AMS

Applied Material Solutions

TRANS-CHEMCO, INC.
The Specialists in Foam Control™

NOTTINGHAM COMPANY
DIVISION OF APPLIED MATERIAL SOLUTIONS

PERFORMANCE PROCESS INC.

Keramax

AMSil

Hydrophobic Silica
Fumed & Precipitated

www.appliedmaterialsolutions.com

Applied Material Solutions

About AMS

Applied Material Solutions offers high quality antifoam products, treated silicas, chemicals, and excellent customer service. AMS is the parent company of the Trans-Chemco “TCI Foam Control” brand, Performance Process Inc. (PPI), and Nottingham Company.

In 1991, Performance Process, Inc. (PPI) was founded in Mundelein, Illinois to produce fumed and precipitated treated silicas. Nine years later we installed a new state-of-the-art treated silica production unit at our Nottingham Company facility in Atlanta, Georgia, which more than doubled our capacity and reduced delivery time for our customers in the Southeast. In 2015, AMS purchased PPI, and in 2016 we expanded our silica production and consolidated facilities to our Burlington, WI plant.

Applications

Our fumed and precipitated silicas are used in a wide range of applications that include adhesives, agriculture, cable gels, coatings, cosmetics, defoamers, fire extinguishers, foods, greases, inks, paints, plastics, polyester resins, silicone rubber, silicone sealants, toners, and more.

Benefits

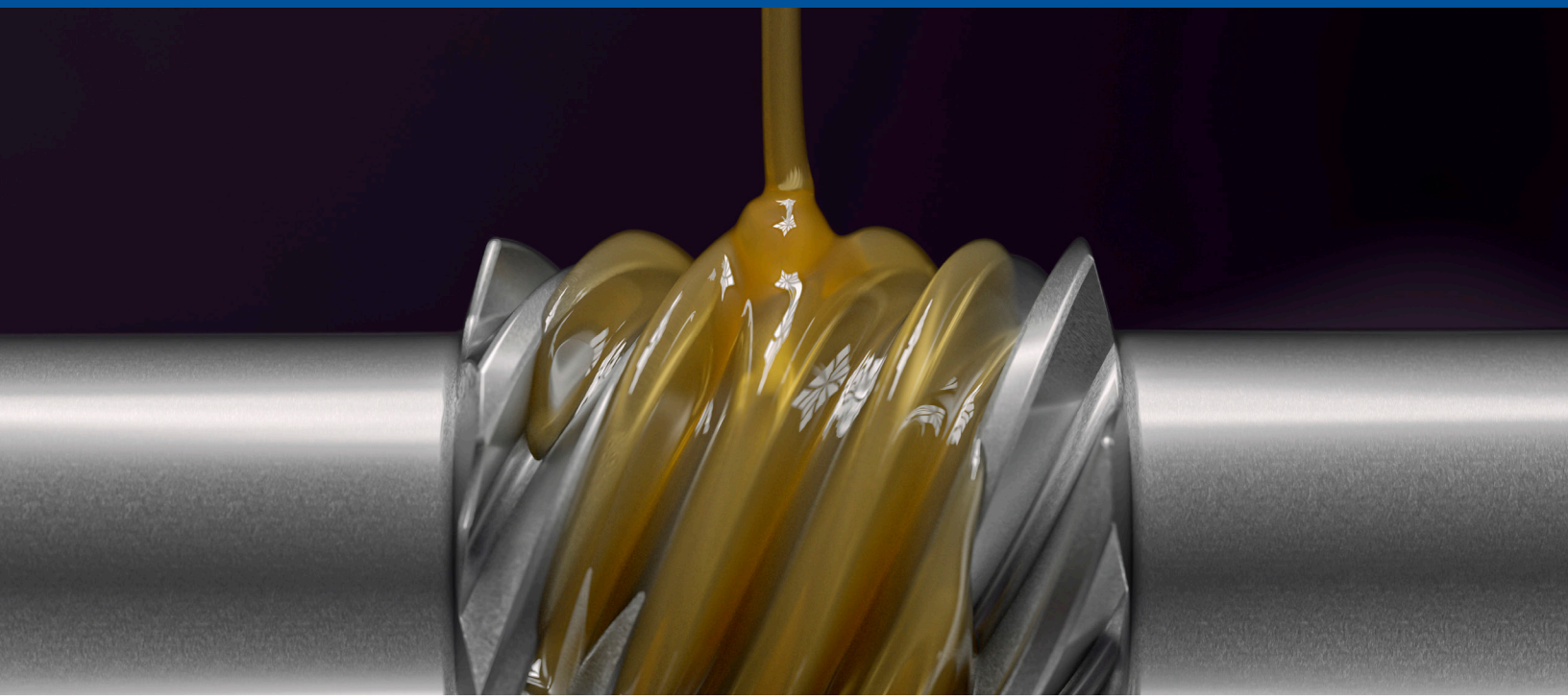
The benefits of fumed and precipitated silica are diverse. It is an ingredient that works as an adsorbent, and it provides anti-setting, anti-sagging, anti-setoff, anti-blocking, and reinforcement. It encourages the free flow of powders, improvements in mechanical and optical properties, pigment stabilization and dispersion, and print definition. In addition, improvements are achieved when it is used for processability, hydrophobicity control, thickening, thixotropy, rheology control, and suspension and stability behavior.

