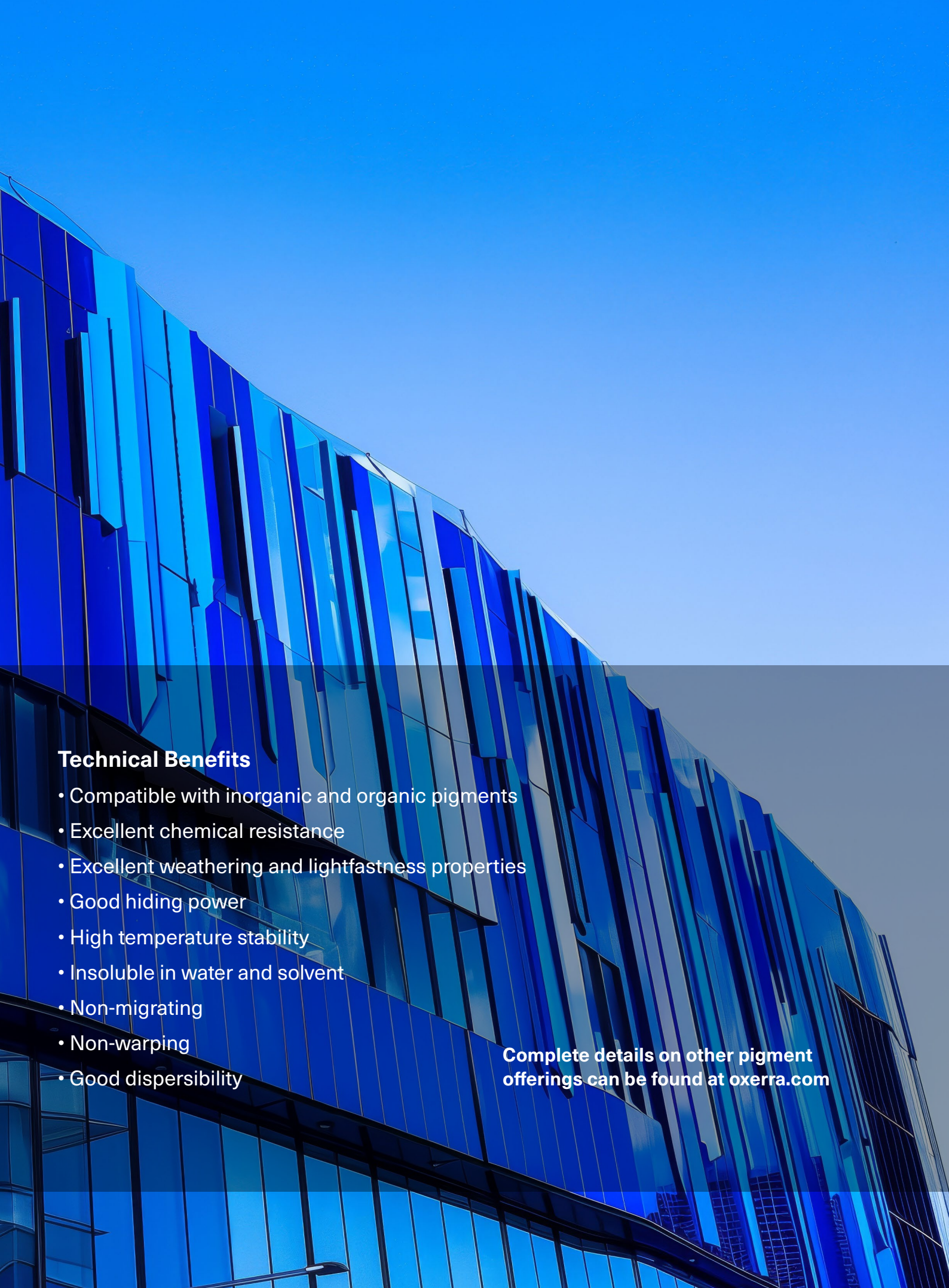
COLOURPLEX® AND SOLAPLEX® PIGMENTS

XERRA

Empower Color Globally

OXERRA is a leading developer and manufacturer of inorganic pigments. Our COLOURPLEX® and SOLAPLEX® pigments offer a complete range of high performance mixed metal oxide pigments.

The excellent durability of complex inorganic colored pigments makes them ideal for demanding applications in the plastics, surface coatings and building materials industries.



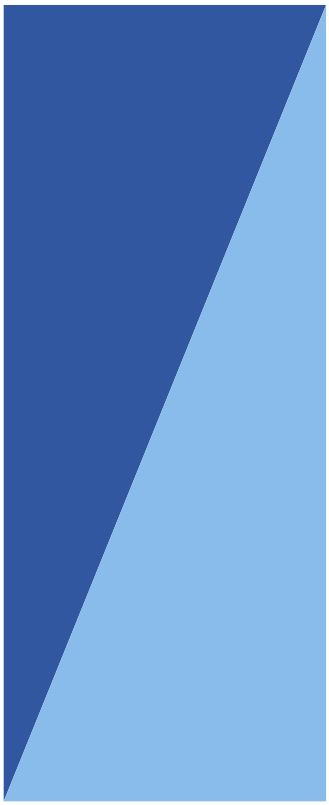
Technical Benefits

- Compatible with inorganic and organic pigments
- Excellent chemical resistance
- Excellent weathering and lightfastness properties
- Good hiding power
- High temperature stability
- Insoluble in water and solvent
- Non-migrating
- Non-warping
- Good dispersibility

