



PRIMER/CLEANER, GLASS, SILANE, TRANSPARENT YELLOW	▽ WSB-M5B280-C
PRIMER/CLEANER, GLASS, SILANE, TRANSPARENT RED	▽ WSB-M5B280-C2
PRIMER/CLEANER, GLASS, SILANE, NON-PHOTOCHEMICALLY REACTIVE TRANSPARENT RED	▽ WSB-M5B280-C3
PRIMER, GLASS, SILANE, ONE STEP INCREASED UV STABILITY	▽ WSS-M5B280-C4

1. SCOPE

The materials defined by these specifications are silane blend glass cleaners/adhesion promoters that deposit nonomolecular silane blend films and also remove surface contaminants.

2. APPLICATION

These specifications were released originally for materials used to clean and condition windshield glass prior to the application of adhesion promoting primer (▽ WSB-M2G314-B). (These primers should be applied by means of a brush, or other suitable applicator, then wiped with a clean lint free cloth so as to leave no streaks or visual residue, assuming the thinnest possible coat.)

WSS-M5B280-C4 is a one step glass primer. WSS-M25B280-C4 is not to be used as a one step glass primer with adhesive materials conforming to WSB-M2G316-B, and WSS-M2G316-B2/B3/B5.

2.1 MANUFACTURING PROCESS RECOMMENDATION

These primers are moisture sensitive and require special handling for manual and automated process 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.

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).

Date	Action	Revisions
2007 04 19	Revised	Inserted 2.1, 4.4.4, Table 1 and Table 2; Revised 4.4 M. Mehandru
2006 08 08	Revised	Para 4.1 M. Mehandru
1990 02 08	Released	NB00E00179051000 K. King, E. R. Rezendes



▽ WSB-M5B280-C/C3
▽ WSS-M5B280-C4

3.2 COLOR

▽ WSB-M5B280-C	Transparent Yellow
▽ WSB-M5B280-C2	Transparent Red
▽ WSB-M5B280-C3	Transparent Red
▽ WSS-M5B280-C4	Transparent Light Yellow

3.2.1 Fluorescence on Glass Under Long-Wave UV Light

This provision applies to WSS-M5B280-C4 primer. When the primer (within shelf life) is applied to glass, it will fluoresce when a BLAK-RAY Model B 100AP lamp or similar source illuminate the glass. The fluorescence is not a permanent feature of the primer after it is applied to the glass.

3.3 VISCOSITY, max (FLTM BI 111-01, No. 1, Zahn Cup)

▽ WSB-M5B280-C	25 - 40 s
▽ WSB-M5B280-C2	25 - 40 s
▽ WSB-M5B280-C3	25 - 40 s
▽ WSS-M5B280-C4	29 - 44 s

3.4 WEIGHT PER VOLUME (ASTM D 1475)

The weight tolerance for any one supplier shall be +/- 0.075 kg/L based on the weight of the original approved production sample (see para 4.3).

3.5 DRYING RATE, max

▽ WSB-M5B280-C	1 minute
▽ WSB-M5B280-C2	1 minute
▽ WSB-M5B280-C3	10 minutes
▽ WSS-M5B280-C4	30 minutes

Test Method: Apply a 0.008 - 0.013 mm film of primer 25 mm wide to a 75 x 75 mm clean glass plate. To determine the primer drying rate, immediately at rapid intervals, dab the primer film with a wad of absorbent cotton. Observe if any of the cotton fibers adhere to the primed surface. Record the drying rate, as the time elapsed from the initial primer application until the cotton fibers do not adhere to the primer. Note: The drying rate is longer for the C3 suffix material due to the type of solvent. C4 is a one step clear primer and thus has a different drying rate. Actual differences in drying rate as processed through the assembly plant are negligible.



▽ WSB-M5B280-C/C3
▽ WSS-M5B280-C4

▽ 3.6 **SHEAR ADHESION**, min
(SAE J1529, with exceptions
below)

3.4 MPa
100% cohesive failure of
adhesive on production
glass/E-coat

Exposure Conditions - Bonded Test Assemblies:

- Normal (fresh materials) test at 23 +/- 2 °C, -10 +/- 1 °C and 43 +/- 2 °C.
- Normal (urethane aged 3 months and primers aged 2 months at 35 +/- 2 °C) test at 23 +/- 2 °C, -10 +/- 1 °C, and 43 +/- 2 °C.
- 2 weeks heat age at 88 +/- 2 °C.
- 240 h water immersion at 32 +/- 1 °C (FLTM BI 104-01)
- 2 weeks humidity age at 98 +/- 2% relative humidity and 38 +/- 1 °C.
- 2000 h Weatherometer (SAE J1885).
- 2 year Florida exposure, 5° South DWI.
- See specification ▽ WSB-M2G316-B, para 5.1, 5.2, 5.3, 5.4.

Test Method Exceptions: Lap Shear

- Prepare shear assemblies as illustrated in ▽ WSB-M2G316-B, Figure 1.
- Brush and/or spray apply painted metal primer on the bottom 6.5 mm of each primed or primed and painted coupon as outlined in ▽ WSB-M2G316-B, 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, Table 1. Wipe off with a clean cloth 3 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 23 +/- 2 °C for 5 minutes min, 110 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.

When applying WSS-M5B280-C4 open time between primer application and adhesive is 20 seconds minimum and 110 hours maximum.

- Condition assembly at 23 +/- 2 °C for 72 h prior to test or environmental aging.

Note that for WSS-M5B280-C4, condition for 168 h at 23 +/- 2 °C prior to testing environmental aging. Assemblies tested at -9 °C or +43 °C shall be maintained at temperature for 2 h min prior to test. After environmental aging, maintain the assemblies at 23 +/- 2 °C for 4 h prior to test.