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CATHAY INDUSTRIES

COLOR PERFECTION

HIGH PERFORMANCE INORGANIC COLOR PIGMENTS

Iron oxides are CATHAY INDUSTRIES' core business. As the third largest iron oxide manufacturer in the world, CATHAY INDUSTRIES provides a wide range of iron oxide pigments from economical grades for construction applications, to high-quality CATHAYCOAT™ for top coating, and the highest-purity CATHAYPURE™ for cosmetics.

CATHAYCOAT™ is CATHAY INDUSTRIES' premium range of iron oxides. It's made for top coating and fine-quality products like paints, plastics and paper. CATHAYCOAT™ can be divided into four subcategories, from the most-premium micronized "A" grades and LV grade, to standard "S" grades, and more economical "C" grades and Primer grades.

Micronized A Grades

CATHAYCOAT™ Micronized A-grade iron oxides are high-quality pigments tailor-made for top coatings that have premium requirements. With its extra well dispersing properties, it can be used directly for high-speed dispersing without further milling. Therefore it saves time, energy and labor during the production of paints, dispersions and other final products.

Standard Grades

CATHAYCOAT™S-grade ironoxides are a range of high-quality pigments with attractive prices for paints, plastics, paper and dispersions. Extra milling or dispersant additives can be added to customize and improve the final product.

Low Viscosity Yellow

CATHAYCOAT™ "LV" grade is a unique yellow iron oxide pigment that provides extra-low viscosity in the final dispersion, even at the highest pigment loading.

Economical C Grades

CATHAYCOAT™ C-grade iron oxide is an economical pigment range for coating applications. With our custom specification manufacturing and our advanced, environmentally safe production, this range of iron oxide products provides another choice for excellent cost-performance ratio.

Primer Grades

Primer-grade iron oxides are a range of red pigments that provide high hiding power, easy dispersion and high tinting strength for primer paint applications.

Heat Stable

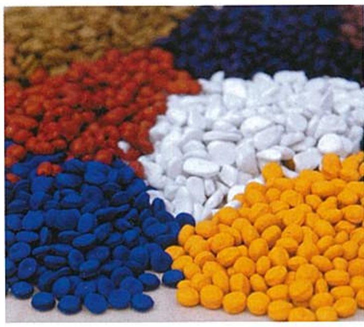
CATHAY INDUSTRIES produces two mixed metal oxide types, Manganese Ferrite and Zinc Ferrite. Both are made with high-temperature calcination and are heat stable for use in applications with temperature changes. These products are offered under the name of CATHAYCOAT™.

Chrome Oxide

Chrome Oxide Green pigments from CATHAY INDUSTRIES are a range of high-quality inorganic green pigments. They are produced to strict quality standard and offer reliable performance, including:

- outstanding light-fastness
- high opacity
- excellent chemical resistance
- exterior durability

Chrome Oxide Green pigments must not be confused with the potentially toxic "Chrome Green," which is a blend of chrome yellow and iron blue that CATHAY INDUSTRIES does not produce.



Umber

CATHAY offers raw and burnt umber pigments of uncompromising quality. These pigments have semi-transparent properties making them ideal for use in wood and furniture stains.

Raw Umber is excellent brown pigments and popular in the stain industry due to their semi-transparency. Though they are not heat stable, UR81 can be used to produce many warm gray tones. It is also used extensively by the colorant houses to darken a color without seriously affecting its chromaticity.

Burnt Umbers offer the best value in brown pigments. These materials are in high demand in the stain industry because of their semi-transparency. Burnt Umbers have a reddish undertone and exhibit good heat stability.