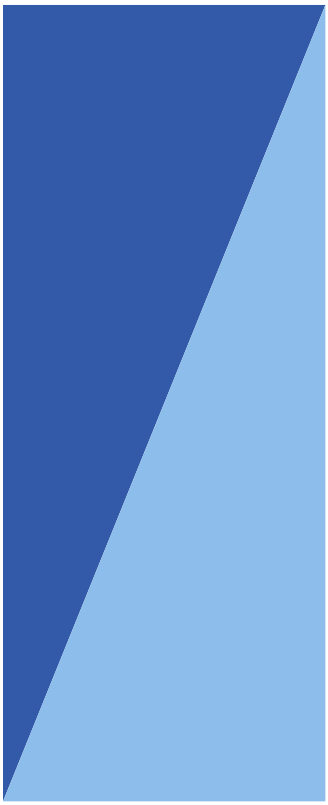
Complete details on other pigment offerings can be found at oxerra.com

COLOURPLEX® BLUE PIGMENTS

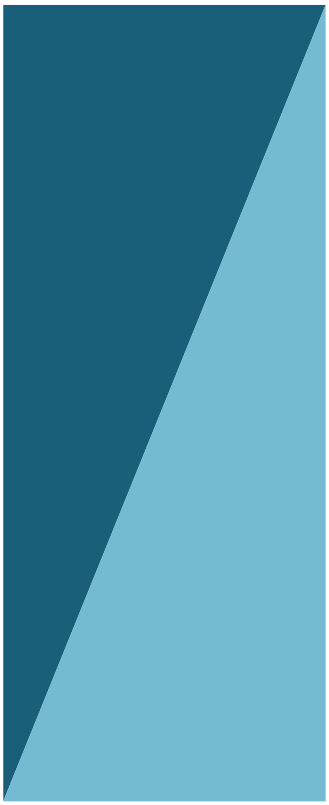
Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:3)



