Terachem® 53-2384 Aluminum Oxide Nano-Dispersion
for Fast-Cure Polyaspartics Based on Teraspartic® 230

Additive for Improving Mar and Scratch Resistance

TYPICAL CHARACTERISTICS

Appearance ................................................................. Grayish Dispersion
Weight Per Gallon, Lbs ................................................... 13.1 ± 0.1
Flash Point,°C (P-M) ....................................................... 105
Equivalent Weight ......................................................... 500
Non-Volatile by Weight, % .............................................. ≥ 99.0

COMPATIBILITY

Terachem® 53-2384 is a proprietary formulated dispersion of nano-aluminum oxide that improves mar and scratch resistance of polyaspartic coatings. Terachem® 53-2384 is blended into the polyaspartic amine component, Part A. The compatibility of Terachem® 53-2384 with the various ingredients in the formulation must be evaluated and tested before use.

APPLICATIONS

Terachem® 53-2384 is specifically designed for use in 2K polyaspartic coatings. When incorporated into a polyaspartic coating formulation, Terachem® 53-2384 acts as the delivery system for nano-aluminum oxide. Because of its uniqueness, Terachem® 53-2384 offers the formulator the opportunity to improve resistance to mar and scratch at very high loadings with minimal effect on gloss, clarity, and shade.

Even higher levels of Terachem® 53-2384 have been achieved – in some cases up to 60% based on total resin solids – in primers, base coats, and patching compounds where slight discoloration or where good clarity is not critical. The coatings formulator has a wide range of choices in the selection of formula ingredients. Factors such as loading level, film thickness, gloss, and the type of wear or mar resistance expected in the system must be considered.

Terachem® 53-2384, which is supplied at a 60% loading of alumina, can be used by itself or incorporated into properly formulated polyaspartic coatings systems for a variety of fast-cure applications, including uses on wood, concrete, composites, and metal.

Levels of 20% by weight for Terachem® 53-2384, based on total resin solids, have been achieved with minimal effect on viscosity. The effect of Terachem® 53-2384 on viscosity, even at levels ranging from 20% to 60%, is within a generally accepted range of use in systems such as self-leveling concrete floor coatings and patching compounds.
LOADING VS. VISCOSITY
NANO-ALUMINUM OXIDE IN TERASPARTIC® 230

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>VISCOSITY</th>
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</thead>
<tbody>
<tr>
<td>TERASPARTIC 230 (AS IS)</td>
<td>100 cps</td>
</tr>
<tr>
<td>20% LOADING NANO-ALUMINUM OXIDE</td>
<td>150 cps</td>
</tr>
<tr>
<td>40% LOADING NANO-ALUMINUM OXIDE</td>
<td>650 cps</td>
</tr>
<tr>
<td>60% LOADING NANO-ALUMINUM OXIDE</td>
<td>3700 cps</td>
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</tbody>
</table>

KEY FEATURES

Ready-to-use dispersion, effective at relatively high levels of use
Excellent performance for resistance to mar and scratch relative to film thickness
No significant effect on clarity, gloss or shade at up to 12% of the polyaspartic side
Can improve hardness and toughness
No effect on recoatability seen at relatively high levels of use

RECOMMENDED USE LEVELS

The formulator should determine by ladder studies the level of Terachem® 53-2384 that is most suitable and effective by thorough testing and evaluation, in your laboratory and later in field trials.

Pflaumer offers other products for formulating 2K coatings:

- Terachem® 53-Colorants – 37 Ready-to-use pigment dispersions for 2K polyurethanes and polyaspartics, including color packs for on-site use
- Teracure® Aliphatic Polyisocyanates
- Teraspartic® Polyaspartic Amines
- Terachem® 53-2242 – Anti-sag additive for 2K polyaspartics
- Terachem® 53-2371 – Aluminum Oxide Nano-Dispersion for 2K polyaspartics
- Tallicin® 1500 – Flow and leveling modifier
- Tallicin® 3000 – Pot life extender for trimer-type isocyanates used in 2K polyurethanes
- Tallicin® 4000 – Bubble-release agent and flow/leveling modifier for high-solids polyurethanes
- Tallicin® 4040 – Deaerator, bubble-release, flow and leveling modifier for solvent-free polyaspartics and polyurethanes
- Tallicin® 4600 – Stabilized Tin Catalyst for Polyurethanes

SAFETY, STORAGE, AND HANDLING

Consult MSDS before use. Store Terachem® 53-2384 in tightly sealed containers. Prevent contact with moisture and excess humidity. Once opened, any remaining Terachem® 53-2384 in the container is best stored under dry nitrogen blanketing. Store, transfer, and handle under a nitrogen blanket. Replace damaged gaskets on drums or totes. Keep storage temperatures at 0°C - 40°C (32°F - 104°F).
Shelf life of Terachem® 53-2384 is 6 months from date product is shipped by Pflaumer and then maintained in original closed containers and stored in proper storage conditions at 25°C (75°F). If repackaging, use containers that will prevent moisture contamination.

**CONTAINER SIZES**

<table>
<thead>
<tr>
<th>Container Size</th>
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<th>Document No:</th>
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</thead>
<tbody>
<tr>
<td>5 Gallon Pail (55 Lb/25.5 Kg)</td>
<td>11/30/12</td>
<td>7860</td>
</tr>
<tr>
<td>55 Gallon Drum (650 Lb/306 Kg)</td>
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