



Compound, Corrosion Preventive, Underhood, Water Based, Clear

1 Scope

1.1 Material Description. This specification covers the requirements for a sprayable clear corrosion preventive compound for use on automotive underhood castings and sheet metal components. The compound is suitable for room temperature (22 °C) spray application over room temperature components. It is capable of forming a non-tacky adherent film over a variety of substrates at the specified thickness. The compound is an emulsion system that contains minimal hydrocarbon solvents, and no fibrous fillers such as asbestos. The product must be stored above freezing temperatures (0 °C). It shall be non-toxic and non-injurious to plant personnel.

1.2 Symbols. Not applicable.

1.3 Applicability. Typical applications are underhood metal housings and brackets.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ASTM D92	ASTM D865	ASTM D4017	SAE J400
ASTM D380	ASTM D1475	EPA 24	SAE J2527
ASTM D523	ASTM D2697	ISO 1148	
ASTM D638	ASTM D3792	ISO 1872	

2.2 GM Standards/Specifications.

9981062	GMW14124	GMW15282	GMW16709
GMW16	GMW14638	GMW15349	
GMW3059	GMW14729	GMW16171	
GMW3286	GMW15024	GMW16501	

2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

3 Requirements

3.1 Physical Properties. See Table 1.

3.2 Performance Requirements. See Table 2. Test panels for all performance specification tests are 0.8 mm × 100 mm × 300 mm cold rolled steel or aluminum sprayed coated at room temperature (22 °C) to a wet film thickness of 80 µm and dry film thickness of 20 µm. Coated test panels must be aged for 72 h at room temperature before testing. Corrosion resistance is also required over castings of aluminum or steel.

Table 1: Physical Properties

Properties	Values	Test Methods
Color	Clear	
Flash Point	None	ASTM D92
Density at 25 °C	1.02	ASTM D1475

Properties	Values	Test Methods
Volume Solids	26% Minimum	ASTM D2697
Viscosity at 25 °C	2000 cps	Brookfield RV No. 6 Spindle, 10 rpm
Volatile Organic Compound (VOC) Content	0.12 kg/L, (1.0 lb/gal) Maximum (less water)	ASTM D3792, ASTM D4017, Environmental Protection Agency (EPA 24)
Freeze Thaw Cycle ^{Note 1}	No detrimental effects after one (1) cycle	
Dry Time	20 Minutes	Dry to touch
pH	8.0 to 8.5	ISO 1148
Gloss at 75 degrees (steel substrate)	70 to 80	ASTM D523

Note 1: The Freeze-Thaw Cycle Test consists of the following: 4 h at -10 °C and 4 h at room temperature (22 °C).

Table 2: Performance Requirements ^{Note 1}

Properties	Requirements	Test Methods
Gravelometer at -20 °C	Chip rating of eight (8) or better	SAE J400
Humidity	No detrimental effects	GMW14729, 96 h
Xenon ^{Note 1}	No "mud cracking" or other surface failures after 100 kJ and 168 h salt spray exposure	SAE J2527, GMW3286
Cyclic Corrosion	No detrimental effects. Corrosion rating of eight (8) or better	GMW14124, Cycle G, 10 cycles
High Temperature	No sag or flow from horizontally scribed line the length of panel	168 h at 120 °C
Salt Spray Resistance - Cold Rolled Steel - Aluminum Castings - Steel Castings	No more than 3.0 mm creepback	Scribed, 168 h per GMW3286, with blow off per GMW15282
Detergent Wash Resistance ^{Note 2}	No loss of coating No coating degradation	-
Rubber and Plastic Compatibility ^{Note 3}	Comparable to standard	-
Tack Free ^{Note 4}	At 100 °C, dry to touch	-
Paint Compatibility ^{Note 5}	Comparable to standard	-

Note 1: Xenon test to be the same as SAE J2527 except ultraviolet (UV) temperature to be 50 °C and humidity temperature to be 46 °C.

Note 2: Immerse in detergent solution at 50 °C (detergent solution is composed of 2.5 g of DuPont No. 7 Car Wash Compound or equivalent per liter of tap water). Rinse with spray nozzle, for example: Spray Systems Co. Full Jet No. 1/2GG25 or equivalent with 50 °C water at 70 kPa. The distance between the spray nozzle and panel is to be 250 mm. Test per the following cycle:

- Five (5) minute immersion in detergent solution.
- One (1) minute rinse.
- Ten (10) minute immersion in detergent solution.
- Two (2) minute rinse.