

Tunable Polyamide Anti-Vibration System Technology Platform

Reduce NVH without adding weight or complexity

Specifically designed to dampen noise, vibrations and harshness while also providing enough rigidity for structural applications, Vydyn[®] AVS grades improve cabin sound and reduce part weight. AVS technology dampens vibrations better than traditional PA66, especially at the higher frequencies of EV motors. Our broad portfolio of tunable grades allows you to find the optimal balance of damping and mechanical performance by operating temperature. And our application development engineers have developed physical validation tests for predictive models.

Highlights



75-84% reduction in cabin noise



High mechanical properties across a broad temperature range

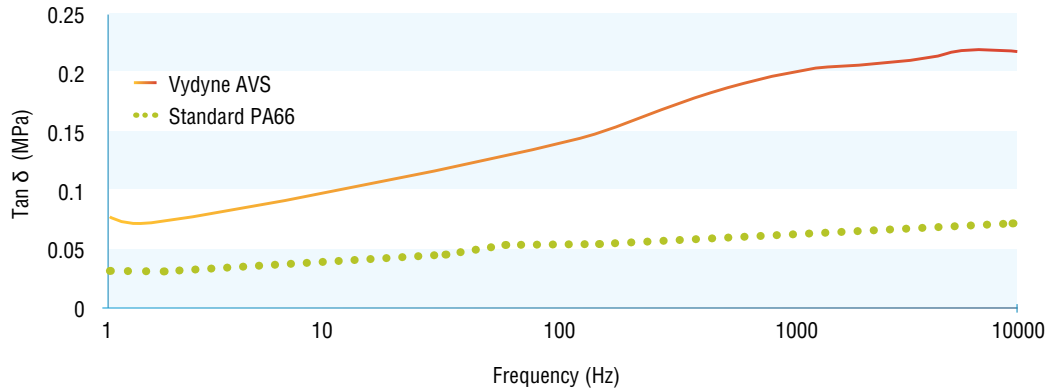


30-40% weight reduction when compared to die cast aluminum



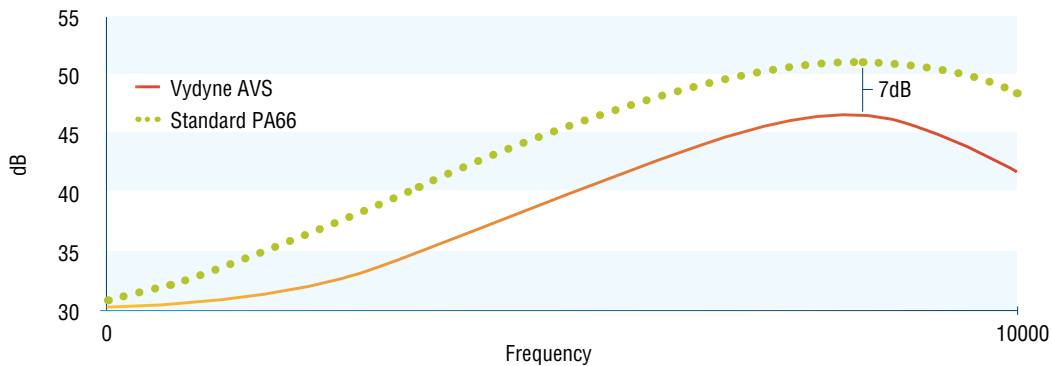
Significant improvement of tan delta, especially at high frequencies

Vydyne AVS dampens vibrations better than traditional PA66, especially at higher frequencies.



Cabin Sound Pressure

Reducing vibration at the mounting location reduces cabin sound on average by 7 dB. That translates into a 75-84% improvement in cabin noise, without adding weight.



Partnership in action

2023 Cadillac LYRIQ EV AC Compressor

Challenge

GM needed a solution for structural noise in their new electric vehicle. Current tools used to dampen NVH max out at around 300 Hz, but EV frequencies are 10x higher with no engine to mask the noise.