CATHAYCOAT™ MICRONIZED A GRADE

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:4)

CATHAY
INDUSTRIES

IRON OXIDE RED

	RA11A	RA11	RA12A	RA12	RA13A	RA13	RA14
MASS TONE							
TINT TONE							

	RA14B	RA15	RA15B	RA16	RA16B	RA18
MASS TONE						
TINT TONE						

IRON OXIDE YELLOW

	YA21E	YA22E	YA22B	YA23E	YA50E
MASS TONE					
TINT TONE					

LOW VISCOSITY IRON OXIDE YELLOW

	YA21LV	YA22LV	YA23LV
MASS TONE			
TINT TONE			

IRON OXIDE BLACK

	BA30	BA30B	BA31	BA33
MASS TONE				
TINT TONE				

Typical Physical Properties (Micronized A Grade)

Product Code	Pigment Index	Chemical Composition	Purity,% (as Fe_2O_3)	Oil Absorption (g/100g)	Density (g/cm³)	Sieve Residue on 325 mesh (%)	Water Soluble Salts (%)	pH	Moisture (%)	Hegman	Particle Shape	DE	Tinting Strength (%)
Test Method			BS1014	ISO 787-5	ISO 787-10	ISO 787-7	ISO 787-3	ISO 787-9	ISO 787-2	ASTM D1210	Electron Micrograph	ISO7724-2	ISO 8781-1
IRON OXIDE RED													
RA11A	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA11	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA12A	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA12	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA13A	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA13	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA14	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA14B	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA15	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA15B	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA16	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA16B	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
RA18	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
IRON OXIDE YELLOW													
YA21E	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
YA22E	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
YA22B	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
YA23E	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
YA50E	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
LOW VISCOSITY IRON OXIDE YELLOW													
YA21LV	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
YA22LV	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
YA23LV	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.01	≤0.3	5-8	≤1	6.0+	Acicular	≤1	95-105
IRON OXIDE BLACK													
BA30	PBk 11	Fe_3O_4	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Cubic	≤1	95-105
BA30B	PBk 11	Fe_3O_4	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Cubic	≤1	95-105
BA31	PBk 11	Fe_3O_4	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Cubic	≤1	95-105
BA33	PBk 11	Fe_3O_4	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	6.0+	Cubic	≤1	95-105

The color chips represented here are as accurate as the printing process will allow, it may be slightly different from actual shades. This is for your reference ONLY.Please pay attention to the samples we send to you.

CATHAYCOAT™ Standard S Grade

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:4)

CATHAY
INDUSTRIES

IRON OXIDE RED

	RS10	RS11	RS13	RS13B	RS14	RS16	RS18
MASS TONE							
TINT TONE							

IRON OXIDE YELLOW

	YS21	YS22E	YS22B	YS23
MASS TONE				
TINT TONE				

IRON OXIDE BROWN

	BRS80H	BRS82	BRS86	BRS88
MASS TONE				
TINT TONE				

IRON OXIDE BLACK

	BB30	BB33
MASS TONE		
TINT TONE		

IRON OXIDE ORANGE

OS66

MASS TONE

OS66

TINT TONE

Typical Physical Properties (Standard S Grade)

Product Code	Pigment Index	Chemical Composition	Purity,% (as Fe_2O_3)	Oil Absorption (g/100g)	Density (g/cm³)	Sieve Residue on 325 mesh (%)	Water Soluble Salts (%)	pH	Moisture (%)	Hegman	Particle Shape	DE	Tinting Strength (%)
Test Method			BS1014	ISO 787-5	ISO 787-10	ISO 787-7	ISO 787-3	ISO 787-9	ISO 787-2	ASTM D1210	Electron Micrograph	ISO7724-2	ISO 8781-1
IRON OXIDE RED													
RS10	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
RS11	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
RS13	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
RS13B	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
RS14	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
RS16	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
RS18	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.1	≤0.3	5-8	≤1	3.0+	Spherical	≤1	95-105
IRON OXIDE YELLOW													
YS21	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.1	≤0.3	5-8	≤1	3.0+	Acicular	≤1	95-105
YS22E	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.1	≤0.3	5-8	≤1	3.0+	Acicular	≤1	95-105
YS22B	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.1	≤0.3	5-8	≤1	3.0+	Acicular	≤1	95-105
YS23	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	4.1	≤0.1	≤0.3	5-8	≤1	3.0+	Acicular	≤1	95-105
IRON OXIDE BROWN													
BRS80H	Mixture	Mixture	88+	20-35	4.1-4.9	≤0.25	≤0.3	5-8	≤1	---	Irregular	≤1	95-105
BRS82	Mixture	Mixture	88+	20-35	4.1-4.9	≤0.25	≤0.3	5-8	≤1	---	Irregular	≤1	95-105
BRS86	Mixture	Mixture	88+	20-35	4.1-4.9	≤0.25	≤0.3	5-8	≤1	---	Irregular	≤1	95-105
BRS88	Mixture	Mixture	88+	20-35	4.1-4.9	≤0.25	≤0.3	5-8	≤1	---	Irregular	≤1	95-105
IRON OXIDE BLACK													
BB30	PBk 11	Fe_3O_4	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	---	Cubic	≤1	95-105
BB33	PBk 11	Fe_3O_4	95+	15-25	5.0	≤0.01	≤0.3	5-8	≤1	---	Cubic	≤1	95-105
IRON OXIDE ORANGE													
OS66	Mixture	Mixture	86+	20-35	4.1-4.9	≤0.25	≤0.3	5-8	≤1	---	Irregular	≤1	95-105