Colourplex®
Azuri Blue 34L2000



Colourplex®
Royal Blue 34L39

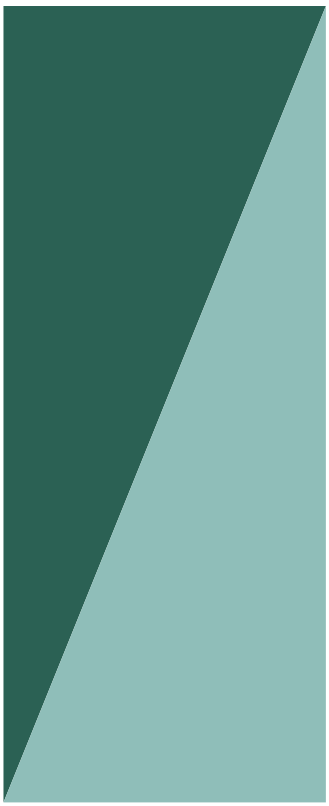


Colourplex®
Amazon Blue 34L2001

Colourplex®
Atlantic Blue 34L84

Colourplex®
Aquamarine 34K28

Colourplex®
Turquoise 34L2010

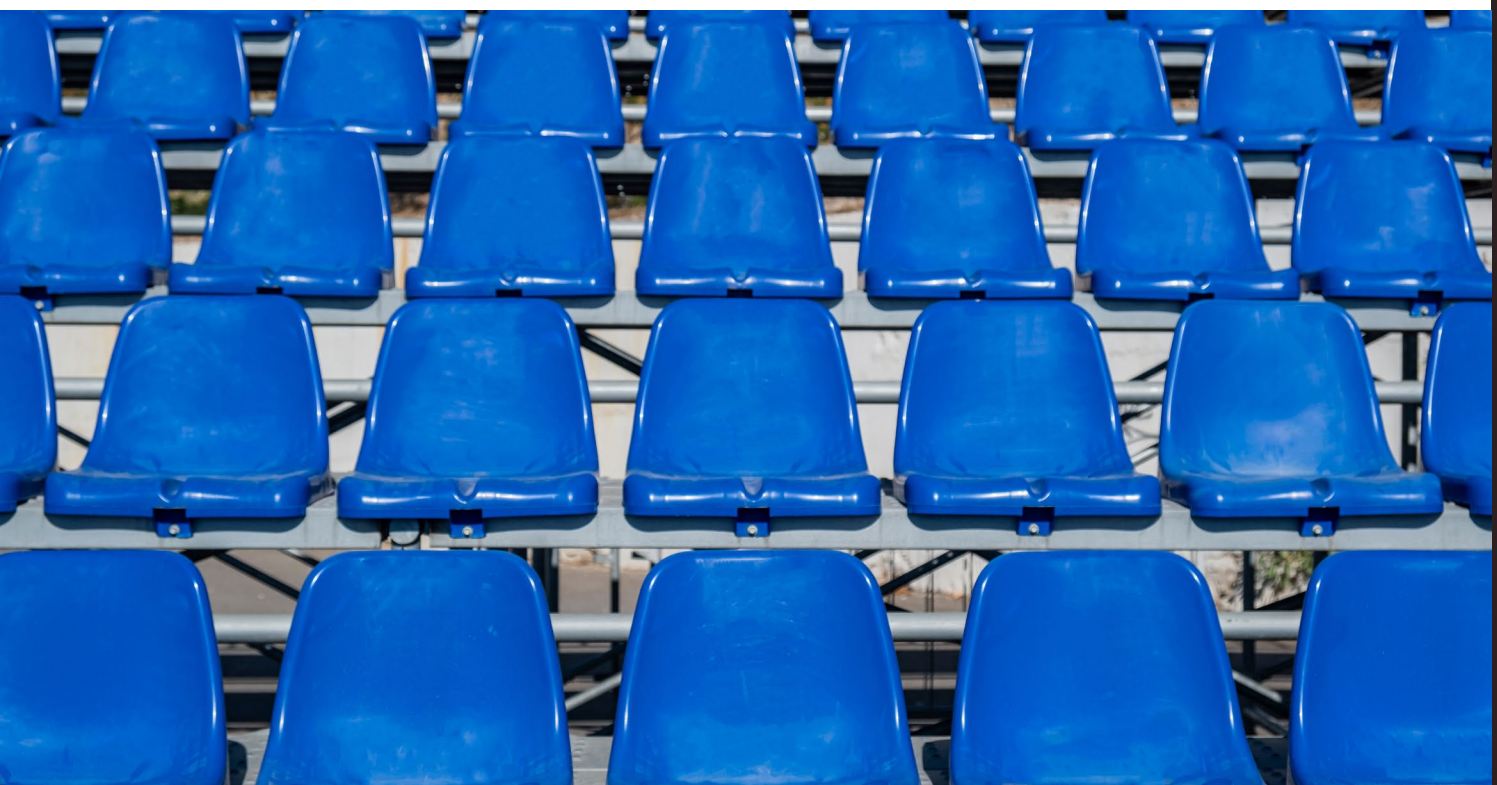


Colourplex®
Dark Green 34K6

IMPORTANT COLOR ACCURACY NOTE

Color chips shown are only as accurate as the printing process allows. Colors may be slightly different from actual shades. This is for your reference only. Actual samples will provide best representation.

Product Code	Pigment Index	Chemical Composition	Heat Stability C	Crystal Structure	Oil Absorption (g/100g)	Density (g/cm^3)	pH	Laser Diffraction Particle Size D50 (Microns)	Reflect	TSR (%)
Test Method					ISO 787-5	ISO 787-10	ISO 787-9			
COLOURPLEX® BLUE PIGMENTS										
Colourplex® Azuri Blue 34L2000	P Bl 28	$CoAl_2O_4$	>800°C	Spinel	27-29	4.0-5.0	9.0-10.5	1.0-2.0	✓	37
Colourplex® Royal Blue 34L39	P Bl 28	$CoAl_2O_4$	>800°C	Spinel	27-29	4.0-5.0	9.5-10.5	1.0-1.5	✓	35
Colourplex® Amazon Blue 34L2001	P Bl 36	$Co(CrAl)_2O_4$	>800°C	Spinel	22-24	4.0-5.0	7.0-8.0	0.8-1.5	✓	24
Colourplex® Atlantic Blue 34L84	P Bl 36	$Co(CrAl)_2O_4$	>800°C	Spinel	20-22	4.0-5.0	8.0-9.0	1.0-1.5	✓	33
Colourplex® Aquamarine 34K28	P Bl 36	$Co(CrAl)_2O_4$	>800°C	Spinel	19-21	4.0-5.0	6.0-8.0	0.8-1.5	✓	33
Colourplex® Turquoise 34L2010	P Bl 28	$CoAl_2O_4$	>800°C	Spinel	27-29	3.0-4.0	10.5-11.5	0.8-1.2	✓	42
Colourplex® Dark Green 34K6	P Gr 26	$CoCr_2O_4$	>800°C	Spinel	19-21	4.0-5.0	7.5-8.5	1.0-2.0	✓	25



COLOURPLEX® YELLOW PIGMENTS

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:3)

Colourplex® Yellow 34H101 | Colourplex® Yellow 34H103 | Colourplex® Yellow 34H104 | Colourplex® Yellow 34H107

Product Code	Pigment Index	Chemical Composition	Heat Stability C	Crystal Structure	Oil Absorption (g/100g)	Density (g/cm^3)	pH	Laser Diffraction Particle Size D50 (Microns)	Reflect	TSR (%)
Test Method					ISO 787-5	ISO 787-10	ISO 787-9			
COLOURPLEX® YELLOW PIGMENTS										
Colourplex® Yellow 34H101	P Y 53	$(NiSbTi)O_2$	>800°C	Rutile	13-15	4.0-4.1	7.0-8.0	1.5 - 2.3	✓	67
Colourplex® Yellow 34H103	P Br 24	$(CrSbTi)O_2$	>800°C	Rutile	14-16	3.6-3.8	7.0-8.0	1.0 - 1.5	✓	59
Colourplex® Yellow 34H104	P Br 24	$(CrSbTi)O_2$	>800°C	Rutile	13-15	3.9-4.0	7.0-8.0	1.2 - 1.7	✓	57
Colourplex® Yellow 34H107	P Br 24	$(CrSbTi)O_2$	>800°C	Rutile	16-18	4.2-4.3	7.0-8.0	1.2 - 1.7	✓	57

