Description

Grip-Gard Plus is a high solid, two-component, polyurethane topcoat developed for application to metal signage components. Grip-Gard Plus is the most durable spray applied polyurethane metal finish available to the Sign industry. As Grip-Gard is an intermix toner system where topcoats can be mixed to match thousands of solid colors in any gloss level. In addition to solid colors the use of six additional metallic and transparent toners allows a broad range of metallic colors to be utilized in the Grip-Gard Plus system.

<table>
<thead>
<tr>
<th>100</th>
<th>Grip Gard Plus Intermix Color, Stock White, Black and Bronzes</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Grip-Gard Plus Hardener</td>
</tr>
<tr>
<td>25</td>
<td>Grip-Gard Plus Reducer</td>
</tr>
</tbody>
</table>

**NOTE:** When Mixing Brushed Aluminum Stock Color, DO NOT add the 25 parts reducer

Use the Measuring Stick #101 (Black)

**Semi / Satin / Low Gloss Finishes**

Refer to mixing information later in this TDS

B01 Matte Reducer

**Spray gun set-up:**

- Gravity: 1.3 – 1.5 mm
- Siphon: 1.6 – 1.8 mm

**Application pressure:**

- 30–40 psi (2-3 bar) at the air inlet
- HVLP max 10 psi (0.7 bar) at the air cap

Application

Apply 2 medium wet coats

Flash between coats

2 – 3 minutes at 70°F (20°C)

24 hrs. at 70°F (20°C)
1.5 hrs. at 100°F (38°C)
30 min. at 140°F (60°C)
Accelerated: 1.5-2.5 hrs. at 70°F (20°C)

Use suitable respiratory protection

Akzo Nobel Sign Refinishes recommends the use of a fresh air supply respirator
**Description**

Grip-Gard Plus is a high solid, two-component, polyurethane topcoat developed for application to metal signage components. Grip-Gard Plus is the most durable spray applied polyurethane metal finish available to the Sign industry. As Grip-Gard is an intermix toner system where topcoats can be mixed to match thousands of solid colors in any gloss level. In addition to solid colors the use of six additional metallic and transparent toners allows a broad range of metallic colors to be utilized in the Grip-Gard Plus system.

**Grip-Gard Plus Environmental Statement**

All Grip-Gard Plus toners, hardeners, reducers and additives are lead and chrome free. No products from AkzoNobel Sign Finishes, including the lead and chrome free primers contain heavy metals such as manganese, nickel and cadmium in amounts high enough to reach the MSDS reportable threshold.

**Suitable substrates**

— All Grip-Gard primers and surfacers.
— Most existing finishes, degreased and sanded with #P320 to #P400 grit paper dry or #P500 to #P600 wet.
— Fiberglass, (unbroken gel coat) degreased and sanded with #P320 to #P360 grit dry or #P500 to #P600 wet.

For detailed information on the use of primers and surfacer, refer to the following Technical Data Sheets (TDS):

- TDS Grip-Gard White Washprimer, Light Enhancing
- TDS Grip-Gard Epoxy Sealer White and Gray
- TDS Grip-Gard Epoxy 2.8/3.5
- TDS Grip-Gard Epoxy 4.6
- TDS Grip-Gard Brite White HF Primer
- TDS Grip-Gard HB Surfacer

**PREPARATION:**

**Products and additives**

**MAIN PRODUCTS:**

Grip-Gard Plus Intermix toners

- Satin Black
- Low Gloss White
- 312 Medium Bronze
- 313 Dark Bronze
- 313E Dark Bronze
- Brushed Aluminum

**HARDENER:**

Grip-Gard Plus Hardener

**REDUCERS:**

Grip-Gard Plus Reducer: A standard reducer for most climate temperatures

Grip-Gard Plus Accelerator Reducer: A reducer with catalyst for faster cure times

Grip-Gard Plus Retarder: A slow reducer for use in warmer temperatures

Grip-Gard Plus Extra Slow Retarder: Extra slow reducer for high temperatures

Grip-Gard Plus Exempt Reducer: A standard reducer with VOC exempt solvents

**ADDITIVES:**

Grip-Gard Plus B01 Matte Reducer: A matte reducer designed to lower the gloss level of Grip-Gard Plus topcoats

SuperTop Plus: An accelerator to speed cure time with minimal impact on pot life

Grip-Gard Plus 1K Touch Up Additive

Grip-Gard Plus Brushing and Rolling Additive (See B/R TDS for instruction)
Basic raw materials

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grip-Gard Plus</td>
<td>Acrylic resins, solvents</td>
</tr>
<tr>
<td>Grip-Gard Plus Hardener</td>
<td>Polyisocyanate resins</td>
</tr>
<tr>
<td>Grip-Gard Plus Reducers</td>
<td>Solvents</td>
</tr>
<tr>
<td>Grip-Gard Plus Accelerators</td>
<td>Solvents containing a catalyst</td>
</tr>
</tbody>
</table>

Mixing

100 parts by volume Grip-Gard Plus Intermix color, Stock White, Black and Bronzes
50 parts Grip-Gard Plus Hardener
25 parts Grip-Gard Plus Reducer

Use Mixing Stick #101 (Black)

NOTE: When Mixing Brushed Aluminum Stock Color, DO NOT add the 25 parts reducer

Stir after mixing
Grip-Gard Plus must be stirred thoroughly immediately after mixing the components.

