Cardinal’s 6771-CLE21231-B is a clear semi gloss low VOC two-component beaded polyurethane coating. This coating is well suited for interior applications on plastic. The 6771-CLE21231-B was formulated to meet strict air quality regulations, while maintaining the application and performance benefits of a conventional polyurethane coating.

**Typical Uses:**
- Top coat for decorative and protective use on plastic.
- Electronic enclosures

**Benefits:**
- Excellent chemical and solvent resistance.
- RoHS / WEEE compliant

**Surface Preparation and Priming:** The most important steps in a successful coating process are cleaning, pretreatment and priming. The following is a brief outline of some basics for unpainted substrates. It is not intended to be all-inclusive. For more information on your particular application contact Cardinal.

Cleaning the Substrate:
All surfaces to be coated, must be free of dirt, grease, oil, oxidation, mill scale, and all other contaminants. The surface must be thoroughly dry before painting. Air quality regulations have limited the allowable emissions from cleaning operations.

Plastic — All mold release should be completely removed. 6771-CLE21231-B polyurethane is compatible with a variety of plastics, however, since there are numerous different formulations of plastic, a trial sample should be painted and checked before running production. If 6771-CLE21231-B attacks or weakens the plastic, a barrier coat of 3777-1 clear waterborne acrylic enamel may help.

**Primer Selection:**

<table>
<thead>
<tr>
<th>PRODUCT NO</th>
<th>DESCRIPTION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3777-1</td>
<td>Waterborne Acrylic Clear</td>
<td>Barrier coat for some plastics</td>
</tr>
</tbody>
</table>

**Related Products:**

<table>
<thead>
<tr>
<th>PRODUCT NO</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Series Reducers</td>
<td>Thinners. Urethane grade. 1600-01, fast; 1600-02, medium; 1600-03, slow; 1600-06, very slow.</td>
</tr>
<tr>
<td>EL-005</td>
<td>Accelerator. Speeds up dry time (and shortens pot life).</td>
</tr>
<tr>
<td>P-5033</td>
<td>Surfactant. Helps eliminate craters and fish-eyes.</td>
</tr>
</tbody>
</table>

**Type:** Aliphatic acrylic polyurethane.

**Components:** Two.

**Colors:** Clear.

**Gloss:** Semi gloss.

**Coverage:**
- Mixed paint, 3.5 lbs/gal : 365 ft²/gal.
- Calculation: 1604 ft²/gal x % volume solids x TE / DFT

**VOC Mixed:**
- 43 grams/liter = 0.35 lbs/gal excluding exempt
- 20 grams/liter = 0.17 lbs/gal including exempt
- See mix ratio table below.

**Volume Solids:**
- 6771-CLE21231-B .......... 44%
- 6SLVH .......................... 40%
- Mixed to 3.5 lbs/gal .......... 35%

**Flash Point:** -4°F TCC

**Shelf Life:** 1 year from date of manufacture in factory sealed container.

**Application:** After preparing the surface, thoroughly mix component 1 before adding catalyst. Mix only the amount of material needed. The base to catalyst proportion must be measured accurately, by volume only, to obtain optimum film properties. Do not use reducers that contain water or alcohol; these react with the catalyst and can cause a variety of problems. Be aware of spray-able pot life. Brushing, rolling and dipping are not recommended.

**Mix Ratios:** Two components must be mixed properly to obtain coating performance. Thinning depends on applicator’s regulatory VOC limits.

- 3 parts 6771-CLE21231-B (by volume)
- 1 part 6SLVH catalyst
- 1 part HP-439

**Viscosity:** 19°-21° #2 Zahn can be expected for most colors.

**Spray-able Pot Life:** 2 hrs. at 3.5 lbs. VOC/gal

Note: If material is accelerated the actual pot life may vary depending on amount added.

