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Product Description Sheet

Product PMS-50E

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PRODUCT DESCRIPTION

LOCTITE® Product PMS-50E is a penetrating sealant which is designed to seal metal porosity in applications which demand maximum resistance to elevated temperatures and solvents. No solvents are present in the sealant. Differential pressure equipment is used to force the sealant into the microscopic pores of cast or powder metal components. The absence of air and presence of metal cause the cure. As a solid, PMS-50E is a cross-linked thermoset polymer which may be used in harsh environments.

TYPICAL APPLICATIONS

PMS-50E is used exclusively in batch impregnation equipment to seal parts which, in general, must hold differential pressure. This product is especially well suited to applications involving design temperatures between 200 and 400°F and/or requiring long term resistance to strong solvents such as gasoline. Engine and powertrain components, fuel handling systems, refrigeration components and other harsh environments are typical applications.

PROPERTIES OF UNCURED MATERIAL

	Typical Value	Range
Chemical Type	Methacrylate monomers	
Appearance	Clear, amber, fluorescent liquid	
Specific Gravity @ 25°C	1.09	
Viscosity @ 25°C mPa.s (cP)		
Brookfield RTV		
Spindle #2 @ 50 rpm	53	40 to 65
Flash Point (TCC), °C, °F	>93 (>200)	

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Hardness, Shore D	8
Coefficient of thermal expansion, ASTM D696, 1/K:	1.2×10^{-4}
Coefficient of thermal conductivity, K, BTU-in/hr-ft ²	1.04
Solvent resistance	Excellent

UL CLASSIFICATION

Classified by Underwriters Laboratories Inc.® MH15585 as a casting impregnation material for exposure to gasoline, kerosene, fuel oils, naphtha and alcohol blended gasoline mixtures with concentrations up to and including 100% ethanol or methanol.

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials. For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Directions for use

Loctite PMS-50E is designed to be applied through Loctite impregnation equipment. Parts are loaded into special process tanks and a differential pressure cycle causes the flow of liquid sealant into any open internal space. The sealant adapts to fill voids ranging from micro-shrinkage porosity up to small pin-holes. Structural defects will not be improved.

This product cures anaerobically. Specifically, PMS-50E begins to cure when denied freely moving oxygen and the cure is accelerated by the presence of metal. The sealant will self cure reliably without additional heat or chemicals. Surface residue caused by hot tank bleed-out is eliminated.

- Use any of the following vacuum impregnation methods to impregnate parts in PMS 50E:
 - Dry Vacuum/Pressure
 - Wet Vacuum/Pressure
 - Wet Vacuum
 - Pressure Impregnation
- After the impregnation procedure, put parts in the drip station or centrifuge to remove excess surface resin.
- Clean parts by vertical oscillating in soapy water.
- Soak parts in activator rinse to initiate catalytic cure of sealant at porosity surface sites.
- Soak parts in final rinse at 110 °F (43°C) to remove activator rinse and warm the parts for quick drying upon removal. Note: corrosion inhibitors may be added to final rinse if required.

Storage

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8 to 28°C (46 to 82°F) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused product, do not return any material to its original container. For specific shelf-life information, contact your local Technical Service Center.

Active PMS 50E in an impregnation tank with normal use has unlimited pot life if recommended controls are maintained, including temperature controls and aeration.

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Loctite Corporation's products. Loctite Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Loctite Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications

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