UHMW-PE (Ultra-high-molecular-weight polyethylene) film
No. 440

UHMW-PE (Ultra-high-molecular-weight polyethylene) adhesive tape
No. 443/4430

Outline

Nitto Denko NO. 443 and NO. 4430 are pressure-sensitive adhesive tapes with a release liner that employs an ultrahigh-molecular-weight polyethylene film base (NO. 440). These tapes offer extremely high impact resistance, wear resistance and self-lubrication compared with adhesive tapes using other plastic films.

Construction

Fig. 1
Features

- Extremely high impact resistance: particularly excellent among plastics.
- Excellent wear resistance.
- Excellent self-lubricating properties.
- Chemical resistance is stable, apart from some strong concentrated inorganic acids and aromatic solvents.
- Excellent non-water absorbing and non-hygroscopic properties.
- NO.4430 has excellent adhesion between the base and adhesive.

Applications

- For wrapping guide rails and sliding surfaces such as bin fillers, label applicators and vending machines.
- For wrapping conveyor guide covers and table surfaces on all kinds of conveying equipment.
- For wrapping forming mandrels in film/paper packaging machines.
- For washer linings.
- For lining all types of hoppers and chutes.
- For use as a sliding material for sliding surfaces of household electrical appliances and automated machines.
- For lining of sliding surfaces in copy machines.
- For lining of sliding surfaces in textile machines.
- For lining of sliding surfaces in book binding machines.
- For lining of sliding surfaces in printing machines.

General Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>NO.440</th>
<th>NO.443</th>
<th>NO.4430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base material thickness</td>
<td>mm</td>
<td>0.5</td>
<td>0.5</td>
<td>0.13</td>
</tr>
<tr>
<td>Adhesive thickness</td>
<td>mm</td>
<td></td>
<td></td>
<td>0.17</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>Mpa</td>
<td>50.0</td>
<td>44.0</td>
<td>55.3</td>
</tr>
<tr>
<td>Elongation</td>
<td>%</td>
<td>430</td>
<td>410</td>
<td>400</td>
</tr>
<tr>
<td>Peeling strength (stainless steel)</td>
<td>N/20mm</td>
<td></td>
<td></td>
<td>17.1</td>
</tr>
<tr>
<td>Surface resistance</td>
<td>Ω</td>
<td>10^{16}</td>
<td>10^8</td>
<td>10^{16}</td>
</tr>
</tbody>
</table>

Notes: This data represents examples of measured values, and not guaranteed values. They do not guarantee compatibility with the applications described in these documents. Please confirm compatibility with your application prior to use. We retain all rights, including copyrights, for the contents of these documents. Copying, reprinting and use for purposes other than originally intended are strictly prohibited without our prior expressed permission. Contact details are provided at the end of this document. Please do not hesitate to contact us for any inquiry.
Table 2

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Base material thickness (mm)</th>
<th>Width (mm)</th>
<th>Length (m)</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.440</td>
<td>0.1, 0.13, 0.2, 0.25, 0.3, 0.4, 0.5</td>
<td>10~350</td>
<td>10, 30, 50</td>
<td>White/Black</td>
</tr>
<tr>
<td></td>
<td>0.8, 1.0, 1.5</td>
<td></td>
<td>10, 30</td>
<td></td>
</tr>
<tr>
<td>No.443</td>
<td>0.1, 0.13, 0.2, 0.25, 0.3</td>
<td>10~350</td>
<td>10, 30, 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.4, 0.5</td>
<td></td>
<td>10, 30</td>
<td></td>
</tr>
<tr>
<td>No.4430</td>
<td>0.13, 0.2, 0.25</td>
<td>10~350</td>
<td>10, 30, 50</td>
<td></td>
</tr>
</tbody>
</table>

*The above values are sample observed values, not the guaranteed performance.

Friction properties of UHMW-PE (No.440)

![Friction properties of UHMW-PE(No.440)](image)

Sample: UMW-PE (No.440)
Tester: Coefficient of skin friction meter (Bowden-Leben)
Test condition:
- Slide speed: 10mm/s
- Surface condition of material: Steel S45C (Surface finishing 3S)
Comparison of friction degree between ultrahigh molecular weight polyethylene (UHMW-PE) and other resistance. Friction decreasing ratio of other resistance were shown as 1 value degree of UHMW-PE.