Solution

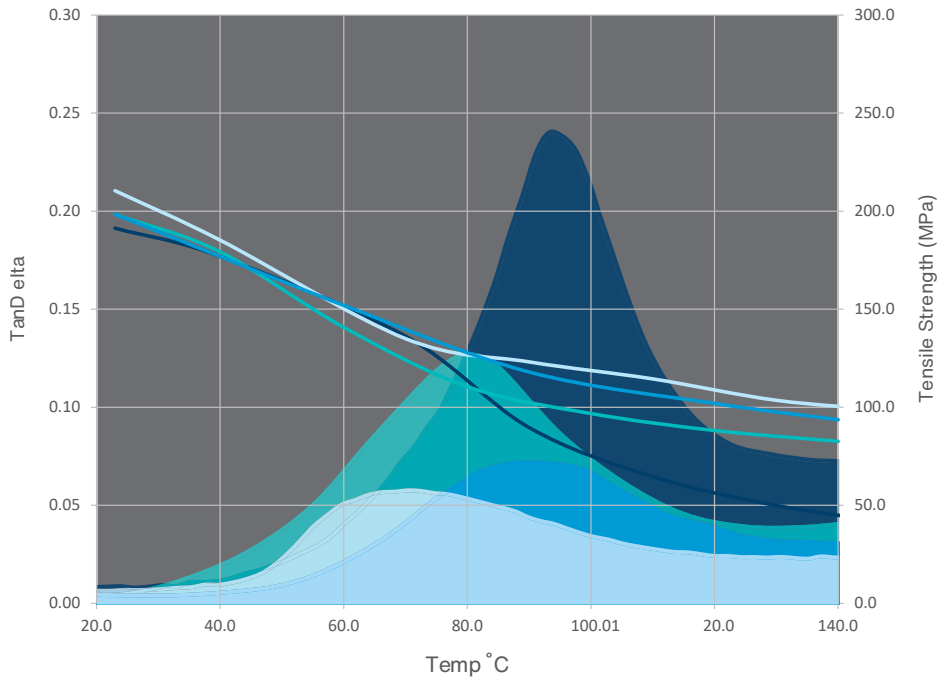
Ascend's dedicated e-range team developed Vydyne AVS, a new reactor chemistry and methods to validate FEA-predicted resonance, durability and maximum load. Using Computer-Aided Engineering (CAE), our team worked with GM to achieve best results.

dB Reduction	Noise Improvement
-2	37%
-4	60%
-6	75%
-8	84%
-10	90%

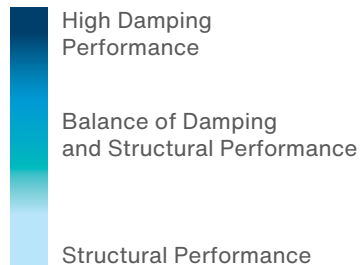
Tunable performance

Our application engineers work with you to select the best grade for your application, balancing your damping, operating temperature and mechanical requirements.

Tan Delta vs. Temp vs. Tensile Strength (DAM)



- 4AC5** Tan Delta
- 4BC1** Tan Delta
- 4CC1** Tan Delta
- Standard PA66** Tan Delta
- 4AC5** Tensile Strength
- 4BC1** Tensile Strength
- 4CC1** Tensile Strength
- Standard PA66** Tensile Strength



Grade	Description	GF (%)
Standard PA66	High strength, high stiffness, heat stabilized, glass fiber reinforced with standard damping performance at operating condition	35 and 50
Vydyne 4CXX	High strength, high stiffness, heat stabilized, glass fiber reinforced with improved damping performance at operating condition	35 and 50
Vydyne 4BXX	Heat stabilized, glass fiber reinforced with a good balance of damping and structural performance at operating condition	35 and 50
Vydyne 4AXX	Heat stabilized, glass fiber reinforced to provide a high level of damping for critical NVH components at operating condition	35 and 50

[Click here to view technical data sheets](#)

Applications

[Click links for more information](#)

[/ Body Stiffeners & Crash Inserts](#)

[/ Engine Mount Components](#)

[/ Transmission Mounts](#)

[/ Torque Rods](#)