IMPORTANT COLOR ACCURACY NOTE

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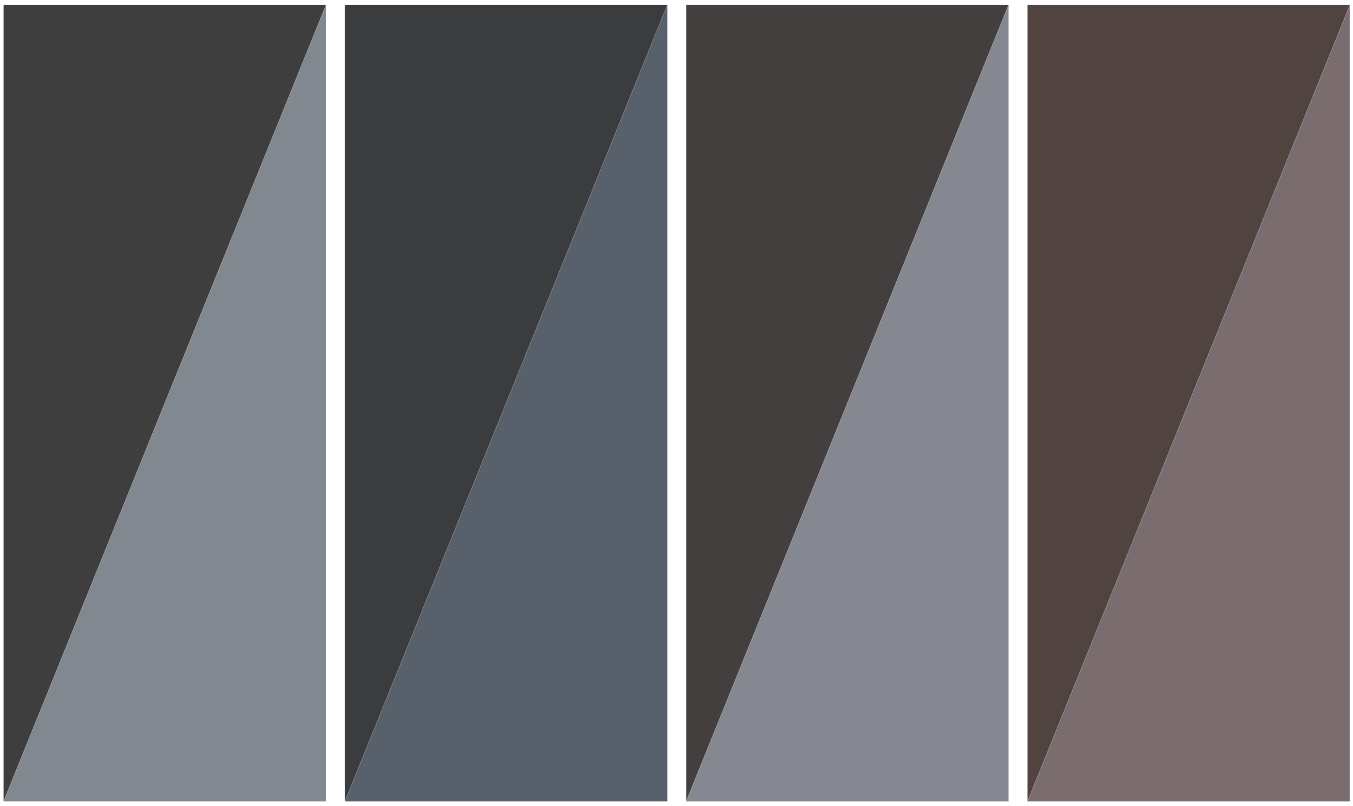
COLOURPLEX® BLACK PIGMENTS

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:3)



Colourplex® Black 34E37 | Colourplex® Black 34E60 | Colourplex® IR Black 34E34 | Colourplex® Mahogany 34R20

Product Code	Pigment Index	Chemical Composition	Heat Stability C	Crystal Structure	Oil Absorption (g/100g)	Density (g/cm^3)	pH	Laser Diffraction Particle Size D50 (Microns)	Reflect	TSR (%)
Test Method					ISO 787-5	ISO 787-10	ISO 787-9			
COLOURPLEX® BLACK PIGMENTS										
Colourplex® Black 34E37	P Bk 28	$CuCr_2O_4$	>800°C	Spinel	19-21	5.1-5.3	8.5-9.5	1.1-1.6		
Colourplex® Black 34E60	P Bk 26	$MnFe_2O_4$	>600°C	Spinel	29-33	4.4-4.6	7.0-9.0	0.25-0.30		
Colourplex® IR Black 34E34	P Br 29	$(Fe,Cr)_2O_3$	>800°C	Hematite	14-16	4.8-4.9	6.0-7.5	1.0-2.0	✓	17
Colourplex® Mahogany 34R20	P Br 29	$(CrSbTi)O_2$	>800°C	Hematite	27-29	5.0-6.0	6.0-7.0	2.0-3.0	✓	23

