



**PRIMER, METAL, FOR ONE COMPONENT FASTER
MOISTURE CURING URETHANE ADHESIVE**

▽ WSB-M2G234-C

**PRIMER, METAL, FOR ONE COMPONENT FASTER
MOISTURE CURING URETHANE ADHESIVE - SILANE
BASED CLEARCOAT CHEMISTRIES ONLY**

▽ WSB-M2G234-C2

PRIMER, METAL, FOR ONE COMPONENT FASTER

▽ WSB-M2G234-C3

1. SCOPE

The material defined by these specifications are highly reactive moisture sensitive solvent/resin blend adhesion promoting primers.

2. APPLICATION

These specifications were originally released for priming the metal flange of the vehicle openings (windshields, backlites, and side) in preparation for one component urethane adhesives; i.e. ▽ WSB-M2G316-B, and WSS-M2G316-B2/B3/B4/B5. The primer is referred to as Adhesion Primer Painted Metal in the ▽ WSB-M2G316-B, and WSS-M2G316-B2/B3/B4/B5 specification. The primer is applied only to painted metal surfaces as approved by the responsible Materials Engineering Activity. The primer can be manually or robotically brush applied and robotically spray applied.

▽ WSB-M2G234-C shall be used in assembly plants with non-silane based clearcoat chemistries. It must not be used with silane based chemistries.

▽ WSB-M2G234-C2 shall be used in assembly plants with silane based clear coat systems only. It must not be used with other paint chemistries. (Reference para 4.8)

▽ WSB-M2G234-C3 shall be used in assembly plants where data has shown a compatibility with that plants' clearcoat chemistry. (Reference para 4.9). These materials were originally released for some carbamate paint chemistries (Reference para 4.9).

2.1 MANUFACTURING PROCESS RECOMMENDATION

These primers are moisture sensitive and require special handling for manual and automated processes as outlined in Table 1 and Table 2.

- The process parameters listed in Table 1 and Table 2 cover the critical elements for these materials and are not all inclusive. Please consult with Materials Engineering for any questions.
- Approved suppliers are responsible for maintaining the accuracy and relevancy of these process parameters (in their Process Standard). Approved suppliers must submit any changes to these process parameters in a timely manner (within 30 days) for review and approval by Materials Engineering.

Date	Action	Revisions
2007 04 19	Revised	Inserted 2.1, Table 1 & 2; Revised 2., 3.15 & 5.5.4 M. Mehandru
2003 01 17	Revised	Para 3.0 inserted ; Para 3.1, 3.2, 3.3, 3.21, 3.22, 4 deleted
1990 03 21	Released	NB00E00179051000 K. King, E. Perardes, M. Perchard



3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.4 COLOR Black

3.5 SHEAR ADHESION, min 2.5 MPa

100 % cohesive failure of adhesive on production E-coat and spray primer.

Exposure Conditions - Bonded Test Assemblies:

- . Normal (fresh materials) test at room temperature, -9 +/- 1 °C, and 43 +/- 2 °C.
- . Normal (urethane aged 3 months and primers aged 2 months at 35 +/- 2 °C) test at room temperature, -9 +/- 1 °C, and 43 +/- 2 °C.
- . Heat Aging (At 88 +/- 2 °C) 2 weeks
- . Water Immersion (FLTM BI 104-01, at 32 +/- 1 °C) 240 h
- . Humidity Aging (At 38 +/- 1 °C and 98 +/- 2% relative humidity) 2 weeks
- . Weatherometer (SAE J1885) 2000 h
- . Florida Exposure (SAE J1976) 2 years
- . See ▽ WSB-M2G316-B/B2, para 4.1, 4.2, 4.3, 4.4.

Test Method Exceptions: Lap Shear

- . Prepare shear assemblies as illustrated in ▽ WSB-M2G316-B/B2 Figure 1.
- . Brush and/or spray apply metal primer on the bottom 6.5 mm of each primed or primed and painted coupon as outlined in ▽ WSB-M2G316-B and /B2, Table 1. Condition the applied primer at room temperature for 30 minutes min, 110 h max.
- . Brush apply glass primer wipe on the bottom 6.5 mm of each glass coupon outlined in ▽ WSB-M2G316-B/B2 Table 1. Wipe off with a clean cloth 3 to 5 seconds after application.
- . Within 10 minutes maximum after glass primer wipe off, brush apply glass blackout primer to the glass surface in the same area. Condition primer at room temperature for 5 minutes min, 72 h max.



- Apply a 6.5 mm diameter bead of adhesive along the primed glass coupon surface. Within 5 minutes after adhesive application, position the adhesive on the glass coupon in contact with the primed metal surface. Maintain a 5 mm nominal adhesive bondline thickness.
- Condition assembly at room temperature for 72 h prior to test or environmental aging. Assemblies tested at -9 °C and 43 °C shall be maintained at temperature for 2 h min prior to test. After environmental aging, maintain the assemblies at room temperature for 4 h minimum prior to test.
- Determine the adhesion in a tensile machine having a jaw separation rate of 25 mm/minute. Report strength value and mode of failure. Refer to SAE J1529 for sample fixture and other pertinent test information.

NOTE: Any new primer must be tested for adhesion properties. Adhesion values and mode of failure shall be reported prior to approval and release for plant application.

3.6 VISCOSITY

(FLTM BI 111-01, No. 4 Ford Cup)

		-C, -C2	-C3
3.6.1	Normal	17 - 30 s	23-50 s
3.6.2	Aged, max (72 h at 50 +/- 1 °C Testing should be Conducted, right after the material has been manufactured)	15 s increase over normal	40 s increase over normal

-C, -C2 -C3

3.7 SOLIDS, min

(ASTM D 2834, except heat at 100 +/- 2 °C
in a mechanical convection oven for 3 h)

30% 35%

3.8 ODOR

The material must not have a toxic or noxious odor. After curing, the material must be relatively non-odorous.

3.9 ASH CONTENT, BASED ON SOLIDS WEIGHT, max

55%

Test Method: Place the crucible containing the solids residue in a cool muffle furnace. Slowly heat to and maintain at 760 +/- 30 °C for 1 h. Cool in a desiccator, weigh, and calculate the ash content.

3.10 WEIGHT PER VOLUME

(ASTM D 816)

The weight tolerance for any one supplier shall be +/- 0.043 kg/L based on the weight of the original approved production sample (see para 4.3).