



Viscoelastic Damping Polymers

Versatile solutions to control vibration and isolate shock in applications ranging from disk drives to car door panels.



Vibration and shock problems vary for different product applications. That's why 3M provides damping polymer solutions that are versatile and backed with technical service to help you apply those solutions to specific challenges.

3M™ Viscoelastic Damping Polymers have been proven to reduce vibration in automobiles, disk drives, and aircraft. Through continuous improvement, 3M can now offer you a choice of standard damping polymers or ultra-pure damping polymers to expand application possibilities to include the following:

Cover constrained layer dampers; multi-layer laminates using metal or polymeric films; free layer dampers; suspension dampers; isolators; panel, pipe, and wing dampers; and more.

3M's technical service team and our global network of converters is ready to assist you in these areas:

- Product design optimization for end use performance.
- Prototyping for form, fit, and function.
- Large volume fabrication.
- Testing.

Market Application Areas

- Automotive including body panels and under the hood.
- Aerospace including space craft and commercial aircraft.
- Electronics including disk drives.
- Sporting goods including golf clubs and tennis racquets.
- Appliances including washing machines.

3M™ Viscoelastic Damping Polymers

Performance Versatility

- Choice of enhanced acrylic polymer for improved vibration damping or ultra-pure polymer for improved vibration damping, plus low out-gassing and ionics.
- Choice of good to excellent thermal stability for long term applications at moderate temperatures, or short term high temperature exposure.
- Damping in temperatures ranging from as low as 0°C (32°F) to as high as 105°C (221°F).
- Select Loss Factor and Storage Modulus values to meet requirements.

Processing Versatility

- Select a polymer to bond with pressure only, or with heat and pressure.
- Choice of liners to meet different handling requirements.
- Wide range of thicknesses to meet design requirements.
- Use with a variety of substrates.
- Capable of laminating layers to create thicker products.
- High or low initial tack depending on precision of placement.

Construction Availability

Polymer	Thickness	Liner	Typical Performance Characteristics
Standard Viscoelastic Damping Polymer			
110	2 and 5 mil	Paper	<ul style="list-style-type: none"> • Good damping performance at higher temperature: 40-105°C (104-221°F). • Heat and pressure needed for bonding.
112	1, 2 and 5 mil	Paper	<ul style="list-style-type: none"> • Good damping performance at 0-65°C (32-142°F). • Pressure only for adequate bonding at room temperature (21°C/70°F) for many applications.
130	2 and 5 mil	Polyester	<ul style="list-style-type: none"> • Good damping performance at moderate temperature range of 20-90°C (68-194°F). • Pressure only for adequate bonding at room temperature (21°C/70°F) for some applications.
Ultra-pure Viscoelastic Damping Polymer			
242	1, 2 and 4 mil	Polyester	<ul style="list-style-type: none"> • Good damping performance at 0-65°C (32-142°F). • Low outgassing by GC/MS (Modified ASTM 4526). Low ionics.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

www.3M.com/bonding

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550. Address correspondence to 3M Bonding Systems Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-809-750-3000. In Mexico, phone: 5-728-2180.

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