**Recommended DFT:** 1.5 – 2.5 mils (depending on color)

**Cure:**
- Air Dry
  - Tack free 2 hrs.
  - Dry to handle 24 hrs.
  - Dry hard 72 hrs.
- Force Dry *
  - 1 hr at 120° F
  - 30 min at 140° F
  - 15 min at 180° F

*(At 1.5 mils dry film thickness, 78°F, 50% RH)*

* Some Air quality regulations require a maximum temp. of 194°F to qualify as an “air dry” system which generally have higher VOC limits than baking systems.

(Continued on page 2)
**Trouble Shooting:**

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blisters, pin holes or</td>
<td>Water contamination.</td>
<td>Eliminate water – Check air lines.</td>
</tr>
<tr>
<td>solvent pop</td>
<td>Entrapped air.</td>
<td>Use fresh catalyst. Use urethane grade</td>
</tr>
<tr>
<td></td>
<td>Entrapped solvent.</td>
<td>thinners only.</td>
</tr>
<tr>
<td>Craters</td>
<td>Contaminated ambient air, e.g., silicone</td>
<td>Locate and eliminate source of contamination.</td>
</tr>
<tr>
<td></td>
<td>mist, dust.</td>
<td></td>
</tr>
<tr>
<td>Fish-eyes</td>
<td>Substrate contamination.</td>
<td>Clean and prepare source of contamination.</td>
</tr>
<tr>
<td>Not drying</td>
<td>Alcohol in reducer.</td>
<td>Use Cardinal’s 1600 series or urethane</td>
</tr>
<tr>
<td></td>
<td>Wrong catalyst ratio.</td>
<td>grade reducers only.</td>
</tr>
<tr>
<td></td>
<td>Improper surface preparation.</td>
<td>Double check mix ratio.</td>
</tr>
<tr>
<td>Poor adhesion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloss variation</td>
<td>Variation in application, cure schedule,</td>
<td>Consistent gloss depends upon consistent</td>
</tr>
<tr>
<td></td>
<td>catalyst ratio, humidity.</td>
<td>process.</td>
</tr>
</tbody>
</table>

**PRODUCT IDENTIFICATION**

6771 – CLE21231 - B (example)

- Color number
- Gloss: 0 = flat; 1 = 10°; 2 = 20° . . . etc.; 70° - 90°+ = high gloss
- Special: e.g., 2 = metallic; 3 = cardtex; 4 = texture; 6 = primer; 7 = clear
- Product type

**APPLICATION EQUIPMENT:** Most air quality regulations require the paint application transfer efficiency to be 65% or better. This generally means using electrostatic or high volume low pressure (HVLP) spray guns. Otherwise, conventional pressure feed, airless or air assisted airless spray equipment can be used. Air supply lines need water and oil traps.

**EQUIPMENT CLEAN-UP:** Clean up should be done as soon as possible keeping in mind the pot life of the mixed paint. Avoid leaving catalyzed paint in the lines. Air quality regulations have limited the allowable emissions from cleaning operations.

**PRODUCT LIMITATIONS:**

- Catalyst reacts with water. Air supply should be dry. Containers should be kept tightly closed. Use urethane grade thinners only.
- Alcohols and glycols interfere with curing chemistry and should be avoided. They can be found in some lacquer thinners and certain synthetic reducers.
- Optimum film properties are dependent upon proper mixing of paint and catalyst.

**SAFETY:** Refer to the product’s Material Safety Data Sheet (MSDS) for complete safety information. Contains organic solvents. Use with adequate ventilation. Do not breathe vapors or spray mists. If component TLVs are exceeded, a NIOSH approved air supplied respirator is advised. See MSDS for TLV information. Contents are FLAMMABLE. Keep from heat, sparks or open flame. Allergic reactions are possible. Avoid use by persons with respiratory problems. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

**FIRST AID:**

Eye contact: flush immediately with plenty of water for at least 15 min. and get medical attention.
Skin contact: wash thoroughly with soap and water for 5 minutes. If swallowed, do not induce vomiting and get medical attention immediately.