VISCOWAX® 453 – high quality oxidised ethylene vinyl-acetate copolymer wax
It contains several polar functional groups and is emulsifiable in water.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Reference Value</th>
<th>Units</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid Value</td>
<td>15-18</td>
<td>mg KOH/g</td>
<td>DGF M-IV 2</td>
</tr>
<tr>
<td>Viscosity @ 140 °C *</td>
<td>150-250</td>
<td>mm²/s</td>
<td>DGF M-III 8</td>
</tr>
<tr>
<td>Drop Point *</td>
<td>90-100</td>
<td>°C</td>
<td>DGF M-III 3</td>
</tr>
<tr>
<td>Solidification Point</td>
<td>83-94</td>
<td>°C</td>
<td>DGF M-III 4a</td>
</tr>
<tr>
<td>Needle Penetration</td>
<td>≤ 10</td>
<td>10⁻¹ mm</td>
<td>DGF M-III 9b</td>
</tr>
<tr>
<td>Density</td>
<td>0.94-0.96</td>
<td>g/cm³</td>
<td>DIN EN ISO 1183, C</td>
</tr>
<tr>
<td>Molecular weight (Mn)</td>
<td>1500</td>
<td>g/mol</td>
<td>GPC</td>
</tr>
<tr>
<td>Saponification value</td>
<td>&gt; 80</td>
<td>mg KOH/g</td>
<td>DGF M-IV 2</td>
</tr>
<tr>
<td>Type of delivery</td>
<td>Fine grain</td>
<td>-</td>
<td>Visual</td>
</tr>
<tr>
<td>Appearance</td>
<td>Off white</td>
<td>-</td>
<td>Visual</td>
</tr>
</tbody>
</table>

* general supply specification
DGF: Test methods of the Deutsche Gesellschaft für Fettwissenschaft e.V. Münster i.W.

VISCOWAX® 453 can be used in many different applications. Please contact us to get more information about the special properties of our product and the potential use / advantage in your application.

**Main scope of application and effect:**

- Plastic processing
  - Dispersing agent for polar Masterbatches
- HMA, Hotmelts
  - Special applications
- Flexible Packaging
  - Heat seal dispersions
- Floor polishes
  - Antislip additive
- Leather processing
  - Additive for synthetic resin dispersion used for finishing, fulling and smoothing of upper leather
Status under Food Legislation

VISCOWAX® 453 has not been licensed for the manufacture of consumer goods for the contact with food.

Safety and Environment

VISCOWAX® 453 has not been classified as hazardous materials in accordance with the Regulation (EC) No. 1272/2008 (CLP/GHS) and therefore it does not require marking.

It is insoluble in water and has no harmful effect on fish and bacteria. Disposal of the product is to be carried out in accordance with the local regulations.

Please refer to our Safety Data Sheet for further safety relevant information.

Form of Delivery, Packaging and Storage

VISCOWAX® 453 is shipped as dust-free powder either in multilayer paper bags or PE bags of 25 kg net. The product is palletised (preferably 750 kg net) on CP2-pallets (1200mm x 800mm) which are shrink-wrapped.

Big bags of different sizes up to 1000kg net palletised on CP3-pallets (1140mm x 1140mm) are also available.

The product shall be stored in its original packaging at room temperature in a dry place. It must not be stored together with amines. Avoid direct sun radiation and water contact.

Please do not hesitate to contact us for further details.

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Leuna, March 2015

The general points listed correspond to our current knowledge and have been elaborated to the best of our belief and under consideration of professional care. Herewith, we do not guarantee definite properties nor suitability for a particular application. It is the customer's duty to particularly check suitability of the product for the use intended.