Covinax 211-02 DEV
Ultra-Removable Adhesive

Covinax 211-02 DEV is a surfactant stabilized acrylic copolymer emulsion developed for use as a removable pressure sensitive adhesive for use with vinyl film stocks. It will perform well as a removable adhesive from most surfaces, including glass, metal and plastics, exhibiting smooth non-tearing adhesion and maintains very constant peel adhesion even after extended aging.

PHYSICAL PROPERTIES
Polymer Type: Acrylic
Protective System: Anionic
Color: White
Viscosity (cps): 250 - 650 (RVF, Spindle #3/50 RPM/77°F)
Percent Solids (%): 55.5 - 58.0
pH: 4.9 - 6.9
Weight Per Gallon: 8.4
Shelf Life: 6 months
Freeze/Thaw Stability: Unstable
Borax Compatible: Yes
Glass Transition Temperature (Tg): (DSC): -55.1°C

PERFORMANCE PROPERTIES
A 1 mil (28g/m²) dry film of Covinax 211-02 DEV cast directly onto 1 mil thickness polyester film will exhibit the following average performance properties when tested on #304 stainless steel, which has a #3 surface finish.

<table>
<thead>
<tr>
<th>Test</th>
<th>Typical Values</th>
<th>Target Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>180° Peel Adhesion¹ (lb)</td>
<td>0.40</td>
<td>0.70 maximum</td>
</tr>
<tr>
<td>178° Shear Adhesion² (minutes)</td>
<td>95</td>
<td>45 minimum</td>
</tr>
<tr>
<td>Loop Tack³ (lb)</td>
<td>0.70</td>
<td>1.0 maximum</td>
</tr>
</tbody>
</table>

Minimum Application Temperature: >32°F
Service (Use) Temperature: 20°F to 250°F

NOTE: Minimum application and service temperatures are dependent upon many factors including face stock, adhesive coat weight, adhesion, and intended application. We can only offer an estimate based on the Tg and typical performance properties of the adhesive.

FDA Compliance: 21 CFR 175.105
21 CFR 176.170
21 CFR 176.180

ASTM F963-03 Compliance: Standard Consumer Safety Specification on Toy Safety, Section 4.3.5.2.

¹Franklin International 03QC5002, 30 minute dwell.
²Franklin International 03QC5003, 0.25 square inch, 500 gram load, 10 minute dwell.
³Franklin International 03QC5004, 1 square inch contact, 1 second dwell.
IMPORTANT NOTICE TO CUSTOMER:
The recommendations and data contained in this Product Data Sheet for use of this product are based on information Franklin believes to be reliable. They are offered in good faith without guarantee, as conditions and methods of use of our product by Customer are beyond Franklin’s control. Customer must determine the suitability of the product for a particular application before adopting it on a commercial scale.

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Technical Information Sheet 81507

Pressure Sensitive Adhesives
Determining Developmental Products’ Specification Ranges

This Technical Information Sheet reviews how specification ranges are created for new developmental adhesives and polymers (labeled as “DEV”) from initial production through commercialization (removal from DEV status).

Franklin utilizes the Stage Gate Process for developing new polymers and adhesive formulations. Customer requirements are entered into the initial stage of the process. During the developmental process, lab and pilot samples are normally created and tested by Franklin technical personnel as well as by the customer for approval. These samples are labeled as experimental (EXP) batches.

In order for the EXP product to move to Franklin production, at least three replicated lab and/or pilot batches are made. From these batches, target ranges are calculated using 3 Sigma limits and are incorporated into Franklin’s QC and Production System, creating a DEV product.

Once at least eight consecutive production batches are made without changes to the formulation or process, the product specifications are set based on these batches, the product is no longer developmental and the DEV designation is removed.

In most cases, target ranges will change from initial production batches through the commercialization process. Often this results in a shift, and possibly a broadening, of the specification ranges. The customer is notified of these changes.

DGP 11/12/2018