IMPORTANT COLOR ACCURACY NOTE

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SOLAPLEX® pigments: Substitution made simple for environmentally friendly formulation

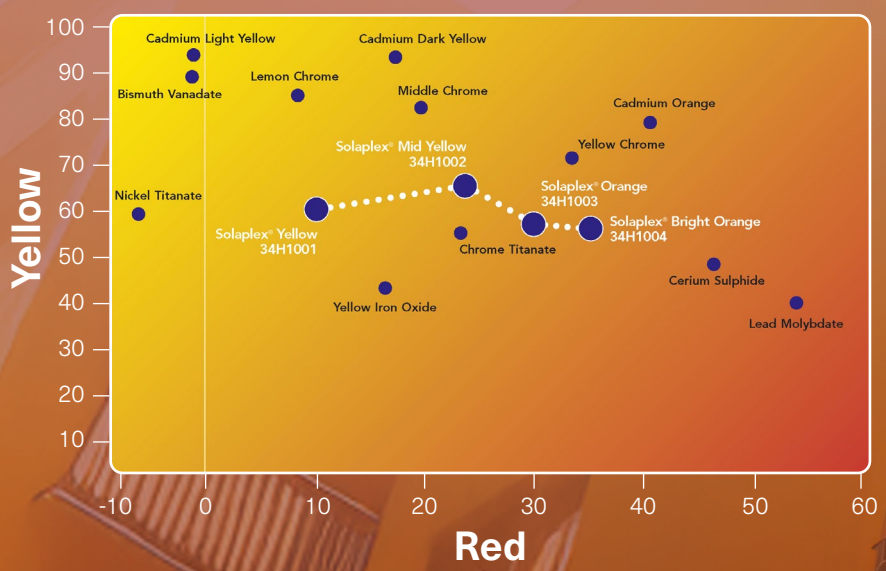
A reliable alternative to yellow and orange pigments based on cadmium and chromium, SOLAPLEX® pigments can be used to create formulations with equivalent or superior processing and performance properties.

Cleaner and brighter than many other inorganic options, SOLAPLEX® pigments create intense red shaded yellow and orange colors with enhanced luminosity and highly reflective properties.

SOLAPLEX® pigments can be dispersed in a wide range of coatings and polymers. The result is solid shades that are able to withstand challenging conditions in the most demanding pigment applications – from coatings and plastics to artist colors and safety products.

Solaplex pigments offer:

- Excellent durability : Weatherfast, Thermally stable, Chemically resistant
- Better color performance : Excellent opacity and hiding power, High reflectance (TSR)
- Less abrasive than conventional titanates



Extending the durable yellow to orange color space

SOLAPLEX® pigments are based on a novel class of chemistry and have a number of color, processing and performance advantages over conventional inorganic and organic red shaded yellow to orange pigment types.

SOLAPLEX® PIGMENTS

Colors Represent Mass Tone and Tint Tone (Reduction with TiO_2 1:3)

Solaplex® Yellow 34H1001R | Solaplex® Mid Yellow 34H1002 | Solaplex® Orange 34H1003 | Solaplex® Bright Orange 34H1004

Product Code	Pigment Index	Chemical Composition	Heat Stability C	Crystal Structure	Oil Absorption (g/100g)	Density (g/cm^3)	pH	Laser Diffraction Particle Size D50 (Microns)	Reflect	TSR (%)
Test Method					ISO 787-5	ISO 787-10	ISO 787-9			
SOLAPLEX® PIGMENTS										
Solaplex® Yellow 34H1001R	P Y 216	$(SnZnTi)O_2$	>340°C	Rutile	20-21	4.0-5.0	7.0-9.0	1.5 - 2.0	✓	67
Solaplex® Mid Yellow 34H1002	P Y 216	$(SnZnTi)O_2$	>340°C	Rutile	19-20	4.0-5.0	7.0-8.0	1.5 - 2.0	✓	64
Solaplex® Orange 34H1003	P Y 216	$(SnZnTi)O_2$	>340°C	Rutile	15-16	5.0-6.0	9.0-10.0	1.5 - 2.0	✓	60
Solaplex® Bright Orange 34H1004	P Y 216	$(SnZnTi)O_2$	>340°C	Rutile	16-18	4.5-5.5	9.5-10.5	1.5 - 2.0	✓	60

IMPORTANT COLOR ACCURACY NOTE

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Bright Durable Coatings

When it comes to selecting color pigments for coatings applications, formulators must use pigments that are free of heavy metals. Often a reformulation is necessary in order to move away from existing heavy metal formulation. The reformulation must also provide the protection, durability, and color space required for the application.

SOLAPLEX® pigments can satisfy all of these requirements – out performing many existing alternatives. Giving formulators a range of yellow and orange color options to work with – which are similar to lead-based systems.

Proven in Plastics

Formulators must work with color pigments that are environmentally friendly. Those pigments need to be capable of giving plastic goods a long-lasting colorful finish that can withstand high temperature processing, general wear and tear and external factors such as strong sunlight.

