



HPS-7 98:2 Structured Methyl Methacrylate Product Data Sheet

DESCRIPTION

HPS-7 is the trade name for Ennis Paint's STRUCTURED methacrylate based multi-component durable pavement marking material. HPS-7 consists of white and yellow lead free products tailored for specific "splatter line" application methods, at various film thicknesses and used with specific multi-component proportioning application equipment. HPS-7 STRUCTURED provides exceptional snow plow resistance, retro reflectivity, and longevity at an attractive cost per useful life. HPS-7 can be surface applied or inlaid onto asphalt or concrete roadways, and requires the proper drop on glass beads for initial retroreflectivity.

MATERIALS

HPS-7 STRUCTURED is a product designed for application via a unique splatter pattern technique that creates peaks and valleys. The peaks can reach up to 200 mils or more in height. When applied over a new or bare pavement surface, the STRUCTURED line creates a solid line effect back to the driver.

The STRUCTURE design produces enhanced wet night retro reflectivity by allowing water to flow off the peaks and out of the valleys of the pattern. HPS-7 is especially resistant to snow plow damage.

The catalyst shall be metered and mixed automatically by the various motorized application devices designed to apply the HPS-7 material in a controlled, yet random, STRUCTURED pattern. Part A contains intermixed glass beads for enhanced long term retro reflectivity. HPS-7 STRUCTURED is primarily intended for long line striping but can be used for intersectional markings.

PHYSICAL PROPERTIES AND TEST METHODS

Parameter	White	Yellow	Test Methods ¹
Weight per gallon (A)	12.5 lbs/gal min.	12.5 lbs/gal min.	ASTM D1475
Viscosity, Daniel Scale	0 – 20	0 – 20	Daniel Method ²

Total Solids by Wt. (%):	> 99.0%	> 99.0%	
Total Solid by Vol. (%):	> 99.0%	> 99.0%	
Pot life at 25°C:	5 minutes minimum	5 minutes minimum	
No track at 77°F (mix)	30 minutes max	30 minutes max	ASTM D711 ²
Cure Time:	7 - 30 minutes	7 - 30 minutes	
VOC (grams/liter):	50 maximum	50 maximum	40 CFR 59 Subpart D Appendix A
Adhesion	Min 200 psi or substrate failure	Min 200 psi or substrate failure	D4541 ²
Shore Hardness	Min. 50D after 24 hours	Min. 50D after 24 hours	ASTM D2240
Skid Resistance	Initial ⁴ minimum 45 ³	Initial ⁴ minimum 45 ³	ASTM E303
Chemical Resistance	Cured markings shall be resistant to calcium chloride, sodium chloride, fuels, oils and UV effects		Cure 3 days – motor oil, diesel, ATF, salt, anti-freeze
Clean Up Solvent	Citrus Cleaner, Acetone, MEK, Toluene		
Odor:	Typical strong acrylic/ester-like odor		
Bead Application Rate	Minimum 6 -10 lbs/100 ft ²	Minimum 6 -10 lbs/100 ft ²	
Dry Retro reflectivity	Initial ⁴ min. 250 mcd/lx/m ²	Initial ⁴ min. 175 mcd/lx/m ²	ASTM E1710

Footnotes:

1. The tests shall be conducted according to ASTM Methods, Federal Test Method Standard No. 141C
2. Part A & B mixed, at 30 to 80 mil thickness.
3. The surface, with properly applied and embedded surface media/beads, must provide a minimum resistance value of 45 BPN when tested according to ASTM E303.
4. Initial to be defined as 3 -14 days after placement.

Application and Site Conditions

Air and surface temperatures shall be in the range of 40°F (4.4°C) to 105°F (40.5°C) during installation and cure. Application temperatures outside this range can negatively affect product performance.

Relative humidity in the specific location of the installation shall be less than 85% and

the surface temperature shall be at least 5°F above the dew point.

The pavement shall be dry and rain-free 24 hours prior to installation.

Asphalt substrates shall be dry, clean and free of contaminants such as surface oils. Newly placed asphalt substrates shall be allowed to age a minimum of 14 days prior to application of Markings.

Concrete must be fully cured for a minimum of 28 days prior to installation of Markings. Surface contaminants such as curing agents, membranes, bond breakers or laitance shall not be used in areas to be marked. Moisture content shall not exceed 0.5%.

Existing markings with a presence of 25% or more are also deemed contaminants and shall be removed. Placement of Markings over existing methacrylates shall be allowed when surface inspection indicates a clean, dry, sound surface.

Glass Beads

Drop on glass beads shall be applied at a rate between 6 – 10 lbs/100 ft.²

Use of the proper bead is critical to initial and long term retro-reflectivity. Please consult your Ennis Traffic Safety Solutions sales representative for proper bead selection.

Drop on beads shall be coated with a Methacrylate compatible coupling agent.

Material Storage

Materials shall be kept in dry protected areas between 40°F (4.4°C) and 77°F (25°C) out of direct sunlight, protected from open flame and with all containers grounded. Hardener component shall be stored separately from other materials.

Manufacturer's specific label instructions and prudent safety practices for storage and handling shall be followed at all times.

The Material shall be suitable for use for six months after the date of receipt when stored in accordance with the Manufacturer's instructions.

Application Equipment

Acceptable application equipment shall be designed and capable of applying 98:2 MMA in a splatter pattern which meets the material characteristics listed in the table above.

Depending on the device, the STRUCTURED pattern can be generated by flowing a curtain of catalyzed material onto a rotating spindle or by passing it through a type of air atomized paint gun.

For inlay application this material shall be installed no closer than 10 mils to the surface of the substrate. If specifications require applying material above the plane of the road, it is recommended to extend the line width at least 1/16 of an inch beyond the edge of the inlay slot to keep the roadway edge from crumbling.

Handling and disposal of HPS-7 materials are covered in the MSDS.

Packaging and Mixing Instructions

The A and B components of HPS-7 STRUCTURED come packaged at 4 gallons per pail or 50 gallons per drum. When using multi-proportional application equipment, liquid BPO is used at a ratio of 98:2 by weight. The parts are pumped into the proper and separate holding tanks on the application vehicle for calibrated automatic metering, mixing, and dispensing through the STRUCTURED spindle device.

For manual application using a hand operated extrusion device, liquid BPO is also mixed at a ratio of 98:2 by weight. The recommended BPO dosage is 4.2 fluid oz. by volume to 1 Gallon of HPS-7 STRUCTURED.

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