Get a Grip.
How to select the right adhesive

Avery Dennison
Labels and Packaging Materials

September 2019
Get a Grip. How to select the right adhesive

**Presenters**

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Avery Dennison — Adhesive innovators since 1935
Global Coverage

7 R+D Centers and 400+ scientists:

- Netherlands
- Switzerland
- United States of America (2)
- Brazil
- China
- India
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Unique Technological Capabilities

<table>
<thead>
<tr>
<th>Adhesive Coating Technology</th>
<th>Emulsion</th>
<th>Hotmelt</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesive Chemical Composition</td>
<td>Acrylic</td>
<td>Rubber</td>
<td>UV Acrylic</td>
</tr>
</tbody>
</table>

The three coating technologies enable us to engineer adhesives with a wide range of functionality within each adhesive chemical composition variation.

160+ adhesives in Europe
Permanent, removable and many more enhanced functionalities
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Adhesive Engineering

Adhesive portfolio for every market and application with ability to customize to your needs.
### Adhesive Comparison (Directional)

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#### Emulsion Acrylic | Hotmelt UV-Acrylic | Hotmelt Rubber | Solvent Acrylic | Solvent Rubber
---|---|---|---|---
* | ** | *** | ** | ***
* | ** | *** | ** | ***
*** | ** | * | ** | *
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* | ** | * | *** | *

**Excellent tack and adhesion:**

**Adhesion to a wide range of surfaces:**

**Conversion (eg. die cutting, bleed):**

**Excellent low temperature performance:**

**Chemical resistance:**

**Food and other approvals:**

**Cost:**

**Reclosure:**

Few adhesive examples:

- S692N
- S7000
- S2000NG
- R3200N
- S3100
- S2045N
- C2075N
- UVR145
- MR980R
- S517N
- R100
- S451
- S277

*** Best performance
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Trends and Adhesive Innovations

Sustainability

CleanFlake™ SR3011
Enabling recycling of PET containers

ClearCut™ S7000
Enabling use of thinner constructions

Functional Packaging

R100
Clean removability

MR980R
High solvent resistant reclosure

Legislation

S799P Seal Range
Complying with FMD 2011/62/EU

S692N
Complying with Regulation (EU) No. 10/2011
Adhesive Selection Criteria
Choosing the Right Adhesive

Application
- Paper vs Film
- Specifics of application segment eg, wash-off requirements

Surface to be labelled
- Polar
- Apolar
- Rough
- Extremely difficult

Temperature and other conditions
- Minimum application
- Service temperature
- UV light exposure, etc.
- Compliance

Adhesive requirements
- Peel and tack
- Sound and smoothness (reclosure)
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Surface to be Labelled

- **Easy**
  - **Smooth**
    - Polar
      GLOSS (glass, PET, metal, stainless steel)
    - Apolar
      GLOSS plastics (PP, PE)
  - **Slightly rough**
    - Polar
      MATT (glass, metal, stainless steel, PET)
    - Apolar
      MATT plastics (PVC, crates, HDPE, PP)
  - **Rough**
    - Coated cards, non-silicone varnished
    - Uncoated cards, textile, matt varnished, cardboard
    - Planed wood, fiberboard, chemical drum (PE)
  - **Heavy rough or contaminated**
    - Tyres, wood, carpets, concrete, stone, pallets
  - **Extremely difficult**
    - Silicone rubber, hot metal, airbags

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Surface to be Labelled — Polarity

Understanding the surface to be labeled is critical in selection of an adhesive

Images (A & B) ⇒ polar surface or high Surface Energy (HSE)

Images (C & D) ⇒ apolar surface or Low Surface Energy (LSE)

Source: Surface-Engineered Inorganic Nanoporous Membranes for Vapor and Pervaporative Separations of Water–Ethanol Mixtures — Scientific; Scientific Figure on ResearchGate
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**Temperature**

**Minimum application**
temperature: lowest temperature at which the label is applied to the substrate.

**Service temperature**
temperature range that the label will be exposed to over its expected lifetime.

**Labelexpo 2019: Cold Chain C2050P**
- application temperature down to -50°C
- service temperature down to -196°C
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Application Temperature

Every adhesive has its own optimum application temperature window.
Heritage

- 85 years of adhesive expertise
- We design and produce our own adhesives globally
- Full spectrum of adhesive technologies:
  - Emulsion
  - Hotmelt
  - Solvent
- Technical Sales Support (TSS) in each region to advise on adhesive to use.

Check out our Adhesive webpage for latest news
Connect with us to ‘get a grip’ on your adhesive challenge.
Thank You