Technical Data Sheet

Product name: AO-1520
Product Form: Liquid, pale yellow
Chemical name: 4,6-bis(octylthiomethyl)-o-cresol
Synonym: 4,6-bis(octylthiomethyl)-6-methylphenol
CAS No: 110553-27-0
EC No: 402-860-6
Chemical formula: C_{25}H_{44}O_{2}S_{2}
Molecular weight: 424.7
Chemical Structure:

\[
\begin{align*}
\text{CH}_3 & \quad \text{CH}_2 \quad \text{S} \quad \text{CH}_2 \\
\text{CH}_2 & \quad \text{S} \quad \text{CH}_3
\end{align*}
\]

Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Oily clear liquid</td>
</tr>
<tr>
<td>Assay (%)</td>
<td>96.0 min.</td>
</tr>
<tr>
<td>Clarity of solution</td>
<td>Clear solution</td>
</tr>
<tr>
<td>Transmittance: 425 nm (%)</td>
<td>98 min.</td>
</tr>
<tr>
<td>Volatile (%)</td>
<td>0.1 max.</td>
</tr>
</tbody>
</table>

Characterization

AO-1520 is a multifunctional liquid phenolic antioxidant for organic substrates such as elastomers, plastics, adhesives, sealants, oils and lubricants. It effectively protects the substrate against thermo-oxidative degradation during processing and long-term heat aging. AO-1520 is nonstaining, non-discoloring, low in volatility, and stable to light and heat.

AO-1520 is specially recommended for emulsion and solution polymerized elastomers, such as BR, SBR, NBR, SBS and others.

Application

AO-1520 is an effective thermo-oxidative stabilizer in a wide range of solution polymerized, emulsion polymerized and thermoplastic elastomers including: BR, SBR, NBR, IR, SBS, and SIS as well as natural rubber. The antioxidant is effective both as a
raw elastomer and compound stabilizer. It is also effective in various adhesive and sealant applications and latex applications. AO-1520 is not recommended for odor sensitive hot melt adhesives or their raw materials.

Features
AO-1520 is unique in its ability to provide both processing and long-term heat aging stability used alone, at low levels and without costabilizers. Where necessary AO-1520 can be used with other additives such as secondary antioxidants, benzofuranone, light stabilizers and other functional stabilizers. The effectiveness of these products in a wide range of elastomers coupled with extensive food contact approvals makes AO-1520 an excellent choice where consolidation of antioxidant systems is desirable. In addition, the liquid, low viscosity nature of AO-1520 makes bulk delivery and storage very convenient.

Guidelines for uses
The normal usage levels for AO-1520 range between 0.05 and 0.3%. For special applications and, depending on substrate, manufacturing process and performance requirements, the optimal concentration may be as high as 1.0% or even more.

Physical Properties
- Melting Range: ~ 14 °C
- Flash point: > 200 °C
- Density (20 °C): 0.98 g/cm³
- Vapor Pressure (25 °C): 2 E-5 Pa
- Dynamic Viscosity (20 °C): 85 - 90 mPa.s
- Solubility (20 °C): % w/w
  - Water: < 0.01
  - Acetone: > 50
  - Chloroforme: > 50
  - Ethanol: > 50
  - Ethyl acetate: > 50
  - n-Hexane: > 50
  - Methanol: > 50
  - Methylene chloride: > 50
  - Toluene: > 50

Handling and Safety
In accordance with good industrial practice, handle with care and prevent contamination of the environment.
For more detailed information please refer to the material safety data sheet.

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