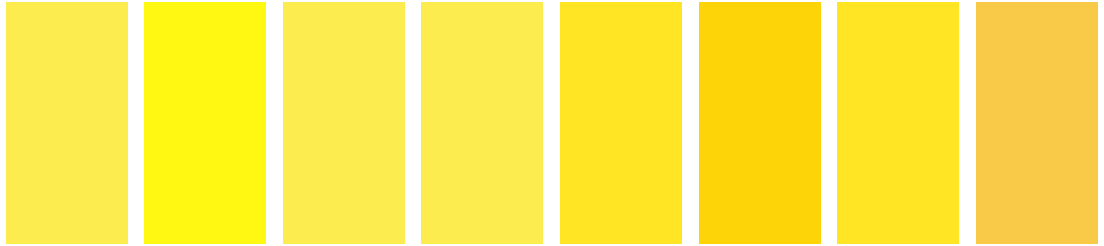


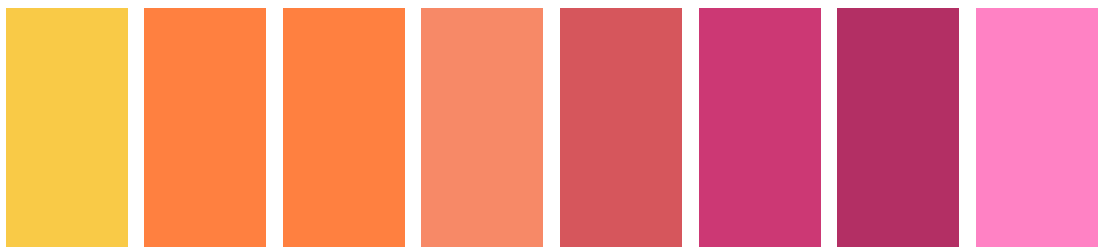
# Anthosin™, Pergasol™ and Pergasol™ C Acid and Direct Dyes

## Direct Dyes

(40 lbs / ton)



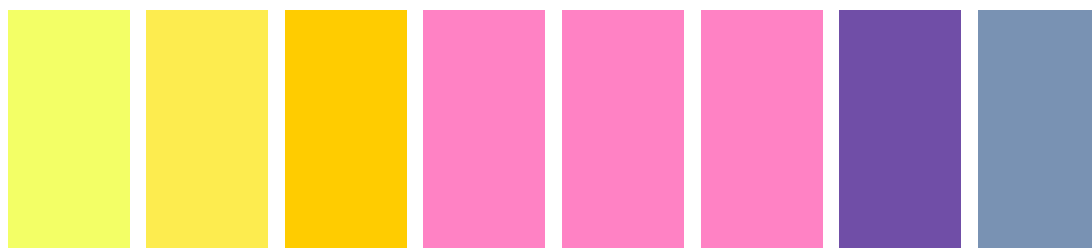
Solenis Trade Name	PERGASOL YELLOW 14 L	PERGASOL YELLOW TS-A LIQ.	PERGASOL YELLOW PR 440 L	PERGASOL YELLOW 49 L NA	PERGASOL YELLOW RN-Z LIQ.	PERGASOL YELLOW 66 L NA	PERGASOL YELLOW 70 L	PERGASOL YELLOW 76 LN
Pre 58 or FDA <sup>1</sup>	No	No	Yes	No	No	Yes	No	Yes
Ionic Charge	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic
#/Gal	8.84	9.18	8.67	9.42	9.18	9.42	8.84	9.09
pH	~7.0	~7.0	~10.0	~7.5	~7.5	~11.0	~7.5	~10.0
Viscosity (cps)	20-100	20-200	10-100	10-100	10-100	10-100	40-100	30-100
Two-Sidedness	Top	Top	Even - Top	Bottom	Even	Bottom	Bottom	Top
Lightfastness	Low	Fair	Fair	Very Good	Good	Very Good	Good	Fair
Bleachability	Good	Very Good	Excellent	Excellent	Fair	Excellent	Very good	Not Bleachable
Water Bleed	Slight	Slight	Slight	Slight	Slight	Slight	Slight	Trace



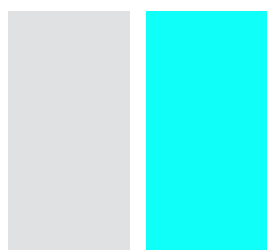
Solenis Trade Name	PERGASOL YELLOW PR 427 L	PERGASOL ORANGE 49 L	PERGASOL ORANGE 80 LN	PERGASOL ORANGE PR 268 L	PERGASOL RED PR 396 L	PERGASOL RED 50 L	PERGASOL RED 50 L 150%	PERGASOL RED 51 L
Pre 58 or FDA <sup>1</sup>	Yes	No	Yes	No	No	No	No	Yes
Ionic Charge	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic
#/Gal	9.09	8.76	8.84	8.84	9.18	8.67	8.84	9.09
pH	~10.0	~7.9	~7.3	~8.0	~7.5	~7.5	~8.0	~7.0
Viscosity (cps)	30-100	40-100	20-200	10-200	20-100	10-100	10-100	40-100
Two-Sidedness	Top	Bottom	Top	Even - Top	Top	Bottom	Bottom	Bottom
Lightfastness	Fair	Good	Good	Good	Good	Good	Good	Good
Bleachability	Not Bleachable	Good	Good	Good	Good	Good	Good	Fair
Water Bleed	Trace	Trace	Slight	Slight	Slight	Moderate	Moderate	Slight

