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DuPont Modifiers Improve Flame Retardancy, Toughness, Strength of Wire & Cable Polymers

WILMINGTON, Del. Feb. 15, 2005 - DuPont today announced the introduction of tailor-made, low-gel coupling agents for production of improved halogen-free insulation and jacketing for wire and cable. Available in a very broad choice of base polymers, DuPont™ Fusabond® modifiers enable compounders to improve both mechanical properties and flame retardancy by allowing increased filler levels in halogen-free, flame retardant and low-smoke insulation and jacketing compounds used in wire and cable constructions.

Fusabond® coupling agents increase the tensile strength 20 to 30 percent and elongation at break up to 300 to 400 percent for the finished wire and cable product (compared to formulations not using coupling agents) in its unaged state, as well as after aging in air or in an oil environment. The result is a more flexible and durable product, which allows higher filler loadings, so better flame retardancy can be achieved due to higher filler acceptability of the base polymer.

To ensure its wire and cable coupling agents are as fault-free as possible, DuPont has installed state-of-the-art systems to measure and control gels and black specks in their production facilities in Sarnia, Canada, and Shenzhen, China.

“The insulation in wire and cable applications are very thin and production speeds can reach several hundred meters per minute, so it is critical that the compound be very homogeneous with no gels in the compound or in the base resins,” said Penny L Perry, Ph.D., director, DuPont Industrial Polymers. “If gels are present, there could be a fault or failure in the insulation and the wire would have to be cut and welded. In fact, industry specifications require that the product be fault-free for the length of the cable insulation.”

DuPont coupling agents can be used in a variety of polymer families to produce thermoplastic compounds or thermoset compounds that are crosslinked with peroxides. Fusabond® E MB-100D, E MB-100DH, E MB-226DE, E MB-226DY and E MB-439D, which are used to help adhere mineral fillers with polyethylene polymers. Fusabond® C MC-250D, A ME-556D and A EB-560D

perform the same function in ethylene vinyl acetate (EVA) polymers, ethylene methyl acrylate (EMA), ethylene butyl acrylate (EBA) and ethylene ethyl acrylate (EEA) copolymers. Fusabond® P MD-353D can be used for polypropylene polymers. Mineral fillers that can be used include: aluminumtrihydrate, ATH, magnesium dihydroxide, Mg(OH)₂, and/or calcium carbonate, CaCO₃.

Additionally, DuPont licenses its DuPont™ Elvaloy® NH series of technologies that provide ready-to-use formulations for flame-retardant, halogen-free wire and cable applications. Elvaloy® NH is not a product. It is technology that can be used by customers to improve flame retardancy and provide superior chemical and oil resistance for PE and EVA compounds used in harsh environments. DuPont works with customers through scale-up.

DuPont manufactures Fusabond® grades using a variety of base resins and graft levels. Resins in the DuPont™ Fusabond® product line are modified polymers that have been functionalized (typically by maleic anhydride grafting) to help bond polymers used in toughened, filled and blended compounds. The product line includes modified ethylene acrylate copolymers, ethylene acrylate carbon monoxide terpolymers, ethylene vinyl acetates (EVAs), polyethylenes, metallocene polyethylenes, ethylene propylene rubbers and polypropylenes.

For more information about Fusabond®, please visit our website <http://www.dupont.com/industrial-polymers/wireandcable> or call 1-800-438-7225

DuPont is a science company. Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel.

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