REFLECT® Pigments for Solar Heat Management

An object exposed to irradiation by the sun will naturally absorb energy and potential heat build-up can occur.

Darker colors traditionally absorb more light and solar radiation and so get hotter.

REFLECT® pigments are a range of mixed metal oxide pigments, which are chemically engineered to maximize high Total Solar Reflectance (TSR), especially in the infra-red region.

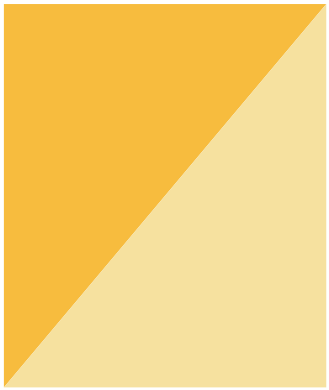
REFLECT® pigments offer following benefits:

- Reduced energy consumption
  - Lower CO2 emissions
  - Improved ergonomics and comfort
- Environmentally "friendly"
  - Reduced "urban heat-island" effect – cooler cities
  - Less air pollution
- Enhanced durability and weatherability performance
  - Improved dimensional stability
  - Reduced thermal degradation
- Cooler surfaces improving human comfort and safety

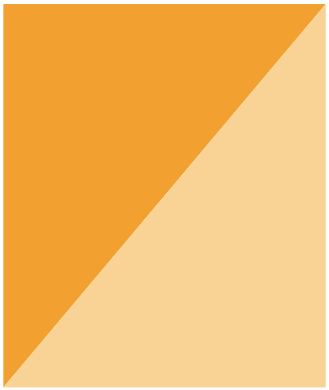
Applications for REFLECT® pigments:

- Roofing products
- Plastics e.g.vinylsidings,PVC profiles or outdoor use
- Façade paints and topcoats on thermal insulation systems
- Industrial coatings
- Technical textiles