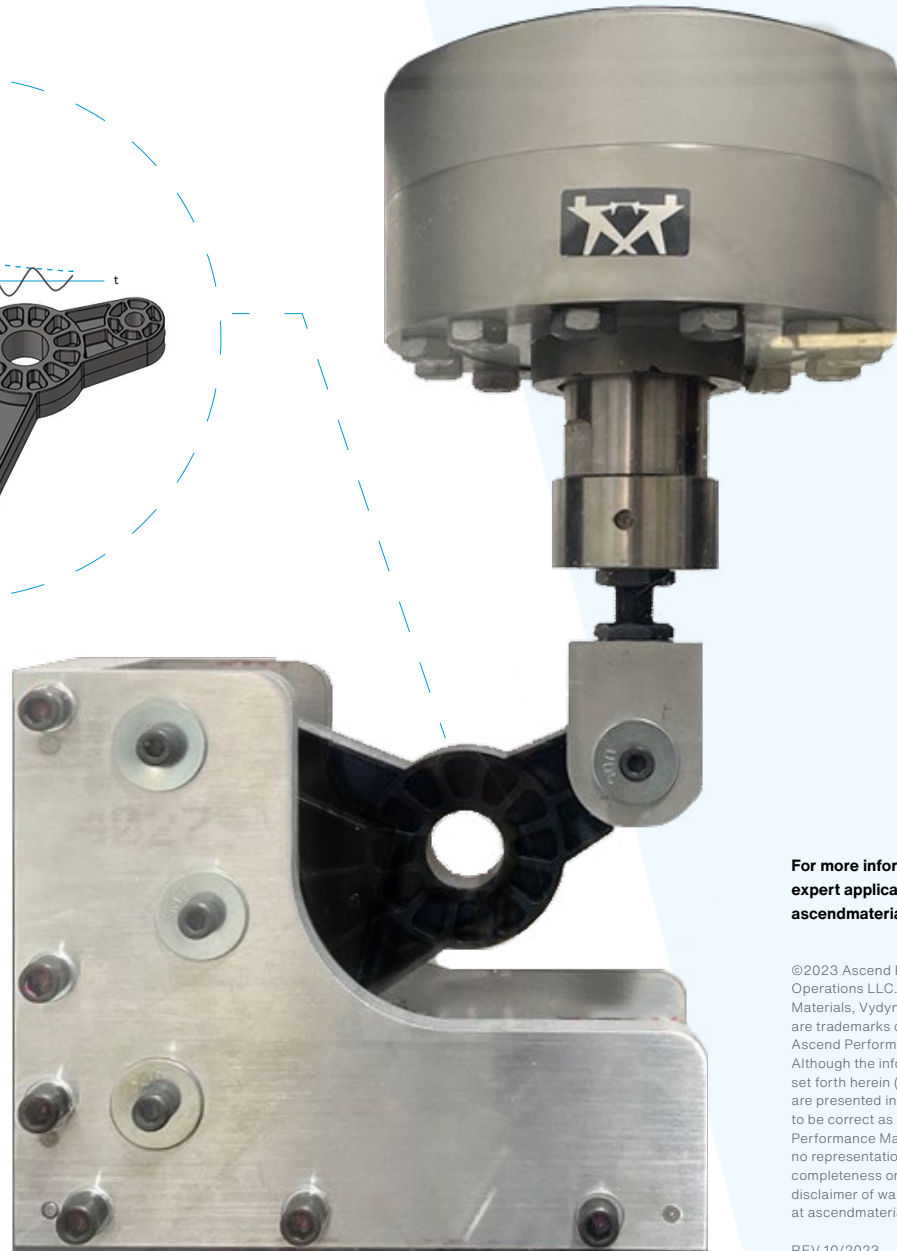
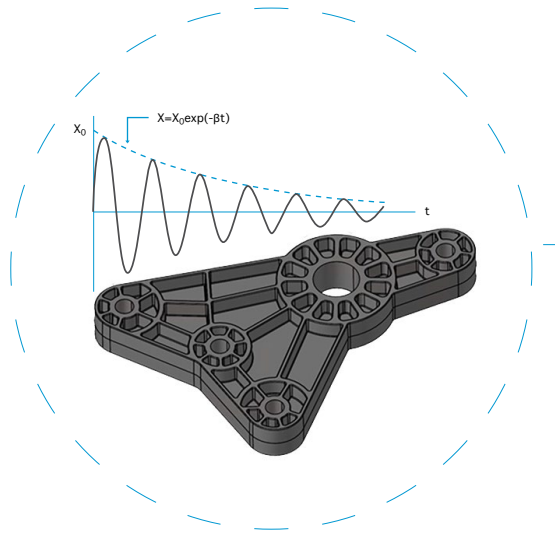
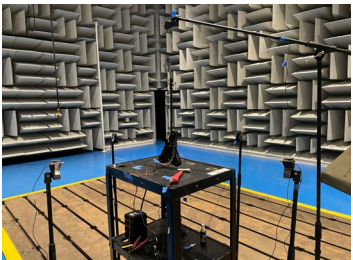
[/ Accessory Brackets](#)

[/ Suspension Mounts](#)

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Ascend Structural Test Platform

We designed a new platform and method to physically validate FEA-predicted resonance as well as durability and maximum load. Our ADEs are ready to support you with CAE, mold flow analysis, NVH testing, thermal cycling simulation and material, science and process support.



For more information, contact our expert applications specialists or visit ascendmaterials.com.

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