR also acts in the gas phase by preventing chemical reactions in the flames. Both effects ensure that the fire is not fuelled further and gradually extinguishes itself. This technology can be used to achieve the highest fire resistance classes for plastics.

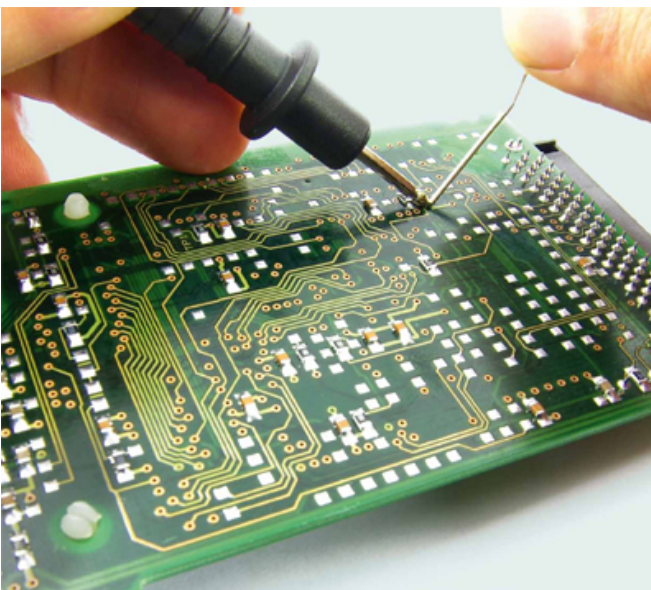
The non-halogenated Exolit products do not contain any of the dangerous substances listed in the RoHS Directive. The flame retardants have barely any negative impact on the properties of the end product and also do not generate corrosive toxic fumes in case of fire, which reduces the risk of fire damage.

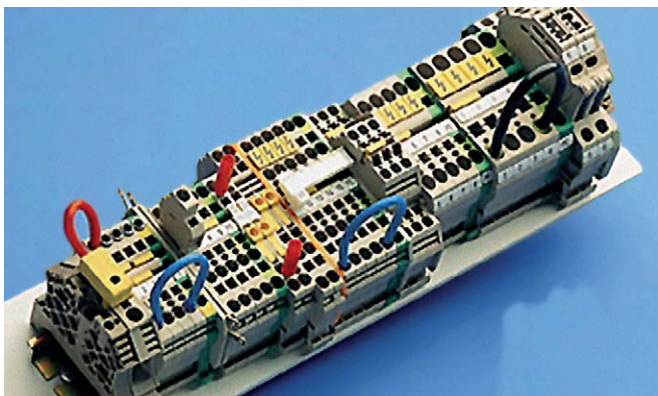
A study by the Fraunhofer Institute for Environmental, Safety & Energy Technology confirmed the product's favorable environmental and health profile. Products containing Exolit OP can also be awarded environmental seals such as the Blaue Engel (blue angel), TCO or the EU eco-label.

As a founding member of the Phosphorous, Inorganic & Nitrogen Flame Retardants Association (pinfa.org), Clariant strives to develop innovative solutions for flame retardant equipment, and thus makes a considerable contribution to sustainable, environment- and health-compatible fire protection. Demand for halogen-free FRs is predicted to continue to rise.

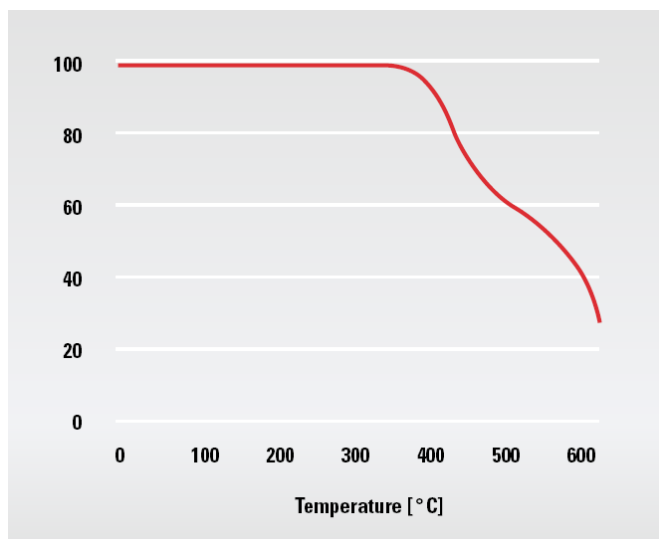


Clariant has doubled the capacity for its environmentally compatible, non-halogenated flame retardant Exolit® OP in Hürth-Knapsack. (Photos: Clariant)





Plastic components in contact with conductive metal parts must comply with the strictest fire protection regulations. Clariant's non-halogenated flame retardant Exolit ensures optimal flame retardance. Typical applications include housing for smartphones and laptops as well as fans, switches and plugs, printed circuit boards, cable sheaths, and insulation. (Photos: Clariant)



Thermogravimetric analysis (TGA) of epoxy resins with integrated flame retardants from Exolit® EP show the halogen-free flame retardant has excellent thermal stability. (Photo: Clariant)

CORPORATE MEDIA RELATIONS

KAI ROLKER

Phone +41 61 469 63 63
kai.rolker@clariant.com

STEFANIE NEHLSSEN

Phone +41 61 469 63 63
stefanie.nehlsen@clariant.com

EUROPEAN MEDIA RELATIONS

ULRICH NIES

Phone +49 6196 757 83 65
ulrich.nies@clariant.com

ALEXANDRA KUTSCHENREUTER

Phone + 49 6196 757 80 12
alexandra.kutschenreuter@clariant.com

EXOLIT IS A REGISTERED TRADEMARK OF CLARIANT.

www.clariant.com

Clariant is an internationally active specialty chemical company, based in Muttenz near Basel. The group owns over 100 companies worldwide and employed 22 149 employees on December 31, 2011. In the financial year 2011, Clariant produced a turnover of around CHF 7.4 billion. Clariant is divided into eleven business units: Additives; Catalysis & Energy; Emulsions, Detergents & Intermediates; Functional Materials; Industrial & Consumer Specialties; Leather Services; Masterbatches; Oil & Mining Services; Paper Specialties; Pigments; Textile Chemicals. Clariant focuses on creating value by investing in future profitable and sustainable growth, which is based on four strategic pillars: Improving profitability, innovation as well as research and development, dynamic growth in emerging markets, and optimizing the portfolio through complementary acquisitions or divestments.

This press release and relevant photography can be downloaded from www.clariant.com / Media or from www.PressReleaseFinder.com

For broadcast-standard video supporting this press release, please visit www.thenewsmarket.com/clariant. If you are a first-time user, please take a moment to register. In case you have any questions, please email journalisthelp@thenewsmarket.com.