
If You Are Concerned About The
Rising Costs Of Resin And Changing
FR Regulatory Environment,
Open Immediately.
MOLDX™
OPTIMIZED ALUMINA TRIHYDRATE

Huber Engineered Materials Has The Perfect MoldX™ Product For Your Next Application.

MoldX™ Product Overview At A Glance

Product Name	Value Proposition	Process	Comments
MoldX™ A100	• Higher ATH loadings for increased FR properties without an increase in viscosity	• SMC • BMC • Hand lay-up • Pultrusion	• New product development • Halogen replacement • Smoke suppression • ASTM E84
MoldX™ C200	• Replaces resin for total cost savings • Maintain FR properties	• SMC • BMC • Hand lay-up • Pultrusion	• Replacement for regular ATH grades in current formulations

MOLD™

OPTIMIZED ALUMINA TRIHYDRATE

Reduce Resin Consumption With Huber's New MoldX™ Products.

When things heat up and you need an advanced flame retardant (FR) for molding compounds, turn to the exclusive MoldX™ product line-up from Huber Engineered Materials. All MoldX products offer the latest in low viscosity technology allowing increased flame retardant efficiency while lowering formulation costs.

MoldX Product Benefits:

- Increased Resin Displacement Results in Significant Cost Savings
- Increased Loading Levels
- Lower Viscosity
- Better Glass Wet-Out and Faster Line Speeds
- Reduced Flame Spread
- Improved Smoke Suppression
- Non-Halogen Flame Retardants

MOLDX™ A100

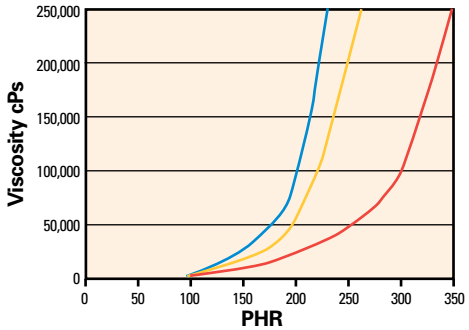
MoldX™ A100 is an optimized alumina trihydrate (ATH) flame retardant capable of very high loading levels, from 250 phr to as high as 400 phr. It is the non-halogen choice for new product applications requiring significant smoke suppression. The low viscosity performance means MoldX A100 can be processed on sheet molding compound (SMC) machines at loading levels not thought possible.

MoldX™ A100 Physical Properties

Median Particle Diameter, Microns	8-12
% Less Than 10 Microns	45-55
% On 200 Mesh	3-8
% On 325 Mesh	15-25
Surface Area (m^2/g)*	1.1-1.5
Bulk Density – Loose (g/cm^3)	0.85
Bulk Density – Packed (g/cm^3)	1.36
TAPPI Brightness**	87

*Surface Area as measured on the Micromeritics® Gemini.
**TAPPI Brightness as measured on the HunterLab Colorimeter.

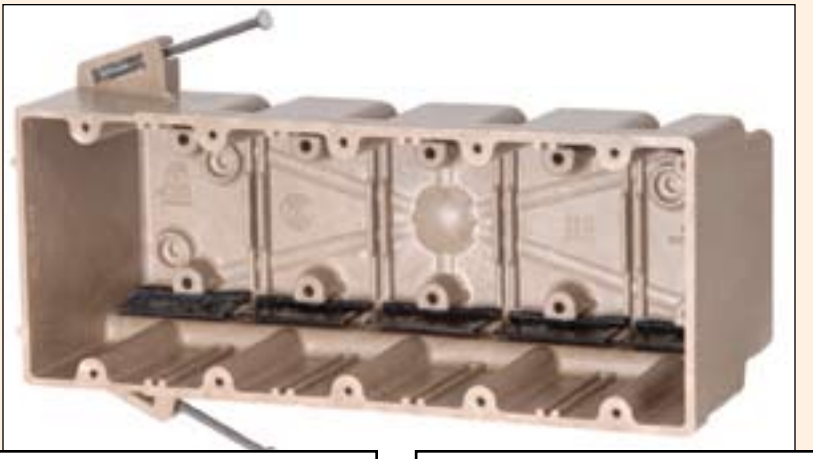
MoldX™ A100 Viscosity* at 95° F



* Undiluted isophthalic polyester resin.

