# Industrial materials

## Titanium Dioxide

**Properties :** White powder, insoluble in water, soluble in hot and concentrated strong acid and alkali, having the good chemical stability; It has strong achromatic power, covering power, with excellent properties of pigment.

**Applications:** widely used in painting, printing oil, paper making, plastic, rubber, artificial fiber, welding electric, enamel, electric appliances and construction material etc.

| Products | Specification | | |
|---|---|---|---|
| | Items | Rutile Titanium Dioxide | Anatase Titanium Dioxide |
| Titanium Dioxide  | m/m $TiO_2$ content%≥ | 94 | 98 |
| | Tint reducing power European unit ≥ | 180 | 100 |
| | Whiteness % ≥ | 97 | - |
| | Dispersibility μm ≤ | 12 | - |
| | Oil absorptiong/100g ≤ | 20 | 26 |
| | 105Moisture % ≤ | 0,75 | - |
| | Specific resistance Ω.cm ≥ | 9000 | - |
| | Solution in water % ≤ | 0,3 | 0,5 |
| | Residue(45μm) ≤ | 0,01 | 0,1 |
| | PH value | 6.5-8.0 | 6.5-8.0 |
| | Volatile Matter(105D)≥ | - | 0,4 |

We always use sulfuric acid method for Titanium Dioxide Rutile.
We can also produce to use chloride method for Titanium Dioxide Rutile.

# Iron Oxide Black

**Properties:**
Black powder, addition compound of ferrous oxide and ferric oxide, with magnetism, high tinctorial strength and covering power, good resistance to light and atmosphere, good light-fastness, and no impermeability or oil residue. It is very stable in general organic solvents, not resistant to acid, soluble in hot strong acid. Good alkali resistance.

**Applications:**
It is applied for antirust paints, primers, watercolors and greasepaints for cultural and educational industries, for coloring for man-made marbles, cement floors and ground tiles as well as cathode plates of alkaline batteries, and for steel production of electronics and telecommunication industries, and steel fault detection in machine building.

| Products | Specification | |
|---|---|---|
| Iron Oxide Black  | Items | iron oxide black 780 |
| | Content≥% | 93 |
| | Moisture≤% | 1 |
| | Volatile (105°C)%≤ | 0,8 |
| | Water Soluble % (M/M) ≤ | 0,5 |
| | Ph Value | 08.05.2010 |
| | Oil Absorption % | 15-25 |
| | Tinting strength% | 95-105 |

# Iron Oxide Red

**Properties:**
Colored powder. Its quality is stable with fine decentralization, strong tinting strength.

**Applications:**
It is widely used for color in construction, coating, ink, abrasive, paper rubber & plastic.

**Specification**:

| Product | Type | Fe2O3 (%) | Oil absorption (ml/100g) | Res. on 325 mesh (%) | Water sol. Salts (%) | Moisture (%) | PH value | Tamped apparent density (g/cm3) | Particle shape | E compared with std. | Tinting strength (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron Oxide Red  | Y101 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.7-1.1 | Spherical | ≤1 | 95~105 |
| | 110 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.7-1.1 | Spherical | ≤1 | 95~105 |
| | 120 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.7-1.1 | Spherical | ≤1 | 95~105 |
| | 130 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.7-1.1 | Spherical | ≤1 | 95~105 |
| | 230 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.8-1.2 | Spherical | ≤1 | 95~105 |
| | 140 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.9-1.3 | Spherical | ≤1 | 95~105 |
| | 160 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 1.0~1.4 | Spherical | ≤1 | 95~105 |
| | 180 | ≥96 | 15~25 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 1.3-1.7 | Spherical | ≤1 | 95~105 |
| | 190 | ≥95 | 15~25 | ≤0.5 | ≤0.5 | ≤1.0 | 3~7 | 0.7-1.1 | Spherical | ≤1 | 95~105 |

# Iron Oxide Blue

**Properties:**
Dark blue and light blue powder, brightly-colored, with strong tinctorial strength, slightly-bad covering power and harder quality.

**Applications:**
Coloring for paints, inks, paintings, pigments, crayons, finishing varnished clothes, painted papers, colored plastics, as well as for building grounds and floor tiles.

| Products | Specification | |
|---|---|---|
| Iron Oxide Blue  | Item | Iron Oxide Blue |
| | Fe2O3/Fe3O4≥% | -- |
| | 105°C Moisture ≤% | 1.0 |
| | Water soluble salts ≤% | 0.5 |
| | Residue on 45um ≤% | 0.3 |
| | PH-value | 3-7 |
| | Oil absorption | 15-20 |
| | Tinting strength % | 95-105 |
| | Density approx / cm3 | 0.4-0.8 |

# Iron Oxide Brown

**Properties:**
Brown powder, with excellent pigment performance, high coloring and hiding power, good light-fastness and resistance and no water permeability or oil permeability, insoluble in water, alcohol, ether and soluble in hot acid. Colors differ in accordance with the techniques, yellow brown, red brown and black brown respectively.