ACCELERATOR MIXING RATIO:
Supertop Plus Accelerator can be added to Grip-Gard Plus at a level of ½ to 1 ounce per ready-to-spray quart, or 2 - 4 ounces per ready-to-spray gallon. Accelerator is not recommended above 80° F.

MIXING NOTE:
For additional viscosity reduction while maintaining the required VOC, Grip-Gard Plus Exempt Reducer may be added. In VOC restricted areas, it is required that compliant products be used. In non-VOC restricted areas any Grip-Gard Plus Reducer or Retarder or Accelerator Reducer can be added for additional viscosity reduction.

GLOSS BLENDS:
Any gloss level can be achieved by using the appropriate blend of Grip-Gard Plus and Grip-Gard Plus B01 Matte Reducer.

Recommended Mix Ratios for Gloss Levels (by Volume)

SEMI GLOSS FINISH (USE MEASURING STICK #102)
100 parts by volume of Grip-Gard Plus topcoat, with
50 parts by volume of Grip-Gard Plus Hardener
100 parts by volume of Grip-Gard Plus B01 Matte Reducer

LOW GLOSS FINISH (USE MEASURING STICK #102)
100 parts by volume of Grip-Gard Plus topcoat, with
50 parts by volume of Grip-Gard Plus Hardener
125 parts by volume of Grip-Gard Plus B01 Matte Reducer

MATTE FINISH (USE MEASURING STICK #102)
100 parts by volume of Grip-Gard Plus topcoat, with
50 parts by volume of Grip-Gard Plus Hardener
150 parts by volume of Grip-Gard Plus B01 Matte Reducer

For additional viscosity reduction, or for use in warm to hot / humid conditions, 5-10% Grip-Gard Plus Reducer, Retarder or Extra Slow Retarder may be added to final mix to improve performance.
In VOC restricted areas, it is required that compliant products be used. For maintaining the required 3.5 VOC in restricted areas, Grip-Gard Plus Exempt Reducer must be used.

MATTE NOTE:
Gloss range may vary according to the amount of film build and cure time of topcoat.
Technical Data Sheet
Topcoats

GRIP-GARD® PLUS 3.5 POLYURETHANE
FOR PROFESSIONAL USE ONLY

JUNE 2012

Viscosity

The proper viscosity achieved using the recommended mixing ratio. Grip-Gard Plus 17 - 24 sec. DIN Cup #4 at 70°F (20°C).

Spray gun set-up / application pressure

<table>
<thead>
<tr>
<th>Spray gun</th>
<th>Fluid tipset-up</th>
<th>Application pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravity</td>
<td>1.3 – 1.5 mm</td>
<td>30–40 psi at spray gun air inlet</td>
</tr>
<tr>
<td>Suction</td>
<td>1.4 – 1.7 mm</td>
<td>30–40 psi at spray gun air inlet</td>
</tr>
<tr>
<td>HVLP Pressure</td>
<td>1.0 – 1.2 mm</td>
<td>HVLP max 10 psi (0.7 bar) at the air cap</td>
</tr>
<tr>
<td>HVLP Siphon</td>
<td>1.8 – 2.2 mm</td>
<td>HVLP max 10 psi (0.7 bar) at the air cap</td>
</tr>
<tr>
<td>HVLP Gravity</td>
<td>1.5 – 1.7 mm</td>
<td>HVLP max 10 psi (0.7 bar) at the air cap</td>
</tr>
<tr>
<td>Pressure</td>
<td>1.0 – 1.4 mm</td>
<td>30–40 psi at spray gun air inlet</td>
</tr>
<tr>
<td>Electrostatic</td>
<td>1.2 – 1.7 mm</td>
<td>40 – 50 psi at spray gun air inlet</td>
</tr>
<tr>
<td>Airless Spray</td>
<td>0.011 – 0.015 mm</td>
<td>1500 – 3000 psi</td>
</tr>
<tr>
<td>Air Assisted Airless</td>
<td>0.011 – 0.015 mm</td>
<td>700 – 900 psi</td>
</tr>
</tbody>
</table>

Pot-life

Mixture with Grip-Gard Plus Hardener & Reducers: 1.5 - 2 hours at 70°F (20°C)
Mixture with Grip-Gard Plus Hardener & B01 Matte Reducer: 1.5 - 2 hours at 70°F (20°C)
Mixture with Accelerator Reducer or SuperTop Plus: 1.5 hours at 70°F (20°C)

Application process

**Solids**: Apply 2 single medium wet coats with 2-3 minutes flash between coats. Additional coats may be required if applying clean vibrant bright colors.