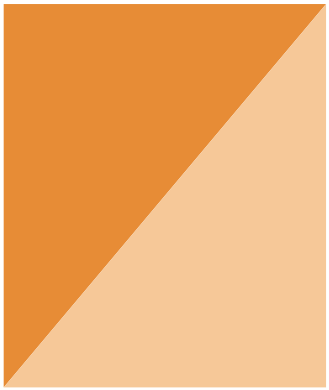
REFLECT® Range



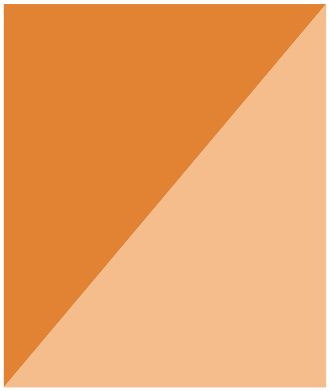
Solaplex® - TSR 67%
Yellow 34H1001R



Solaplex® - TSR 64%
Mid Yellow 34H1002

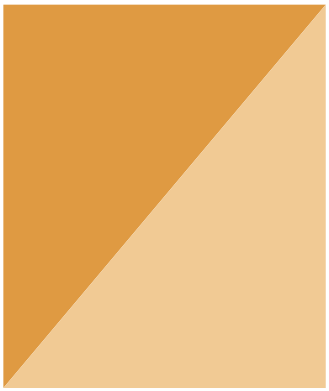


Solaplex® - TSR 60%
Orange 34H1003

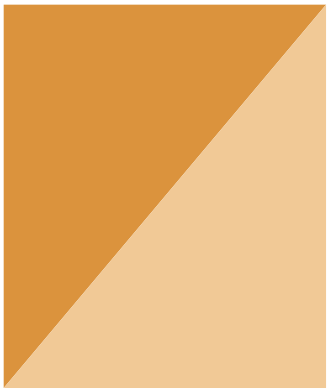


Solaplex® - TSR 60%
Bright Orange 34H1004

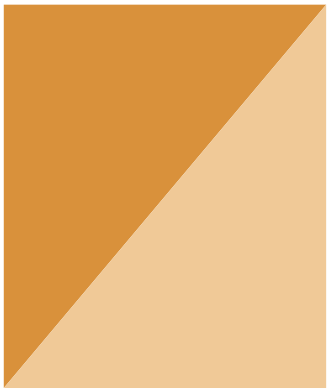
Colourplex® - TSR 67%
Yellow 34H101



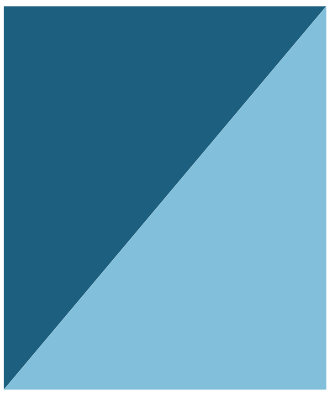
Colourplex® - TSR 59%
Yellow 34H103



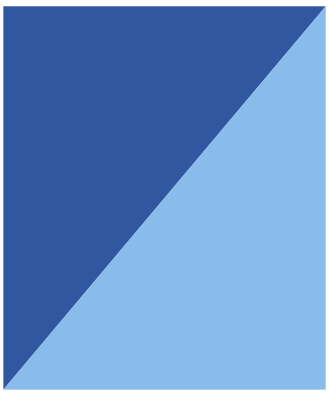
Colourplex® - TSR 57%
Yellow 34H104



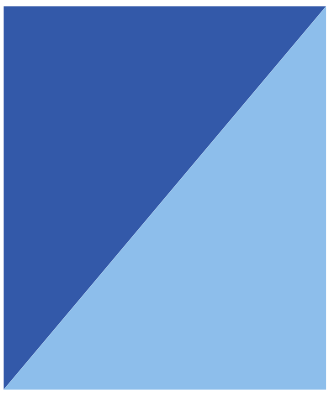
Colourplex® - TSR 57%
Yellow 34H107



Colourplex® - TSR 33%
Atlantic Blue 34L84

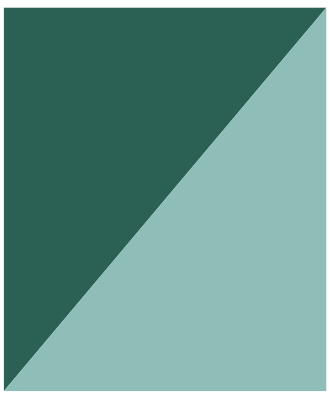


Colourplex® - TSR 37%
Azuri Blue 34L2000

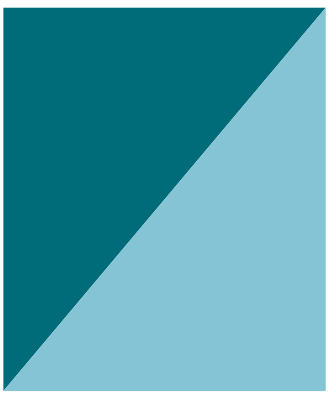


Colourplex® - TSR 35%
Royal Blue 34L39

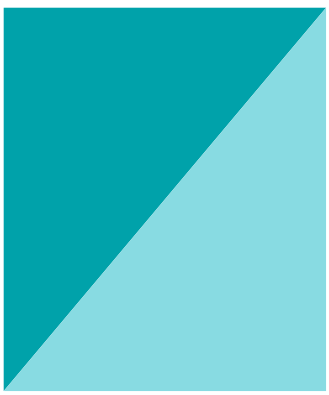
Colourplex® - TSR 17%
IR Black 34E34



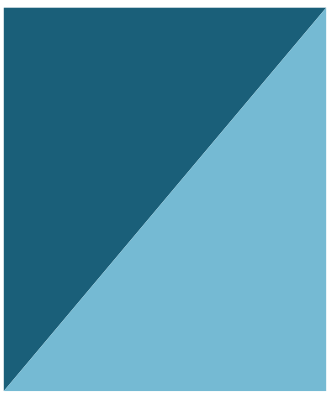
Colourplex® - TSR 25%
Dark Green 34K6



Colourplex® - TSR 33%
Aquamarine 34K28



Colourplex® - TSR 42%
Turquoise 34L2010



Colourplex® - TSR 24%
Amazon Blue 34L2001

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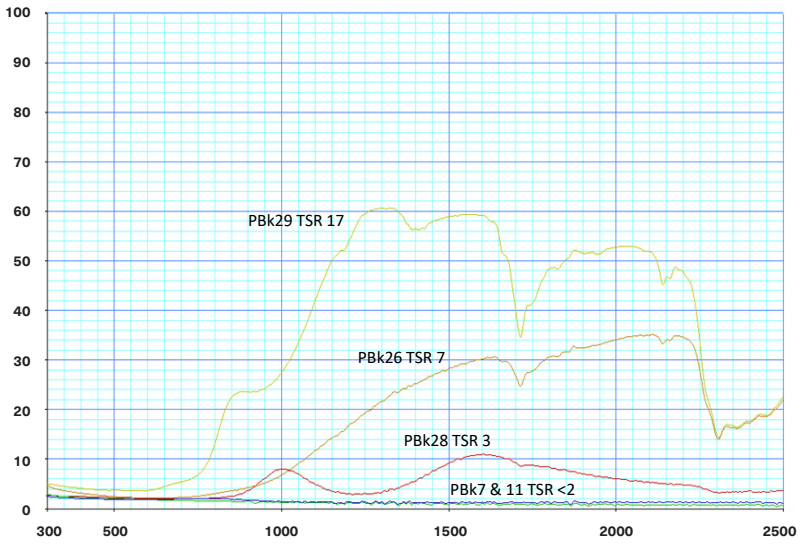
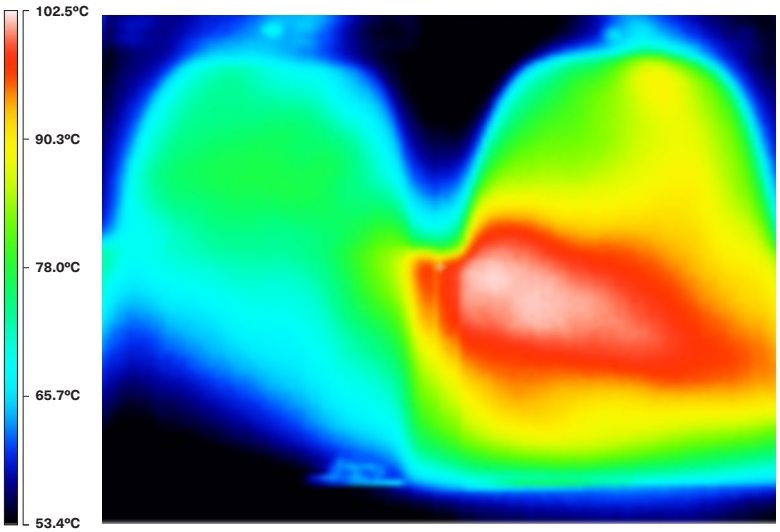
Heat Build-Up of Black Pigments