MOLD X™ C200

MoldX™ C200 is a workhorse product that provides cost savings through increased displacement of expensive resin. The low viscosity performance allows the formulator to achieve higher loadings than with regular ATH products. Higher loading not only means increased resin displacement but also increased flame retardance. MoldX C200 is an optimized combination of ATH and ground calcium carbonate (GCC). It is the perfect replacement for regular ATH grades in SMC and bulk molding compound (BMC) formulations.

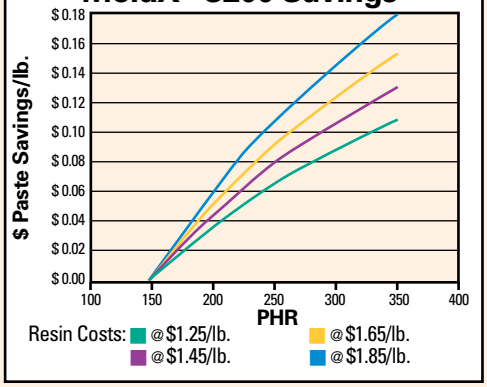


MoldX™ C200 Physical Properties

Median Particle Diameter, Microns	18-25
% Less Than 10 Microns	38-48
% On 200 Mesh	10-18
% On 325 Mesh	30-40
Surface Area (m^2/g)*	1.1-1.4
Bulk Density – Loose (g/cm^3)	0.82
Bulk Density – Packed (g/cm^3)	1.22
TAPPI Brightness**	75

*Surface Area as measured on the Micromeritics® Gemini.
**TAPPI Brightness as measured on the HunterLab Colorimeter.

MoldX™ C200 Savings



Flames And Smoke Don't Like Us.

It's a no-brainer. The MoldX™ optimized alumina trihydrate (ATH) product line is for molding compounds. And Huber Engineered Materials is your flame retardant and smoke suppression expert, offering consultative selling, product use guidance and a dedicated technical team for strong customer focus and support. Before things heat up, contact us today. Let us customize the MoldX solution perfect for your applications.

MOLD™

OPTIMIZED ALUMINA TRIHYDRATE

HUBER

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WHY GO ANYWHERE ELSE?

www.hubermaterials.com

1-866-JMHUBER (1-866-564-8237)

Huber Engineered Materials expresses its thanks to Allied Moulded Products, Inc. and Mar-Bal Incorporated for photographic assistance.

ATH/MDH
FR Solutions
WHY GO ANYWHERE ELSE?

"Flames and Smoke Don't Like Us"
VOLUME 1 • ISSUE 3

MARKET BULLETIN

Huber Launches MoldX™ A105 Optimized Alumina Trihydrate (ATH)

New ATH Grade Opens the Door to Higher Loadings Without Sacrificing Processability on a Compounder's Equipment

There's good news for compounders wanting to increase their flame retardant loadings without sacrificing process viscosity. Huber Engineered Materials has launched MoldX™ A105 optimized alumina trihydrate (ATH), a fine-particle size and unique particle distribution flame retardant (FR) best suited for pultrusion and wet-mat based applications. MoldX A105 can be utilized in any molding process sensitive to coarse particles greater than 45 microns. The product is an ideal non-halogen choice for increased FR performance and decreased resin usage.

The unique particle size distribution coupled with very low retention on the 325 mesh screen makes MoldX A105 particularly suited to applications such as wet-mat molding and resin infusion where filler filtration via flow through the fiberglass mat is a concern. With its increased FR properties, MoldX A105 is also an ideal choice for new product applications requiring significant smoke suppression.