Excellent Quality

The foundation of every product we develop is its formulation, and ours lead the industry in accuracy, consistency and performance. In our cutting edge laboratory we have the equipment needed to ensure that procedures are followed meticulously while testing and regulating our formulations. Our attention to detail throughout the process results in substantial savings for our customers in both time and costs.

Collaboration

It is essential that we collaborate with our customers at every step in the formulation process, from initial discussion through development, installation, production, and performance evaluations. For us, working closely together is the reason for our success.



Hydrophobic Silica—Fumed & Precipitated

AMSil

Adsorbent and Carrier

Adsorb gaseous, liquid or solid materials and act as a carrier to allow conversion of liquid and pastes into powder, making them considerably easier to dose and handle.

Applications

- Coatings & paints
- Pharmaceuticals & cosmetics
- Polyester resins & gel coats
- PVC based plastics

Defoamers and Antifoams

- Food—direct and indirect applications
- Paints and coatings
- Inks
- Adhesives
- Paper
- Textiles

Electrostatic Charge Effect

Reduce the tendency of plastic powders to acquire a negative electrostatic charge, eliminating characteristics that are undesirable.

Applications

- Batteries
- Coatings & paints
- PVC based plastics

Free Flow and Storage

Greatly increase the free flow and storage stability of powdered substances that have a tendency to cake.

Applications

- Coatings & paints
- Defoamers & antifoams
- Pharmaceuticals & cosmetics
- Polyester resins & gel coats
- Printing inks
- PVC based plastics
- Fire extinguisher powder
- Table salt
- Tomato powder
- Tablet powder blends
- Plastic powders
- Toners

High Temperature Insulation

Outstanding thermal insulation properties due to the fact that amorphous silicon dioxide has a very low solid state conductivity

Applications

- Cable gels
- Rubber & rubber compounding
- Thermal insulation

Providing Improvements for Many Products

Printer and Copier Toner

Improve the flow characteristics and charge stability and enhance the resolution and print quality of toners.

Applications

Printing inks and toners

Reinforcement of Elastomers

Improve mechanical properties, such as tensile strength, elongation at break, and tear resistance, and help control the influence of temperature on mechanical properties.

Applications

- Adhesives & sealants
- Rubber & rubber compounds
- Molding, sealing, & casting compounds

Suspension, Dispersion and Grinding

Prevent or delay sedimentation of solids in liquid systems, re-disperse settled sediments without problems, and break down solid particles and prevent them from recombining.

Applications

- Coatings & paints
- Resins containing fillers

Thickening and Thixotropy

Particles restore original viscosity when in a state of rest, reversing thickening with a minimum amount of energy.

Applications

- Adhesives & sealants
- Cable gels
- Greases
- Polyester resins & gel coats
- Resins containing fillers

Storage and Stability

Remains chemically stable when stored under dry conditions, protected from volatile substances, and used within two years.

