Product Data: Antiscorching Agent PVI (CTP)

Chemical Name: N-(Cyclohexylthio)phthalimide CAS Reg. No.: 17796-82-6 Molecular weight: 261.33

1. FUNCTION

PVI is a pre-vulcanization inhibitor which enables processing safety to be controlled in a predictable manner in sulfur cureable compounds.

2. MAJOR APPLICATIONS AND PROPERTIES

- PVI prevulcanization inhibitor delays the onset of vulcanization with little or no influence on curing characteristics or vulcanizate properties.
- It is most effective with sulfenamide accelerators but may also be used with thiazoles, guanidines, thiurams and dithiocarbamates.
- The activity of PVI is dependent upon the polymer used in the following decreasing order of activity: NR > NBR > SBR > EPDM > IIR > CR.
- PVI is particularly useful for improving the efficiency of plant processing operations such as mixing, calendering, extruding and molding. Additionally it provides improved green stock storage stability and can be useful in single stage mixing and in recovery of partially scorched compounds.
- PVI is non-staining but may give slight discoloration in light colored or white articles.
- PVI is regulated for use in articles in contact with food as specified under BgVV XXI, Category 4.
- PVI is not regulated for use in FDA food contact applications.

3. COMPOUNDING INFORMATION

In many compounds PVI gives a linear response between Mooney scorch and dosage level. It is therefore possible to adjust processing safety of a compound by changing the dosage of PVI.

PVI is normally used at levels from 0.1 to 0.4 phr. Higher levels may give a slightly reduced cured modulus.

If necessary the modulus loss may be adjusted with additional sulfur and up to 40 % of the amount of PVI is recommended.

The reaction of PVI with sulfur and accelerator generates phthalimide as a byproduct. Since phthalimide is not very soluble in rubber a bloom may appear on the surfaces of some compounds. Bloom does not generally occur in compounds containing less than 0.6 phr of PVI.
4. HANDLING PRECAUTIONS
For detailed information on toxicological properties and handling precautions please refer to the current Safety Data Sheet.

5. STORAGE RECOMMENDATIONS
Store PVI in single stacked pallets in a cool, dry, well ventilated area, avoiding exposure of the packaged product to direct sunlight. Double stacking of palletized material and/or exceeding 35°C can result in unusual compaction of product.

6. PRODUCT INFORMATION

<table>
<thead>
<tr>
<th>Santogard PVI Product form</th>
<th>PDR-D dust suppressed powder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRODUCT SPECIFICATIONS</strong></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>white powder</td>
</tr>
<tr>
<td>Assay (titration) (%) ≥</td>
<td>97</td>
</tr>
<tr>
<td>Melting point, initial (°C)</td>
<td>89-94</td>
</tr>
<tr>
<td>Heat loss (%) ≤</td>
<td>0.4</td>
</tr>
<tr>
<td>Ash (%) ≤</td>
<td>0.1</td>
</tr>
<tr>
<td>Insoluble in toluene (%) ≤</td>
<td>0.5</td>
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</tbody>
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7. Package: Three as one paper and poly bags
8. Net Weight: 20kg/bag