Processes for the product include:

- Pultrusion
- Resin Infusion Molding
- Resin Injection
- Wet-Mat Panel Production
- Latex Foam Formulations
- Coatings
- Cured-In-Place-Pipe (CIPP)

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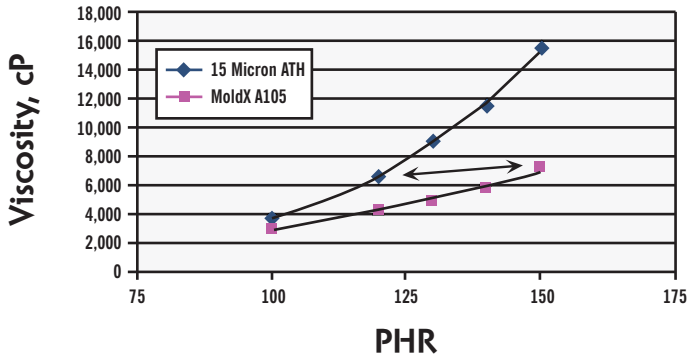
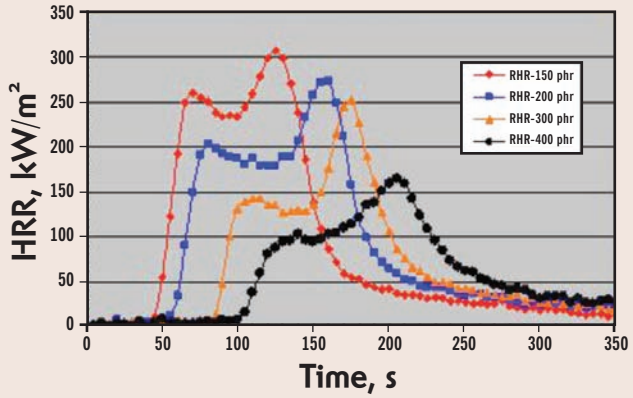
MoldX™ A105 Viscosity at Room Temperature



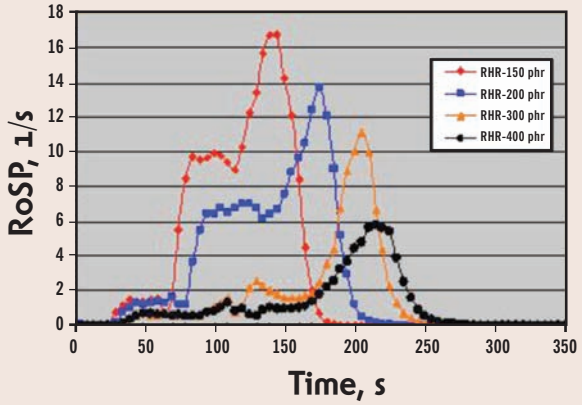
An increase in loading to 150 phr with MoldX A105 gives the same formulation viscosity as a 15 micron ATH at about 120 phr.

The key advantage of MoldX™ A105 is lower viscosity as compared to typical ATH products. The low viscosity performance of MoldX A105 gives increased loading levels, from 125 to as high as 200 phr (depending on neat resin viscosity) allowing for increased FR performance. Furthermore, the displacement of polyester resin can result in a significant cost savings opportunity.

Rate of Heat Release



Rate of Smoke Production



MoldX A105 gives higher loading levels at the process viscosity required by the formulator's process. This attribute makes it a very effective product for imparting increased flame retardancy and smoke suppression to resin systems. The graphs above show how increased ATH loadings result in a decreased heat release rate and decreased smoke generation.

MoldX A105 Physical Properties	
Median Particle Diameter, Microns	6
% Less Than 10 Microns	68%
% On 325 Mesh	0
Surface Area (m^2/g)*	7
Bulk Density - Loose (g/cm^3)	0.65
Bulk Density - Packed (g/cm^3)	1.22
TAPPI Brightness**	89

*Surface Area as measured on the Micromeritics® Gemini.
**TAPPI Brightness as measured on the HunterLab Colorimeter.

As FR performance requirements and codes continue its rapid movement toward more stringent regulations, MoldX A105 is a perfect non-halogen FR you should consider and evaluate for your next application. A halogen-free product like MoldX A105 is proven to be more environmentally-friendly, non-toxic, non-flammable and safer for the manufactured product.

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