The black color space is technically the most challenging as black surfaces absorb a significant amount of solar energy and heat. The heat build-up properties of black pigments are influenced by their chemistry therefore careful pigment selection is critical. The graph below demonstrates the benefits of Pigment Brown 29 for maximizing TSR and minimizing heat build-up in contrast to other black pigment chemistries.

Total solar reflectance of black pigments

Different pigment chemistries can produce colors in the same color space but with very different reflective properties





Average Temperature

72°C

96°C

34E34 (PBr29)

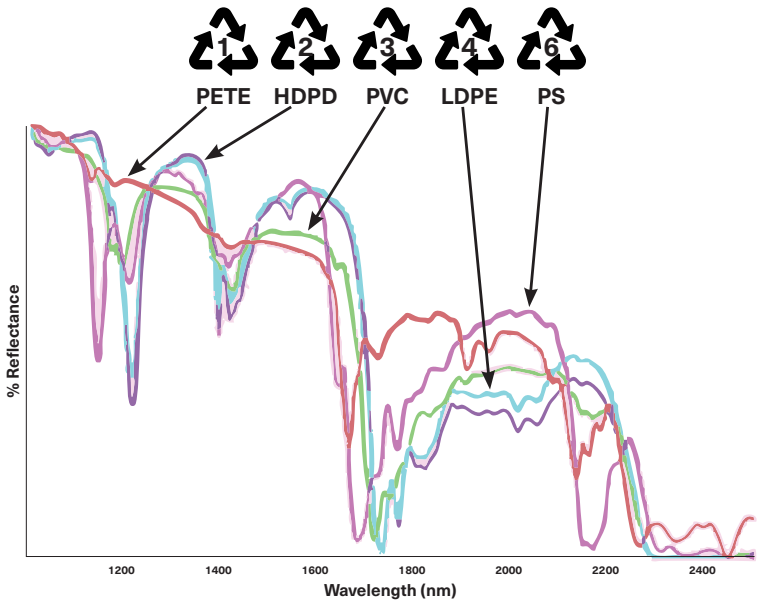
Carbon Black

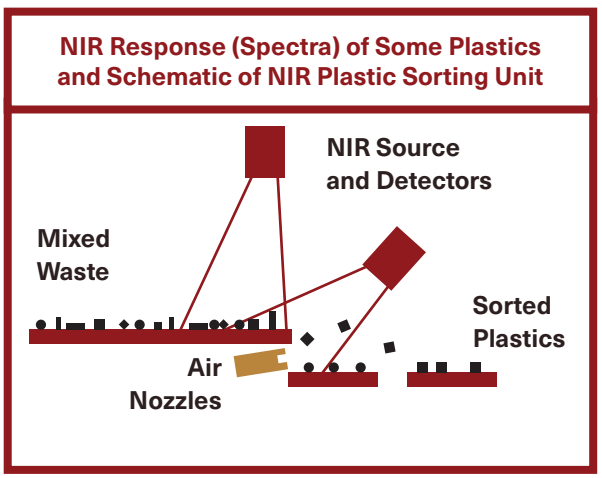
REFLECT® Pigments for Black Plastic Sorting and Recycling

Global regulation is more and more impacting the plastics industry during the transition from a linear to a more circular economy. As a result brand owners rapidly review sustainability policies and launch a lot of initiatives. This increasing regulation for recycling plastics implies the need for new tools in formulation of plastics especially for sorting black colored plastics during the recycling process. Where standard black pigments hinder the automated sorting of these plastics using n-IR optical technology, REFLECT pigments allow the detection of the polymer n-IR finger print and automated sorting of dark colored plastics.

Colourplex IR Black 34E34 offers

- Jet black color with high color strength
- IR compatible
- Global regulatory compliancy incl. a wide range of packaging and food contact approvals thanks to their chemical stability and non-migrating properties
- Non-magnetic properties
- Good dispersibility and compatibility with wide range of resins
- Non-warping properties





Color that's meant to last.

OXERRA is internationally recognized as a superior manufacturer of iron oxide and other pigments for the coatings, plastics, specialties and construction industries. Our drive to produce high-quality, unquestionably pure pigments combined with our iron-clad customer service makes us the obvious choice.

Scan for Detailed Contact Information

An Unmatched Global Manufacturing Network Across Eight Countries on Four Continents

oxerra.com