

MoldX[®] A400

Optimized Aluminum Hydroxide (ATH)

DESCRIPTION

MoldX[®] A400 optimized alumina trihydrate is a third generation MoldX product. The MoldX product line is engineered to impart processable viscosities in fiberglass reinforced sheet molding compounds (SMC) at very high loadings as compared to typical ATH products. However, MoldX A400 goes further by incorporating technology that improves the fire retardant and smoke suppressant performance. Less MoldX A400 is needed to pass the same flame retardant certifications that would be required of an ATH grade, such as MoldX[®] A110 optimized ATH.

The unique characteristics of MoldX A400 allow compounders to overcome equipment processing limitations via the development of low viscosity formulations that pass the most stringent flame retardant tests. The increased flame retardant efficacy of MoldX[®] A400 allows for: 1. The elimination of halogenated resins and other additives; and 2. Reduced ATH loading levels necessary to pass UL94 VO, UL94 5VA, Class I ASTM E84 as well UL 723. These advantages give reduced heat release rate, reduced smoke generation, improved mechanical properties, and lower process viscosities in thermoset formulations.

MoldX[®] A400 optimized ATH is particularly well-suited for SMC, and it can also provide low cost flame retardancy and smoke suppression in other thermoset processes such as: epoxy potting, wet-mat, spray-up, hand lay-up, and bulk molding compounds (BMC) that contain reinforcing fibers (patent pending).

TYPICAL CHEMICAL ANALYSIS

| | |
|------------------------------------|-------|
| Al(OH) ₃ | 99.6% |
| SiO ₂ , % | 0.005 |
| Fe ₂ O ₃ , % | 0.007 |
| Na ₂ O (total), % | 0.2 |
| Na ₂ O (soluble), % | 0.025 |
| Loss on ignition (1000°C), % | 34.6 |
| Free Moisture (105°C), % | 0.2 |

TYPICAL PHYSICAL PROPERTIES

Screen Analysis

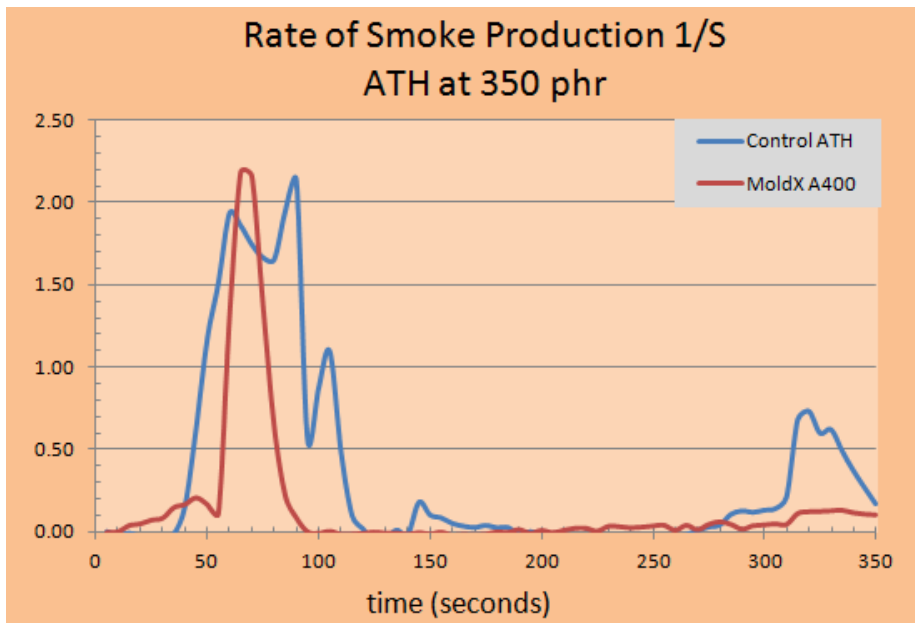
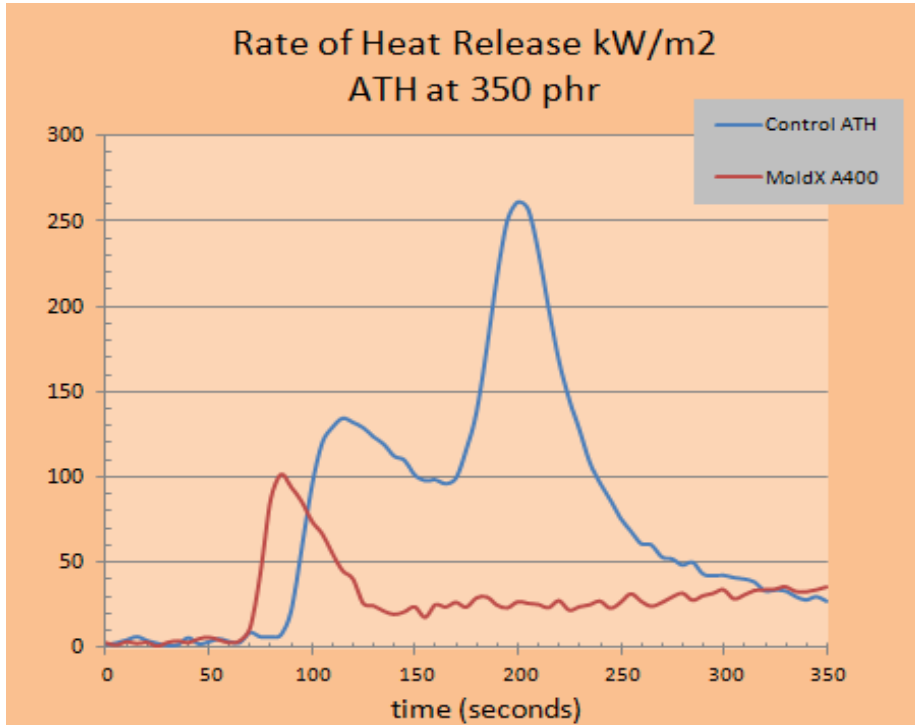
| | |
|---|------|
| % through 325 mesh | 80 |
| % less than 10 microns | 50 |
| Median Particle Diameter, microns | 10 |
| Surface Area (m ² /gm)* | 1.4 |
| Specific Gravity (gm/cm ³) | 2.42 |
| Bulk Density – loose (gm/cm ³) | 0.85 |
| Bulk Density – packed (gm/cm ³) | 1.35 |

*As measured with a Micromeritics Tristar surface area analyzer (BET)

Below are comparison charts of the rate of heat release and rate of smoke production of cured composite panels made via the sheet molding process with the ATH level at 350 phr. The panels were 0.100 inches thick. MoldX[®] A400 optimized ATH outperforms standard ATH products in both measures of flammability and smoke suppression.

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