DuPont™ Ti-Select™ TS-6200...

the first product in the Ti-Select™ family

• high initial gloss • excellent gloss retention • super durable • superior processibility

All in one premium pigment
**Product Description**

Building on a commitment to provide value to coatings manufacturers through new product innovations, DuPont Titanium Technologies is pleased to announce a new family of products. From the makers of Ti-Pure® comes Ti-Select™ titanium dioxide pigments that offer performance excellence for specific coatings applications. Ti-Select™ TS-6200 is a rutile pigment manufactured via DuPont’s chloride process. Designed specifically for the most demanding durability applications, Ti-Select™ TS-6200 offers excellent gloss retention coupled with unique dispersing capabilities.

Ti-Select™ TS-6200 is a fine dry powder with the following general properties.

**Table 1**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TiO₂, wt% min.</td>
<td>90</td>
</tr>
<tr>
<td>Alumina, wt%</td>
<td>3.6</td>
</tr>
<tr>
<td>Silica, wt%</td>
<td>3.3</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>4.0</td>
</tr>
<tr>
<td>Bulking Value, L/Kg (gal/lb)</td>
<td>0.25 (0.03)</td>
</tr>
<tr>
<td>Organic Treatment</td>
<td>Yes</td>
</tr>
<tr>
<td>Color CIE L*</td>
<td>99.4</td>
</tr>
<tr>
<td>pH</td>
<td>8</td>
</tr>
<tr>
<td>Carbon Black Undertone</td>
<td>13.0</td>
</tr>
</tbody>
</table>

Note: All values are typical unless otherwise specified.

**Suggestions for Use**

Ti-Select™ TS-6200 is a specialty application pigment combining high gloss retention, good initial gloss, high hiding power, minimal dispersant demand and excellent dispersion. Recommended use is in:

- automotive coatings
- coil coatings
- durable industrial coatings
- fluorinated polymer coatings

**Excellent Gloss Retention**

Gloss is a strong selling feature in many super durable coatings applications, and retention of gloss over the life of a product is of high importance to consumers. Gloss retention is controlled by a number of factors, including resin chemistry and the inherent durability of the TiO₂ pigment employed in the coatings.

Accelerated weathering results confirm that Ti-Select™ TS-6200 has excellent gloss retention, as expected for a grade designed specifically for demanding, high durability applications.

**Figure 1.** Xenon Arc Exposure Gloss—Retention versus Grade after 1750 hr 2K Refinish Formulation

<table>
<thead>
<tr>
<th>Pigment Grade</th>
<th>60° Gloss Retention, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS-6200</td>
<td>97.9</td>
</tr>
<tr>
<td>R-960</td>
<td>93.0</td>
</tr>
<tr>
<td>R-706</td>
<td>88.0</td>
</tr>
<tr>
<td>Comp</td>
<td>78.5</td>
</tr>
</tbody>
</table>

**Exceptional Durability via Silica Shell Technology**

Ti-Select™ TS-6200 couples an advanced silica coating technology with a proprietary surface treatment to give maximum resistance to photocatalytic degradation. This new technology represents a significant improvement over the traditional method of silica encapsulation found on most super durable TiO₂ pigments.

The quality of the silica layer can be demonstrated using the Acid Solubility Test, which measures the fraction of TiO₂ particles that are incompletely coated with silica. Such particles decrease the durability of the paint film.
**Superior Chalk Resistance**

Chalking and color fade are two common reasons for consumer dissatisfaction with durable coatings. Both are caused by the degradation of organic binder from the film surface, which leaves loosely attached TiO₂ particles on the coatings surface. This not only results in a “chalky” appearance to the coating, it also gives color fade because the exposed TiO₂ particles scatter light away from the film before it can interact with the colored pigments. Figure 3 shows that the superior durability of Ti-Select™ TS-6200 gives it the best chalk resistance of any TiO₂ pigment.

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**Unsurpassed Ease-of-Dispersion**

The unique surface chemistry of TS-6200 is tailor-made for easy dispersion—dispersion so easy that in some cases laborious, multi-step grinds can be reduced to a single, fast grind. Rapid dispersion results in greater rate, not only because dispersion times are decreased, but also because TiO₂ levels in the dispersion can be increased. Figure 4 shows the number of undispersed particles, measured on a Hegman gauge, as a function of grind intensity for a number of super durable TiO₂ pigments. When it comes to easy dispersion, Ti-Select™ TS-6200 is in a class of its own.
Low Dispersant Demand
The improved dispersibility of TS-6200 is also evident in its remarkably low dispersant demand. As seen in Figure 5, Ti-Select™ TS-6200 needs as little as one fourth the dispersant load of other super durable pigments. Lower dispersant requirements can lead to significant cost savings, and by removing dispersant from the paint, the coatings manufacturer has the formulating flexibility to replace dispersant with other key ingredients.

Figure 5. Viscosity versus Dispersant Demand 78% TiO₂ in Water (w/w)

Safety Precautions
- Titanium dioxide is classified as a nuisance dust. Follow all local regulations and DuPont recommendations for exposure limits as described in the Material Safety Data Sheet (MSDS). If the recommended exposure limits of TiO₂ are to be exceeded, NIOSH-approved air-purifying respirators with particulate filters should be used.
- As a matter of good industrial hygiene, gloves and safety glasses with side shields or better eye protection should be worn when handling TiO₂. For more details, refer to the MSDS.

First Aid
- If large amounts of TiO₂ are inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- In case of eye contact, immediately flush with water for at least 15 min. Call a physician.
- In case of skin contact, the compound is not likely to be hazardous, but cleaning the skin after use is advised.

Shipping Containers
Ti-Select™ TS-6200 is available in 25-kg paper bags and 1 tonne semibulk containers. Truckload shipments of the dry product will be available directly from DuPont. Less-than-truckload volumes are available through authorized DuPont distributors. Call your local sales office for the distributor nearest you.

Product Storage
The shelf life of DuPont™ Ti-Select™ TiO₂ is indefinite as long as the material is kept from direct contact with moisture.

Additional Information
For more details, please contact your sales representative or authorized DuPont Distributor. Information is also available on our website at www.titanium.dupont.com