**DESCRIPTION**

Tyzor® AA Series titanium acetylacetonates are yellow to red liquid titanium chelates with acetylacetonate as the chelating agent. Multiple grades are available with various percentages of active ingredient.

**APPLICATIONS**

**PRINTING INKS**

Tyzor® AA titanium acetylacetonates are excellent crosslinkers and adhesion promoters in solvent-based printing inks such as those based on nitrocellulose. They offer improved drying rates, increased resistance to solvents and heat, and superior adhesion to a variety of substrates.

**COATINGS**

Glass, metals, fillers and pigments can be treated with Tyzor® AA titanium acetylacetonates to increase surface hardness, promote adhesion, enhance resistance to scratches and corrosion, add coloring effects, improve heat and light reflection and add iridescence.

**REACTANTS**

Tyzor® AA titanium acetylacetonates are useful as binders and they also can be used as cross-linkers for –OH functional polymers and other binders in paints, as well as adhesion promoters.

**TiO2 PIGMENT AND FILMS**

Micro- or nano-scale TiO2 pigments can be formed from Tyzor® AA titanium acetylacetonates, which also can also be used to create polymeric TiO2 films on surfaces via pyrolytic or hydrolytic (e.g. sol-gel) processes.

**REACTION CATALYSTS**

Tyzor® AA titanium acetylacetonates can be used as catalysts for esterification, transesterification, condensation and addition reactions. Typical reaction products include (meth)acrylic esters, polyester, plasticizer, various esters and polyurethanes. Benefits include elimination of byproducts, increased yield, easier work-up, and low catalyst concentration.

**HOW TO USE**

Tyzor® AA Series titanium acetylacetonates are typically formulated with other ingredients in catalysis, crosslinking, paint or printing ink applications. They are often added last to prevent undesired pre-reactions within the system. They also may be applied as primers from dilute solution for adhesion-promotion or surface-modification applications.

Total or partial hydrolysis of Tyzor® AA titanium acetylacetonates in sol-gel applications, typically in combination with other metal alkoxides, produces metal oxide systems for use as binders or coatings.

Tyzor® AA titanium acetylacetonates react slowly with water to form corresponding alcohols and reactive titanium oxide hydrate or titanium dioxide. Stable hydroxylates can be obtained in the presence of acetic acid.
TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>Tyzor® AA</th>
<th>Tyzor® AA-65</th>
<th>Tyzor® AA-75</th>
<th>Tyzor® AA-105</th>
</tr>
</thead>
<tbody>
<tr>
<td>TiO₂ %</td>
<td>16.5</td>
<td>15</td>
<td>16.5</td>
<td>23</td>
</tr>
<tr>
<td>Active content, %</td>
<td>75</td>
<td>65</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
<td>Liquid</td>
<td>Liquid</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow to red</td>
<td>Yellow to red</td>
<td>Yellow to red</td>
<td>Yellow to red</td>
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<tr>
<td>Solvent</td>
<td>25% IPA</td>
<td>28% IPA</td>
<td>25% IPA</td>
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<tr>
<td></td>
<td>7% EtOH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.99</td>
<td>0.98</td>
<td>1.02</td>
<td>1.12</td>
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<tr>
<td>Viscosity, mPa</td>
<td>10</td>
<td>8</td>
<td>11</td>
<td>90</td>
</tr>
<tr>
<td>Pour point, °C (°F)</td>
<td>0 (32)</td>
<td>-70 (-94)</td>
<td>-5 (23)</td>
<td>-25 (-13)</td>
</tr>
</tbody>
</table>

Some products may crystallize at temperatures above their pour points. If crystallization occurs, products other than Tyzor® AA can be dissolved by warming and agitation.

Boiling point, °C (°F), solvent  
- Tyzor® AA: 82 (179.6)  
- Tyzor® AA-65: 78 (172.4)  
- Tyzor® AA-75: 82 (179.6)  
- Tyzor® AA-105: n/a  

Flash point, °C (°F):  
- Tyzor® AA: 12 (53.6)  
- Tyzor® AA-65: 14 (57.2)  
- Tyzor® AA-75: 12 (53.6)  
- Tyzor® AA-105: 50 (122)  

Solubility: Miscible in most organic solvents. Decomposes in water.

SAFETY AND HANDLING

Please refer to the current Material Safety Data Sheet for safety, handling and toxicity information.

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