



Stanyl[®] Diablo OCD2100

High temperature solutions

Living solutions for automotive under the hood applications

Revolution under the hood

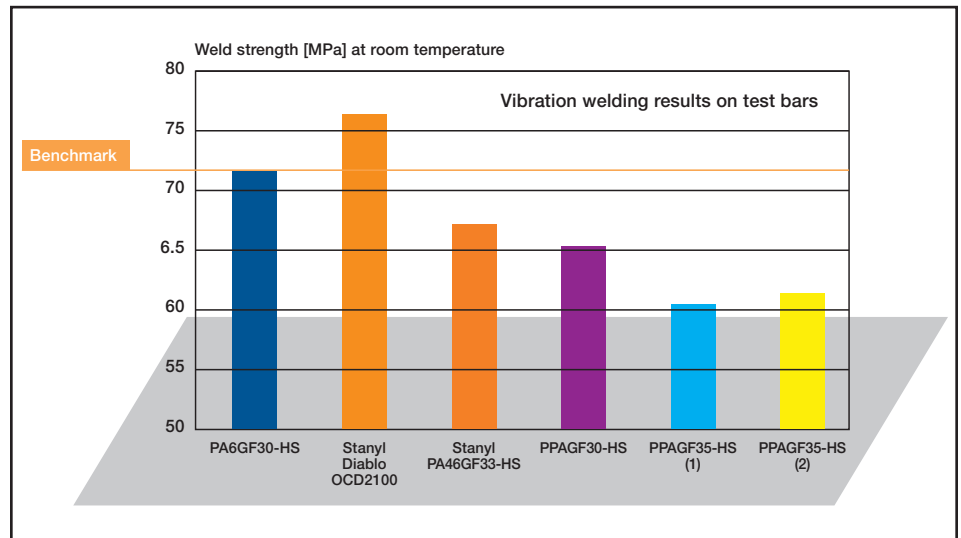
Stanyl® Diablo OCD2100, the ultimate material for high temperature applications with best in class oxidative stability, is adding new possibilities in the use of thermoplastics for extreme applications. High temperature applications such as turbo charger components and air/fuel system components are examples.

The need for efficient combustion in engines over a wide range of engine rpm's brings the need for turbochargers and highly tuned induction systems. One of the results is high operating temperatures over the life of the vehicle.

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In the case of two shell welded ducts used in turbocharger systems, pulsating air pressures influences material choices. Conventionally, these applications have utilized high temperature thermoplastics and aluminum. Increasing demands for long term thermal exposure to temperatures above 200°C (392°F) leaves designers with few choices, since most materials lose mechanical properties



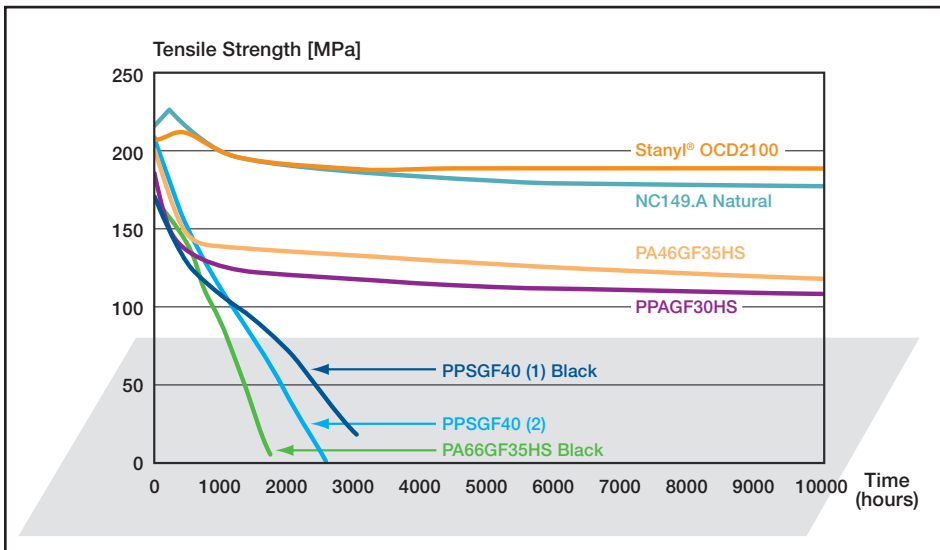
Stanyl Diablo's superior weld line strength makes it the best material for airducts.

when exposed for long periods to these temperatures. Stanyl Diablo OCD2100 is a new high performance polyamide from DSM which meets these demands.

