**Isotridecanol N**

Starting material for the production of plasticizers, lubricants, and auxiliaries in the chemical and allied industries. Low-volatility solvent for oils, waxes, fats and dyes. Defoamer in the textile, paper and coating industries.

**Chemical nature**

Mixture of tridecyl alcohol isomers, isotridecanol

- **Molecular formula**: C_{13}H_{27}OH
- **Molar mass**: 200.4 g/mol
- **CAS number**: 27458-92-0
- **EC number**: 248-469-2

**Delivery specification**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Unit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fraction of – tridecanol isomers</td>
<td>99.0 min.</td>
<td>% by area</td>
<td>DIN 55685</td>
</tr>
<tr>
<td>– water</td>
<td>0.1 max.</td>
<td>% by weight</td>
<td>DIN 51777, Part 1 E 203</td>
</tr>
<tr>
<td>Platinum-cobalt color</td>
<td>10 max.</td>
<td></td>
<td>DIN EN ISO 6271-2/ D 5386</td>
</tr>
<tr>
<td>Acid value</td>
<td>0.3 max.</td>
<td>mg KOH/g</td>
<td>DIN EN ISO 2114/ D 1045</td>
</tr>
</tbody>
</table>

**Properties**

Isotridecanol N is a clear, high-boiling, oily liquid with a faint, characteristic odor. It is miscible with most common organic solvents, but is practically insoluble in water.

Isotridecanol N is a mixture of isomeric alcohols with a high molecular mass and reacts accordingly. For instance, the most significant application in practise is the formation of the corresponding esters in reactions with acids.
Physical data

The following physical data were measured in the BASF SE laboratories. They do not represent any legally-binding guarantee of properties for our sales product.

- **Boiling range at 1013 hPa**
  
  **251 – 263 °C**
  
  (96 % by vol.; 1 – 97 ml) (DIN 51751; ASTM D 1078)

- **Melting/crystallizing point**
  
  **< -40 °C** (DIN 51007 BASF-modified)

- **Vapor pressure**

<p>|</p>
<table>
<thead>
<tr>
<th>T [°C]</th>
<th>p [hPa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.022</td>
</tr>
<tr>
<td>60</td>
<td>0.061</td>
</tr>
<tr>
<td>70</td>
<td>0.155</td>
</tr>
<tr>
<td>80</td>
<td>0.361</td>
</tr>
<tr>
<td>90</td>
<td>0.78</td>
</tr>
<tr>
<td>100</td>
<td>1.6</td>
</tr>
<tr>
<td>120</td>
<td>5.4</td>
</tr>
<tr>
<td>140</td>
<td>15.6</td>
</tr>
<tr>
<td>160</td>
<td>38.9</td>
</tr>
<tr>
<td>180</td>
<td>86.1</td>
</tr>
<tr>
<td>200</td>
<td>173</td>
</tr>
<tr>
<td>220</td>
<td>322</td>
</tr>
<tr>
<td>240</td>
<td>561</td>
</tr>
<tr>
<td>260</td>
<td>921</td>
</tr>
</tbody>
</table>

  Antoine constants for \( \ln P = A + B/(C + T) \)

  - **A** = 9.1706
  - **B** = -3630.02
  - **C** = 132.33

  (The Antoine constants were determined from vapor pressure data measured in the temperature range of 93 °C to 263 °C by a dynamic method in a nitrogen atmosphere. The values in the table were calculated using the Antoine equation. The data serve only as a rough guide.)

- **Density at 20 °C**
  
  **0.8436 g/cm³**
  
  DIN 53217

- **Dyn. viscosity at 20 °C**
  
  **36.2 mPa·s**
  
  DIN 51562

- **Refractive index at 20 °C**
  
  **1.4480 – 1.4485**
  
  (DIN EN 14370)

- **Surface tension at 20 °C**
  
  **28 – 29 mN/m**
  
  (DIN EN 14370)

Applications

The main application for Isotridecanol N is as a starting material for the production of plasticizers for PVC.

Its use as a solvent is very restricted.

Low proportions of Isotridecanol N suppress foaming in the aqueous systems encountered in the textile, paper or coatings industry. The product may also serve as a solubilizer or emulsifying agent for oils and waxes.
Storage & Handling

Isotridecanol N can be stored in tanks and drums constructed from normal carbon steel, e.g. A 283 grade. If severe demands are imposed on the product quality, we recommend that it be stored in tanks constructed from stainless steel, e.g. AISI TP 316 Ti (German steel No. 1.4541), or aluminium (AlMg₃).

It is recommended that steps be taken to ensure the exclusion of atmospheric moisture, e.g. by storing under a blanket of dry nitrogen, as otherwise the product quality may deteriorate, e.g. the water fraction may rise, or the Isotridecanol N may be discoloured by rust in normal steel tanks.

Drums containing the product should be kept tightly closed in a well-ventilated place.

Isotridecanol N can be stored for one year at temperatures below 40 °C, if moisture is excluded.

Pumps:
Cast-steel centrifugal pumps with a simple slip-ring seal are suitable.

Flange seals:
An example of a suitable material for seals is chemical-resistant Polytetrafluoroethylene (PTFE). Other plastics should be checked for suitability before they are taken into use.

Safety

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Due attention should also be given to the precautions necessary for handling chemicals.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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