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INSIDE TRACK: Plastics add clay to the mix WORTH WATCHING

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By FIONA HARVEY

Plastics add clay to the mix

Adding clay to plastics could improve their qualities for some specialised uses, say researchers in the US. Small amounts of well dispersed natural clay, when added to some plastic composites, change their physical qualities, making them less permeable to liquids and gases, tougher and more flame-retardant.

Lower permeability could improve PET, the standard plastic used in soft-drink bottling, by making it suitable for beer or wine. This is because it would protect the liquid from oxygen.

It could also make a cleaner method of producing flame-retardant plastics, as most of the chemicals used to make plastics flame-retardant today contain bromine, which produces poisonous gases when it burns. When plastics containing clay are burnt, the clay forms a char-layer on the outside, insulating the material beneath.

The polymer clay blends, with which the researchers at Pennsylvania State University have been working, contain about 1 per cent to 5 per cent clay. Adding the clay to the plastic does not change the production method, as it can be added at the final stages of polymer processing.

Thermodynamic forces drive the clay in fine particles through the polymer, dispersing it throughout. The small amounts of clay involved cause no extra wear in the manufacturing equipment. Pennsylvania State University, US; www.psu.edu; tel: 001 814 863 1028 Copyright: The Financial Times Limited