Stanyl Diablo OCD2100 retains mechanical properties even when exposed to 220°C continuously for over 10000 hours. This allows for optimized wall thicknesses of plastic components, as thermal oxidative degradation is minimized. Further, with excellent fatigue resistance, this material is ideally suited for such applications with cyclic pressures over component life, after thousands of hours of aging has occurred. The material also vibration welds easily and retains up to 5 times the weld strength of competitive high temperature thermoplastics after aging. At half the density of aluminum, saving weight of up to 50% over that of aluminum components is possible. There are cost reductions from easier assembly processes such as crimping versus costly and time consuming metal processes such as TIG welding.

Outstanding properties that raise the bar

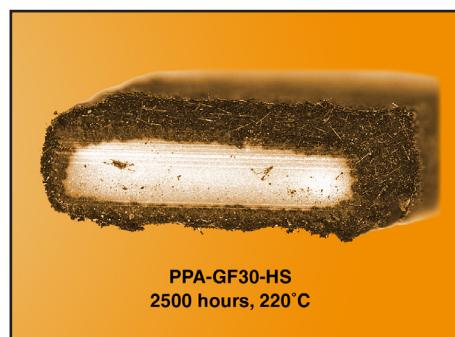
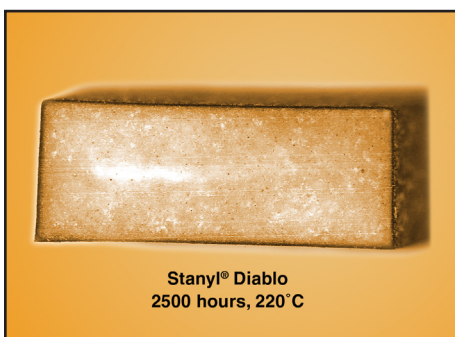
Stanyl Diablo OCD2100 combines the inherent thermal and mechanical properties of Stanyl with extreme thermal stability. DSM has invested considerable resources in research to understand the mechanisms by which thermoplastics degrade at elevated temperatures. Fundamental understanding of the mechanism allowed DSM scientists, polymer chemists, and application experts to work towards the Stanyl Diablo technology, which slows the process to nearly a standstill. Stanyl OCD2100 is the first of a series of materials which will take advantage of this extreme long term thermal resistance and has set an entirely new performance standard for high temperature thermoplastics.



Oxidative stability, Aging 220°C (428°F), Testing 23°C, Absolute values.

DSM invests in technologies which enable innovations such as these to lower weight of components used in cars which in turn reduce emissions of green house gases such as CO₂. Lighter components and easier manufacturing processes also lower system costs for systems suppliers. Application development engineers at DSM understand your systems and application needs to bring you the most optimized designs with very high safety standards for the success of your application.

To get the best material and design support for your next airduct and/or under-the-hood component program please contact us at the addresses listed on the back of this flyer.



Note: Above identical samples were aged continuously for 2,500 hours at 220°C (428°F). Analysis at end of this exposure shows that the Stanyl® Diablo sample retains a far greater amount of cross section, resulting in far greater mechanical properties. Which material do you want to trust in your high temperature components?

Perfect material solutions for automotive under the hood applications

- Up to 50% weight savings over aluminum.
- Long term thermal stability – high mechanical property retention past 10000 hours continuous exposure at 220°C.
- Excellent welding performance – both ease of welding and retention of weld line strength after thermal aging.



Stanyl® Diablo offers improved reliability and cost reduction opportunities for turbocharger systems.

Living solutions that deliver key benefits to customers: performance, design freedom, and system costs.

At DSM Engineering Plastics, we develop materials to help our customers make substantial productivity gains, while meeting or exceeding today's stringent environmental requirements. Examples include Stanyl®, offering greater design freedom for thin wall applications as well as low system costs and lead-free soldering; Arnitel® for wire & cable applications requiring high heat solutions, meeting environmental requirements at significantly lower costs; and Akulon® Ultraflow, a halogen-free flame retardant material offering greater design freedom and lower systems costs.

Contact

At DSM Engineering Plastics, our customers are key. Focusing on the advantages for the end user is essential. If the end user is satisfied, so are our customers. And so are we. We do not settle for ordinary solutions. Instead, we strive to find living solutions, working together with customers in a dedicated, resourceful and reliable way.

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Arnitel®

Akulon®

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