

### Energy-Cured Coatings – MEK Rub Test

<b>Scope</b>	<ul style="list-style-type: none"> <li>- Qualitative test used to assess the relative condition of an Energy-Cured coating film by testing the chemical resistance by exposure to MEK (Methyl Ethyl Ketone) using controlled conditions/method.</li> <li>- This testing type/method is also referenced under ASTM 5402-15 'Standard Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs'.</li> </ul>
<b>Test Instruments</b>	<ul style="list-style-type: none"> <li>- MEK (Methyl Ethyl Ketone)</li> <li>- Cotton Swabs (Q-Tips)</li> <li>- PPE as noted in the MEK SDS – solvent-resist gloves, respirator, eye protection</li> </ul>
<b>Test Limitations</b>	<ul style="list-style-type: none"> <li>- MEK testing is qualitative yet subjective as the testing process and observed results can vary by individual.</li> <li>- This testing method is best used for comparative purposes – interpretation of results is subjective.</li> <li>- Variables that influence the testing results:             <ul style="list-style-type: none"> <li>• Coating film thickness</li> <li>• Degree of film cure – cross-link density</li> <li>• Coating film quality/homogeneity – consistency of the film</li> <li>• Coating film defects – voids, breaks, pinholes, ruptures</li> <li>• Coating formulation – intended characteristics/attributes</li> <li>• Anything that is beneath the coating film – ink, substrate, fountain solution, etc.</li> </ul> </li> </ul>
<b>Test Procedure</b>	<ol style="list-style-type: none"> <li>1) Obtain a clean and dry coated sample and determine the area to be tested.</li> <li>2) Determine the number of double-rubs (one back-forth motion) to conduct during the initial test – if there is no existing quality specification for testing, consult INXCAC with the coating product number to be tested for a recommendation.</li> <li>3) Wearing PPE, dip the end of the cotton swab into the MEK solution and immediately rub the coating surface using a firm stroke in a back-forth (one double-rub) motion at a consistent pace for a length of 3” for the pre-determined number of double-rubs – determine a consistent method of conducting the test that is repeatable for each test.</li> <li>4) Examine the coating film for the effects of the testing:             <ul style="list-style-type: none"> <li>□ If the coating film has been removed down to the substrate, re-conduct the test in a new area of the coated sample using a lower number of double-rubs.</li> <li>□ If the coating film has not been removed down to the substrate, re-conduct the test in a new area of the coated sample using a higher number of double-rubs.</li> </ul> </li> <li>5) Repeat the testing process until the number of double-rubs just removes the coating film down to the substrate surface – this is considered the MEK resistance of the coated sample.</li> </ol> <ul style="list-style-type: none"> <li>- If there is an existing quality specification for a prescribed number of rubs, conduct the test using the prescribed number of rubs and visually assess the condition of the coating film and compare to existing pass/fail standards.</li> </ul>