



Deadener; Waterborne, Airless, Chip Resistant, Fast Cure

1 Scope

This specification details the requirements of a waterborne, air dry/fast drying, sound deadening material which can be applied by airless spray to primed or topcoated surfaces. This material is designed to be applied at a wet film thickness of ~500 μm to 1000 μm (~20 mil to 40 mil). This material is released under material specification 9984175.

1.1 Material Description. The material must be a smooth and homogenous mixture free of air, lumps, unmixed particles and foreign materials. The material shall be asbestos free and be capable of being easily sprayed through airless spray equipment, manual or robotic. When sprayed, the material shall give a uniform coating with the tip configuration chosen to minimize the buildup of material at the edges of the sprayed film. The material must adhere to production electrocoat (e-coat), primer surfacer and topcoat systems.

1.2 Symbols. Not applicable.

1.3 Applicability. Spray applied in the wheelhouse of vehicles, after the bake ovens, to help deaden impact noise, protect wheelhouse metal and act as a blackout.

1.4 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

ASTM D1475	ASTM D2369	SAE J1524	SAE J1864
ASTM D2196	EPA Method 24		

2.2 GM Standards/Specifications.

9984175	GMW3205	GMW14270	GMW14872
GMW3059	GMW14124	GMW14700	

2.3 Additional References. GMW18018

Safety and Industrial Hygiene (S&IH) Technical Standard (TS), S&IH TS 3.4-160-02

3 Requirements

3.1 All materials supplied to this standard must comply with **GMW3059, Restricted and Reportable Substances**, including the requirement to obtain a GM-approved International Material Data System (IMDS) submission.

3.2 Physical Properties.

3.2.1 Specific Gravity (ASTM D1475). Specific gravity up to 1.75; however, an individual specific gravity range for each approved source shall be set at the time of approval to this specification. This specific gravity range shall then become a requirement of the approved material. This information shall be included in the material approval submission package.

3.2.2 Volatile Organic Compounds (VOC) Determination. (EPA Method 24 Section 2.2 Using ASTM D2369 Procedure B). The final VOC, in addition to calculations and weights, must be identified and reported.

3.2.3 Viscosity.

3.2.3.1 Pressflow Viscosity. Refer to SAE J1524 for pressflow viscosity, as detailed in Table 1.

Table 1: Pressflow Viscosity

Test Equipment Setup	Test Parameters
Orifice	3.175 mm (25 mm extended tip)
Pressure	69 kPa
Sample Weight	20 g
Viscosity	11 s to 19 s at 24 h

3.2.3.2 Refer to ASTM D2196 for Brookfield viscosity, as detailed in Table 2.

Table 2: Brookfield Viscosity

Test Equipment Setup	Test Parameters
Spindle	Number Seven (7)
Rotational Speed	20 rpm
Timing	Read after One (1) minute
Temperature	25 °C ± 0.5 °C
Range	50 000 cps minimum at 24 h, not to exceed 100 000 cps at 90 days

3.2.4 Color. The material must be black in color.

3.2.5 Particle Size. The material must be capable, of passing through a 0.76 mm mesh screen filter.

3.2.6 Odor (GMW3205). The deadener must not have a toxic or noxious odor. After curing, the deadener must be relatively non-odorous.

3.2.7 Toxicity. The material must not adversely affect the personnel handling it.

3.3 Performance Requirements.

3.3.1 Panel Preparation. Test panel size shall be 102 mm x 305 mm.

3.3.1.1 Substrates. An approved production e-coat from each major supplier and an overspray application of an approved production white base coat/clear coat (BC/CC) system from each major paint supplier.

3.3.1.2 Film Build. Material shall be tested at both 500 µm and 1000 µm (wet film build).

3.3.1.3 Dry Time of Test Panels. Test panel dry time is 72 h at room temperature for all tests except wash resistance. Dry times for wash resistance shall be 4 h, 6 h, 8 h, 12 h, 24 h and 72 h from time of material application to the testing of the panel material.

3.3.2 Corrosion Resistance (GMW14872). Panels prepared according to 3.3.1 shall exhibit no corrosion of the steel under areas protected by the deadener film after 40 cycles of exposure to GMW14872.

3.3.3 Chip Resistance (GMW14700 and GMW14124). Panels shall be prepared per 3.3.1. The deadener shall not develop any chips, lifting or adhesion loss after the gravelometer test per GMW14700 using five (5) pints of gravel at -30 °C. The panels are then exposed to twelve (12) cycles of GMW14124 Cycle F and must not exhibit any adverse effects.

3.4 Process Requirements.

3.4.1 Sag. Panels prepared according to 3.3.1 and air dried vertically for 2 h shall not exhibit any sag greater than 3.2 mm.

3.4.2 Pressure Stability (SAE J1864). The material must be capable of withstanding pumping pressures without its viscosity or other characteristics being adversely affected. It shall not cake or separate fluids or other ingredients when subjected to 22 400 kPa test pressure for 72 h.

3.4.3 Wash Off Resistance.

- Test panel size: 102 mm x 254 mm
- Test panel coatings: e-coat and overspray of BC/CC.