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C AND PRIMER GRADES

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:4)

CATHAY INDUSTRIES

C GRADE

IRON OXIDE RED

	RC11	RC13	RC14
MASS TONE			
TINT TONE			

IRON OXIDE YELLOW

	YC22B	YC23B	YC23
MASS TONE			
TINT TONE			

IRON OXIDE ORANGE

	OC66
MASS TONE	
TINT TONE	

IRON OXIDE BROWN

	BRC86	BRC88
MASS TONE		
TINT TONE		

PRIMER GRADE

IRON OXIDE RED

	PR111	PR222	PR225	PR180	PR801	PR802
MASS TONE						
TINT TONE						

Typical Physical Properties (C and Primer Grades)

Product Code	Pigment Index	Chemical Composition	Purity,% (as Fe_2O_3)	Oil Absorption (g/100g)	Density (g/cm³)	Sieve Residue on 325 mesh (%)	Water Soluble Salts (%)	pH	Moisture (%)	Hegman	Particle Shape	DE	Tinting Strength (%)
Test Method			BS1014	ISO 787-5	ISO 787-10	ISO 787-7	ISO 787-3	ISO 787-9	ISO 787-2	ASTM D1210	Electron Micrograph	ISO7724-2	ISO 8781-1

C GRADE

IRON OXIDE RED													
RC11	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.25	≤0.3	5-8	≤1	---	Spherical	≤1	95-105
RC13	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.25	≤0.3	5-8	≤1	---	Spherical	≤1	95-105
RC14	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.25	≤0.3	5-8	≤1	---	Spherical	≤1	95-105

IRON OXIDE YELLOW													
YC22B	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	5.0	≤0.25	≤0.3	5-8	≤1	---	Acicular	≤1	95-105
YC23B	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	5.0	≤0.25	≤0.3	5-8	≤1	---	Acicular	≤1	95-105
YC23	PY 42	$Fe_2O_3 \cdot H_2O$	86+	28-40	5.0	≤0.25	≤0.3	5-8	≤1	---	Acicular	≤1	95-105

IRON OXIDE ORANGE													
OC66	Mixture	Mixture	86+	20-35	4.1-4.9	≤0.25	≤0.5	5-8	≤1	---	Irregular	≤1	95-105

IRON OXIDE BROWN													
BRC86	Mixture	Mixture	88+	20-35	4.1-4.9	≤0.25	≤0.5	5-8	≤1	---	Irregular	≤1	95-105
BRC88	Mixture	Mixture	88+	20-35	4.1-4.9	≤0.25	≤0.5	5-8	≤1	---	Irregular	≤1	95-105

PRIMER GRADE

IRON OXIDE RED													
PR111	PR 101	Fe_2O_3	70+	15-25	5.0	≤0.01	≤0.6	5-8	≤1	6.0+	Spherical	≤1	95-105
PR222	PR 101	Fe_2O_3	70+	15-25	5.0	≤0.1	≤0.6	5-8	≤1	3.0+	Spherical	≤1	95-105
PR225	PR 101	Fe_2O_3	60+	15-25	5.0	≤0.1	≤0.6	5-8	≤1	3.0+	Spherical	≤1	95-105
PR180	PR 101	Fe_2O_3	95+	15-25	5.0	≤0.25	≤0.4	4-8	≤1	---	Spherical	≤1	95-105
PR801	PR 101	Fe_2O_3	70+	15-25	5.0	≤0.1	≤0.6	5-8	≤1	6.0+	Spherical	≤2.5	90-100
PR802	PR 101	Fe_2O_3	70+	15-25	5.0	≤0.1	≤0.6	5-8	≤1	6.0+	Spherical	≤2.5	90-100