**Applications:**
Coloring for paints, rubbers plastics, paintings, buildings, grounds and floor tiles.

**Specification**:

| Product Name | type | FE2O3 % | Oil Absorption g/ 100g | Res.on 325 mesh % | Water Sol.salts % | Moisture % | PH | tamped Apparent Density,G/CM 3 | Particle shape | E Compared | Tinting strength |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron oxide | 860 | ≥ 93 | 15-25 | ≤ 0.3 | ≤ 0.8 | ≤ 1.5 | 4-7 | 0.8-1.2 | irregular | ≤ 1 | 95-105 |
| Brown | 868 | ≥ 92 | 15-25 | ≤ 0.3 | ≤ 0.8 | ≤ 1.5 | 4-7 | 0.8-1.3 | irregular | ≤ 1 | 95-105 |

# Iron Oxide Yellow

**Properties:**
Bright yellow or brown yellow, with excellent pigment performance, high tinctorial strength and covering power, equal tinctorial strength as massicot, good resistance to light and atmosphere and foul gas, a specific gravity of about 4, particle diameter 0.3-2 micron, good light-fastness and strong alkali resistance. Soluble in hot strong acid, with high heat resistance, the loss of crystallization at temperatures above 150 °C, resolve into red ferric oxide pigment.

**Applications:**
It is widely used for color in construction, paint,coating, ink, abrasive, paper rubber & plastic.

**Specification:**

| Product | Type | Fe2O3 (%) | Oil absorption (ml/100g) | Res. on 325 mesh (%) | Water sol. Salts (%) | Moisture (%) | PH value | Tamped apparent density (g/cm3) | Particle shape | E compared with std. | Tinting strength (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Iron Oxide Yellow | 311 | ≥86 | 25~35 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.4-0.6 | Acicular | ≤1 | 95~105 |
| | 313 | ≥86 | 25~35 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.3-0.5 | Acicular | ≤1 | 95~105 |
| | 586 | ≥86 | 25~35 | ≤0.3 | ≤0.3 | ≤1.0 | 3~7 | 0.4-0.6 | Acicular | ≤1 | 95~105 |
| | 587 | ≥85 | 25~35 | ≤0.5 | ≤0.3 | ≤1.0 | 3~7 | 0.3-0.5 | Acicular | ≤1 | 95~105 |
| | 420 | ≥86 | 25~35 | ≤0.5 | ≤0.3 | ≤1.0 | 3~7 | 0.3-0.5 | Acicular | ≤1 | 95~105 |

# Iron Oxide Green

**Properties:**
Dark green powder, brightly-colored, with high tinctorial strength, strong covering power, good light and heat resistance and no mobility.

**Applications:**
Coloring for paints, plastics, inks, rubbers, varnished clothes, decorative papers, cultural & educational supplies as well as for building grounds and floor tiles.

**Specification**:

| Product Name | Item | Iron Oxide Green |
|---|---|---|
| Iron oxide Green  | Fe2O3/Fe3O4≥% | -- |
| | 105°C Moisture ≤% | 1.0 |
| | Water soluble salts ≤% | 0.5 |
| | Residue on 45um ≤% | 0.3 |
| | PH-value | 3-7 |
| | Oil absorption | 15-25 |
| | Tinting strength % | 95-105 |
| | Density approx / cm3 | 0.4-0.8 |

# Chrome Green

**Properties:**
Green powder with strong coloring stength and good dispersion.

**Applications:**
1.Used in the dyeing agent of porcelain enamel and ceramic,leatheroid, structure material and fireproof material;
2.The chrome smelt and chromium carbide;
3.polishing material.;
4.catalyst, paint,ink.

**Specification :**

| Product Name | Items | Specifications |
|---|---|---|
| Crome Green  | Cr 2 O 3 Content % ≥ | 98.0 |
| | Moisture % ≤ | 0.20 |
| | Water soluble matter % ≤ | 0.30 |
| | Oil absorption % | 15-20g/100g |
| | Tinting strength % | |
| | Residue on 600 mesh % ≤ | 0.30 |
| | Color/Appearance | yellow dish Green powder |