POLYVEST® HT

Hydroxyl-terminated liquid polybutadiene

General Description

POLYVEST® HT is a stereospecific, low viscous and hydroxyl-terminated liquid polybutadiene with a high content of double bonds having the following composition:

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\[ \text{HO} \quad \text{HO} \quad \text{HO} \]
\[ [\text{1,2-vinyl (x)}] \quad [\text{1,4-trans (y)}] \quad [\text{1,4-cis (z)}] \]

- 1,2-vinyl (x) approx. 22 %
- 1,4-trans (y) approx. 58 %
- 1,4-cis (z) approx. 20 %
```

Specification

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity at 30°C</td>
<td>4,000 – 5,500</td>
<td>mPa s</td>
<td>DIN EN ISO 3219</td>
</tr>
<tr>
<td>Hydroxyl Number</td>
<td>44 – 51</td>
<td>mg KOH/g</td>
<td>DIN EN ISO 4629-2</td>
</tr>
</tbody>
</table>

Typical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean molar mass (Mn)</td>
<td>approx. 2,900</td>
<td>g/mol</td>
<td>GPC* (polybutadiene Standard)</td>
</tr>
<tr>
<td>Mean OH functionality</td>
<td>approx. 2.4</td>
<td>g/cm³</td>
<td>calculated via Mn and hydroxyl number</td>
</tr>
<tr>
<td>Density at 20°C</td>
<td>0.90 – 0.92</td>
<td>g/cm³</td>
<td>DIN ISO 2811-1</td>
</tr>
<tr>
<td>Iodine Number</td>
<td>420 – 440</td>
<td>g Iodine/100 g</td>
<td>DIN 53 241</td>
</tr>
<tr>
<td>Gardner Color</td>
<td>&lt; 1</td>
<td></td>
<td>DIN EN ISO 4630-2</td>
</tr>
<tr>
<td>Flash Point</td>
<td>approx. 215</td>
<td>°C</td>
<td>DIN EN ISO 2719</td>
</tr>
<tr>
<td>Ignition Temperature</td>
<td>approx. 375</td>
<td>°C</td>
<td>DIN 51 794</td>
</tr>
<tr>
<td>Pour Point</td>
<td>approx. -18</td>
<td>°C</td>
<td>DIN ISO 3016</td>
</tr>
<tr>
<td>Glass Transition Temperature (Tg)</td>
<td>approx. -80</td>
<td>°C</td>
<td>DIN EN ISO 11 357-1</td>
</tr>
</tbody>
</table>

*GPC: gel permeation chromatography
General Use and Applications

Due to its unsaturated polymer backbone and the terminal hydroxyl functionalities, the apolar and hydrophobic hydrocarbon resin POLYVEST® HT is a highly reactive binder and it provides versatile opportunities for precise chemical modifications and reactions. POLYVEST® HT exhibits the following features:

- high chemical resistance towards acids and bases
- excellent water resistance
- excellent electrical insulation properties
- high cold resistance by keeping good flexibility at low temperatures
- good solubility in aliphatics, aromatics and ethers
- low moisture and gas permeability
- good adhesion to various substrates

In this form POLYVEST® HT is used in various fields of application such as:

- adhesives and sealants
- insulated glass sealants
- waterproofing membranes and coatings
- gap fillers and expansion joints
- electrical insulations and potting compounds
- binder for rubber based sealants and recycled rubber compounds
- polymer modification

We are pleased to send guide formulations

Supply Form

Viscous liquid

Packaging and Transport

- steel drums (content 180 kg); minimum order quantity 4 drums on pallet
- IBC (content 850 kg)
- delivery in road tankers

Storage

POLYVEST® HT is stable for at least 1 year with exclusion from air, light and moisture at storage temperatures below 25 °C.
Safety and Handling

POLYVEST® HT is supplied under a blanket of inert gas (nitrogen). The contact with air oxygen should be avoided as possible. Opened containers should be blanketed with inert gas again and closed tightly.

We are pleased to send our current Material Safety Data Sheet.

Export Regulations

POLYVEST® HT is subject to export control regulations. For exportation of this product, an export licence by German Export Control Authorities (BAFA) may be mandatory.

Replaces leaflet 43.13.864/ 09.14 and all former issues Marl, March 2016