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CATHAYCOAT™ SPECIALTY PIGMENT

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:4)

CATHAY
INDUSTRIES

ZINC FERRITE

	ZF15	ZF25
MASS TONE		
TINT TONE		

MANGANESE FERRITE

	F9900M	F9900MB
MASS TONE		
TINT TONE		

CHROME OXIDE GREEN

	GA74	GA76	GA78	GA74M	GA76M	GA78M
MASS TONE						
TINT TONE						

UMBERS

	UR81	UB82	UB83	UB84	UB85	UB86
MASS TONE						
TINT TONE						

Typical Physical Properties (Specialty Pigment)

Product Code	Pigment Index	Chemical Composition	Purity,% (as Fe_2O_3 or Cr_2O_3)	Oil Absorption (g/100g)	Density (g/cm³)	Sieve Residue on 325 mesh (%)	Water Soluble Salts (%)	pH	Moisture (%)	Hegman	Particle Shape	DE	Tinting Strength (%)
Test Method			BS1014	ISO 787-5	ISO 787-10	ISO 787-7	ISO 787-3	ISO 787-9	ISO 787-2	ASTM D1210	Electron Micrograph	ISO7724-2	ISO 8781-1
ZINC FERRITE													
ZF15	PY 119	$ZnO \cdot Fe_2O_3$	65+	15-25	5.0	≤0.1	≤0.5	5-8	≤1	2.0+	Spherical	≤1	95-105
ZF25	PY 119	$ZnO \cdot Fe_2O_3$	65+	15-25	5.0	≤0.1	≤0.5	5-8	≤1	2.0+	Spherical	≤1	95-105
MANGANESE FERRITE													
F9900M	PBk 33	$(Fe,Mn)_2O_3$	65+	15-25	5.0	≤0.1	≤0.4	5-8	≤1	6.0+	Spherical	≤1	95-105
F9900MB	PBk 33	$(Fe,Mn)_2O_3$	65+	15-25	5.0	≤0.1	≤0.4	5-8	≤1	6.0+	Spherical	≤1	95-105
CHROME OXIDE GREEN													
GA74	PG 17	Cr_2O_3	98.5+	15-25	5.2	≤0.1	≤0.3	5-8	≤1	---	Spherical	≤1	95-105
GA76	PG 17	Cr_2O_3	98.5+	15-25	5.2	≤0.1	≤0.3	5-8	≤1	---	Spherical	≤1	95-105
GA78	PG 17	Cr_2O_3	98.5+	15-25	5.2	≤0.1	≤0.3	5-8	≤1	---	Spherical	≤1	95-105
GA74M	PG 17	Cr_2O_3	98.5+	15-25	5.2	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
GA76M	PG 17	Cr_2O_3	98.5+	15-25	5.2	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
GA78M	PG 17	Cr_2O_3	98.5+	15-25	5.2	≤0.01	≤0.3	5-8	≤1	6.0+	Spherical	≤1	95-105
UMBERS													
UR81	PBr 7	Fe_2O_3	55+	55.8	3.1	≤0.05	---	8.0	≤1	5.0+	Goethite	≤1	95-105
UB82	PBr 7	Fe_2O_3	50+	62	2.9	≤0.15	---	7.8	≤1	5.0+	Hematite	≤1	95-105
UB83	PBr 7	Fe_2O_3	57+	53	3.6	≤0.05	---	8.1	≤1	5.0+	Hematite	≤1	95-105
UB84	PBr 7	Fe_2O_3	61+	46.5	3.0	≤0.1	---	7.8	≤1	5.0+	Hematite	≤1	95-105
UB85	PBr 7	Fe_2O_3	55+	55	3.6	≤0.1	---	7.5	≤1	5.0+	Hematite	≤1	95-105
UB86	PBr 7	Fe_2O_3	58+	54	3.7	≤0.01	---	7.5	≤1	5.0+	Hematite	≤1	95-105

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