Thread Sealant 4291

Technical Data Sheet **December 2007**

Supersedes Technical Data Sheet dated June 2000

General Description

3M™ Thread Sealant 4291 is a water-based product designed to be pre-applied to threaded fasteners. It has excellent resistance to automotive fluids and can withstand high temperatures and pressures. Typical applications are threaded fasteners for the engine compartment.

Physical Properties

Bulk adhesive	**4291**
Color	White
% solid	59%
Flash point	None
Density	9.25 lbs/gallon (1110 kg/m3)
Viscosity	400-1200 cps
Form	Flowable liquid

[1]Brookfield viscometer, RVF #4 spindle at 20 rpm.

Storage and Handling

Bulk Adhesive	**4291**
Container sizes	18.9 liter (5 gallon) pails
Shelf life	Six months from the date of receipt by the customer Shelf life can be extended by re-mixing the adhesive regularly so that capsules do not coagulate on the bottom of the pails. Adhesive stored longer than six months from the date of receipt should be checked for performance prior to application on fasteners.
Storage Conditions	Store pails at 15°-27°C (60°- 80°F) **PROTECT FROM FREEZING**; storage below 0°C (32°F) for extended periods will freeze the adhesive and make it totally unusable. Storage above 49°C (120°F) will shorten the shelf life of the adhesive. Inventory should be rotated on a FIFO (first-in, first-out) basis.
Coated Fasteners	
Shelf life	One year from date of adhesive application Shelf life can be as long as four years, depending on the storage conditions. Fasteners which are more than one year from the date of adhesive application should be checked for performance prior to use.
Storage conditions	Store coated fasteners at 4°-38°C (40°- 100°F).

Performance Properties

Chemical Resistance[1]	**4291**
toluene (room temperature)	No leaks
gasoline (room temperature)	No leaks
motor oil (300°F/149°C)	No leaks
transmission fluid (300°F/149°C)	No leaks
anti-freeze (266°F/130°C)	No leaks
brake fluid (300°F/149°C)	No leaks
diesel fuel #2 (room temperature)	No leaks
hot water (200°F/93°C)	No leaks

Fluid Tightness[2]	
gasoline (room temperature)	150 psi / no leaks
motor oil (300°F/149°C)	150 psi / no leaks
transmission fluid (300°F/149°C)	150 psi / no leaks
anti-freeze (266°F/130°C)	150 psi / no leaks
hot water (200°F/93°C)	150 psi / no leaks

High Pressure Resistance[3]	
1200+ psi (84+ kg/cm2)	No leaks

Note: These properties are representative of the product's performance and are supported by laboratory test data. However, the values reported are not intended to be used for specification purposes.

Features, Advantages and Benefits

Features	Advantages	Benefits
Synthetic polymer chemistry	Extended shelf life (12 months on coated fasteners) Excellent resistance to automotive fluids, high temperatures (up to 300°F / 149°C) and pressures (up to 150 psi / 10.5 kg/cm2) Can be used on both pipe and straight threads	Robust sealing performance
Water-based	No VOCs	
Flow coatable formula	Allows controlled application to fasteners; viscosity can be adjusted to achieve target coating weights	Broad handling, dispensing and drying windows for the applicators

Health and Safety

Health and Safety Information: Read all Health Hazard, Precautionary, and First Aid statements found in the Material Safety Data Sheet (MSDS) and/or product label prior to handling or use. Visit www.3M.com/msds to obtain an MSDS.

******Performance tests are run using standard test procedures. The values presented are typical values not to be used for specification purposes.

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