Fragility Improvement COC Film
(FX Film, NC Hard Coating)

FX Film

- **Features**
  
  The new F film (FX film) improves fragility which is critical problem of conventional F film. FX film will not break in the process or die cutting. Its basic properties are as same as conventional F film.

- **Basic Properties (Equivalent to Conventional F Film)**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat-resistance (Tg)</td>
<td>180°C</td>
</tr>
<tr>
<td>Transmittance</td>
<td>≥ 91%</td>
</tr>
<tr>
<td>Haze</td>
<td>≤ 1.0</td>
</tr>
<tr>
<td>Retardation</td>
<td>5nm</td>
</tr>
</tbody>
</table>

- **Applications**
  
  - Substrate for ITO film
  - Substrate for barrier film
  - Substrate for flexible display

NC Hard Coating

- **Features**
  
  The film becomes more flexible with NC hard coating. NC hard coating can be applied to both FX film and conventional F film.

- **Die Cutting Test**
  
  Test by punch for office. (punch hole: 6mmΦ)

- **Flexibility**
  
  (The data below are typical values, not to be construed as specifications)

<table>
<thead>
<tr>
<th>Construction</th>
<th>F film</th>
<th>FX film</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIT Test</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>Tear propagation strength</td>
<td>MD (mN)</td>
<td>110</td>
</tr>
</tbody>
</table>

- **MIT Folding Strength Test (JIS P8115-JIS C5016)**
  Condition: 250g load, bending speed 90cpm, bending angle 90°
  Specimen will be fixed on the clamp, repeat bending at certain speed. Recorded the times of bending when specimen brakes.

- **Tear Propagating Strength (JIS K7128)**
  
  Make notches on the edges of the film and tear both notches on certain load, record the number of resistance. The more larger the number is, the more difficult to tear.

Applications and Supply Form

- **Large Size and Thinner Film are Available**
  
  - Various kinds of wet & dry coating … Hard coating, index matching layer can be applied.
  - ITO sputtering … ITO film is available
  - Control retardation … Retardation film by film extension is available (ex: λ/4 film)

- **Supply Form**
  
  - Film thickness: 80μm, 100μm
  - Roll width: Max. 1,350mm width, 2,000m length

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