**Semi to Low gloss Solids**: Apply 2 single consistent wet coats of Grip-Gard Plus using B01 Matte Reducer. Spray 6-8 inches from substrate with tight overlaps to avoid striping or mottling. Striping is appearance lines not consistent with the overall gloss of the sign. This is caused by excessive build up of paint in a particular area, usually caused by double coating or too narrow of a fan with spray gun. Mottling is significant gloss differences over large sections or entire sign, usually caused by very wide or erratic spray patterns. Other causes of mottling are heat and humidity related as well as poor spray gun performance.

**Metals**: When spraying metallic colors, heavy or excessive coats can cause motting or uneven distribution of aluminum flake. Metallic colors should be sprayed using medium wet coats with 3-5 minutes flash time between coats.
A light or dust coat (50% trigger) may be required immediately after final coat to even out the metallic pattern. Lighter coats will in most instances produce a lighter color while heavier coats will be darker. Extra solvent (10-20%) may also be added to lighten metallics and improve flow of aluminum. In VOC restricted areas, use only Grip-Gard Plus Exempt Reducer (395709) as the additional solvent for metallics.

**Semi to Low gloss metallic's** - adding flatteners into Grip-Gard Plus metallic colors can severely distort the color causing the metallic to be dark and dull compared to the high gloss version. For cleaner and brighter metallics, it is recommended that a low or gloss modified clear be applied over the top of the Grip-Gard Plus high gloss metallic color. (See TDS for Grip-Gard Plus Clear coats)

**TOUCH UP:**
Grip-Gard Plus 1K Touch up additive can be used with Grip-Gard Plus topcoats to touch up small areas or cover scratches in the field. See 1K Touch up additive TDS

### Film thickness

| Grip-Gard Plus | 1.0 – 1.2 mils per single coat. |

### Recoatability

- Grip-Gard Plus can be recoated with itself up to 48 hours without sanding. After 48 hours, sanding will be necessary.

### NOTE:
- Vinyl graphics can be applied after 48 hours at 70°F (20°C). Or after 24 hours when Supertop Plus has been added. Reflective vinyl graphics require additional time (contact manufacturer for recommendation) before applying to avoid bubbling.

### NOTE:
- Stripping or lettering on Grip-Gard Plus must be applied within 24 hours to obtain good adhesion. After 24 hours, scuff with a gray scuffing pad.

### Curing time

- **Curing at 70° F:**
  - Dust Free: 50 Minutes
  - Without Accelerator: Dry to Exposure: 24 Hours
  - With Accelerator: Dust Free: 30 – 45 Minutes
  - Dry to Exposure: 1.5 – 2.5 Hours

- **Curing at 100° F:**
  - Dust Free: 30 Minutes
  - Dry to Exposure: 1.5 Hours

- **Curing at 140° F:**
  - Dust Free: 15 Minutes
  - Dry to Exposure: 30 Minutes

**Note:** Adding retarder or slower reducers can extend dust free time in cooler temperatures
Material usage

Approximate square foot coverage per gallon at 1 dry mil:

<table>
<thead>
<tr>
<th>Transfer Efficiency</th>
<th>Gloss RTS</th>
<th>Low Gloss RTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% (Theoretical)</td>
<td>844</td>
<td>788</td>
</tr>
<tr>
<td>65% (HVLP)</td>
<td>548</td>
<td>512</td>
</tr>
<tr>
<td>35% (Conventional)</td>
<td>295</td>
<td>276</td>
</tr>
</tbody>
</table>

**NOTE:** 2.0 – 2.5 mils dry film thickness is recommended for warranty purposes.

Cleaning of equipment

- Clean equipment with Cleaning Solvent LV Item# 391000

VOC

- Grip-Gard Plus (RTS per this TDS): 3.5 lb/gal. 420 g/liter

Product storage

Store products unopened, and used products with closed lids preferably between 70°F-95°F (10°C-35°C)

**SHELF LIFE:**
- Grip-Gard Plus: Two years if stored unopened at room temperature.
- Grip-Gard Plus Hardener: One year if stored unopened at room temperature.
- Grip-Gard Plus Reducers: Two years if stored unopened at room temperature.

**FOR PROFESSIONAL USE ONLY**

**IMPORTANT NOTE:** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advices given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user’s responsibility to verify that this data sheet is current prior to using the product.

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