AMSil Hydrophobic Silica—Fumed

Applied Material Solutions

Product	Properties								Applications										
AMSil-F	Specific surface area (BET) m^2/g	Average particle size nm	Tapped density g/1	Ignition loss wt%	Carbon content wt%	Moisture wt%	pH	SiO_2 content wt%	Adhesives	Defoamers & antifoams	Silicone rubber	Sealants	Paints & coatings	Plastics	Printing inks & toners	Cable gels & gel coats	Cable compound	Plant protection	Epoxy resins
H22	130 ± 30	12	50	4.0 – 6.0	3.50 – 5.0	≤ 0.5	4.0 – 6.0	≥ 99.8	✔	✔		✔		✔		✔			✔
H21	100 ± 20	14	50	4.0 – 6.0	3.5 – 5.0	≤ 0.5	4.0 – 6.0	≥ 99.8	✔	✔		✔		✔		✔			✔

AMSil Hydrophobic Silica—Precipitated

Applied Material Solutions

Product	Properties						Applications								
AMSil	Specific surface area (BET) m^2/g	Average particle size µm	Bulk density lbs/ft^3	pH	Form	Hydrophobicity Level	Defoamers & antifoams	Rheology	Powders	Food & food additives	Fire extinguishers	Resins	Plastics	Agriculture	Anti-caking active filler
35	120 – 140	6 – 7	8 – 9	8 – 9	Powder	Standard	✔	✔	✔			✔	✔	✔	✔
355	120 – 140	6 – 7	8 – 9	8 – 9	Powder	Med high	✔	✔	✔		✔	✔	✔	✔	✔
358	120 – 140	6 – 7	8 – 9	8 – 9	Powder	Highest	✔	✔	✔			✔	✔	✔	✔
35 FGK	120 – 140	6 – 7	8 – 9	8 – 9	Powder	Standard	✔	✔	✔	✔		✔	✔	✔	✔
66	140	4	8 – 9	10.5 max	Powder	Standard	✔	✔	✔			✔	✔	✔	✔
665	140	4	8 – 9	10.5 max	Powder	Med high	✔	✔	✔			✔	✔	✔	✔
668	140	4	8 – 9	10.5 max	Powder	Highest	✔	✔	✔			✔	✔	✔	✔
66 FGK	140	4	8 – 9	10.5 max	Powder	Standard	✔	✔	✔	✔		✔	✔	✔	✔
70	100 – 110	7	8 – 9.5	8 – 9	Powder	Standard	✔	✔	✔			✔	✔	✔	✔
705	100 – 110	7	8 – 9.5	8 – 9	Powder	Med high	✔	✔	✔			✔	✔	✔	✔
708	100 – 110	7	8 – 9.5	8 – 9	Powder	Highest	✔		✔		✔	✔	✔	✔	✔
70 FGK	100 – 110	7	8 – 9.5	8 – 9	Powder	Standard	✔	✔	✔	✔		✔	✔	✔	✔
80	80	12	8 – 10	8 – 9	Powder	Standard	✔	✔	✔			✔	✔	✔	✔
805	80	12	8 – 10	8 – 9	Powder	Med high	✔	✔	✔			✔	✔	✔	✔
80 FGK	80	12	8 – 10	8 – 9	Powder	Standard	✔	✔	✔	✔		✔	✔	✔	✔

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Keramax

Applications for Fumed and Precipitated Silica

- Adhesives
- Agriculture
- Cable gels
- Coatings
- Cosmetics
- Defoamers
- Fire extinguishers
- Foods
- Greases
- Inks
- Paints
- Plastics
- Polyester resins
- Silicone rubber
- Silicone sealants
- Toners

Benefits

- Adsorbent
- Anti-blocking
- Anti-sagging
- Anti-setting
- Anti-setoff
- Free flow of powders
- Hydrophobicity control
- Mechanical and optical properties improvements
- Reinforcement
- Pigment stabilization and dispersion
- Print definition
- Processability improvements
- Rheology control
- Thickening
- Thixotropy
- Suspension and stability behavior