# Cationic Direct Dyes

(40 lbs / ton)



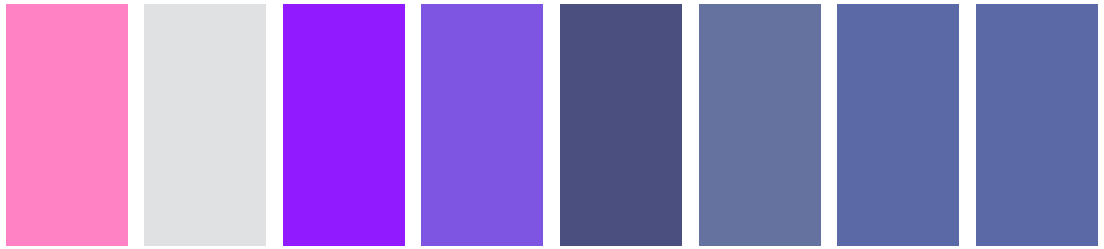
Solenis Trade Name	PERGASOL YELLOW F-6GZ LIQ.	PERGASOL C YELLOW 36 LV	PERGASOL C YELLOW 97 L NA	PERGASOL C RED 32 LS	PERGASOL C RED 61 LS	PERGASOL C RED 78L	PERGASOL C VIOLET 92 L	PERGASOL C BLUE 49 LS
Pre 58 or FDA <sup>1</sup>	No	No	No	No	No	Yes	No	No
Ionic Charge	Cationic	Cationic	Cationic	Cationic	Cationic	Cationic	Cationic	Cationic
#/Gal	9.51	9.18	9.84	9.01	9.09	9.09	8.67	9.09
pH	~2.0	~2.1	~2.0	~2.5	~2.5	~4.5	~3.0	~2.5
Viscosity (cps)	20-300	30-500	20-300	20-200	20-200	50-1200	20-1000	20-1000
Two-Sidedness	Top	Top	Top	Top	Top	Top	Top	Top
Lightfastness	Fair	Fair	Fair	Fair	Fair	Low	Good	Good
Bleachability	Fair	Very good	Excellent	Excellent	Excellent	Very good	Excellent	Good
Water Bleed	Trace	Slight	Slight	Slight	Slight	Negligible	Negligible	Negligible



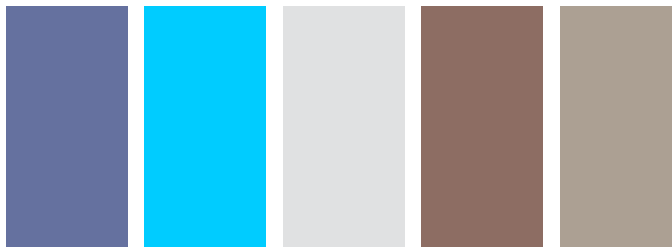
Solenis Trade Name	PERGASOL C BLUE 67 L	PERGASOL C BLUE 77 LS, 77 L
Pre 58 or FDA <sup>1</sup>	No	No
Ionic Charge	Cationic	Cationic
#/Gal	9.93	9.01
pH	~3.5	~2.5
Viscosity (cps)	20-400	20-1000
Two-Sidedness	Top	Top
Lightfastness	Good	Good
Bleachability	Fair	Very Good
Water Bleed	Negligible	Negligible

## Direct Dyes

(40 lbs / ton)



Solenis Trade Name	PERGASOL RED 53 L NA	PERGASOL RED 3BA Powder	PERGASOL VIOLET BN-Z LIQ.	PERGASOL BLUE PTD-N LIQ.	PERGASOL BLUE 31 L NA	PERGASOL BLUE PR 377 L	PERGASOL BLUE 2R-Z LIQ.	PERGASOL BLUE R LIQ.
Pre 58 or FDA <sup>1</sup>	No	No	Yes	Yes	No	Yes	No	No
Ionic Charge	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic	Anionic
#/Gal	8.84	n/a	9.18	9.00	9.51	8.76	9.18	9.18
pH	~7.0	n/a	~7.0	~8.0	~7.5	~9.5	~8.0	~8.5
Viscosity (cps)	10-50	n/a	20-100	20-200	10-200	20-200	20-200	10-200
Two-Sidedness	Even	Bottom	Even - Top	Top	Top	Top	Top	Even
Lightfastness	Good	Fair	Fair	Fair	Fair	Good	Good	Fair
Bleachability	Very Good	Fair	Good	Good	Excellent	Fair	Very Good	Very Good
Water Bleed	Trace	Negligible	Slight	Slight	Slight	Trace	Slight	Slight



Solenis Trade Name	PERGASOL BLUE 47 L	PERGASOL BLUE 79 L	PERGASOL TURQUOISE R LIQ.	PERGASOL BLACK PR 391 L	PERGASOL BLACK CF LIQ.
Pre 58 or FDA <sup>1</sup>	No	No	No	Yes	Yes
Ionic Charge	Anionic	Anionic	Anionic	Anionic	Anionic
#/Gal	9.18	8.76	9.20	8.92	8.84
pH	~10.0	~8.0	~7.5	~8.0	~8.0
Viscosity (cps)	10-200	10-200	20-100	20-300	20-300
Two-Sidedness	Top	Top	Top	Slightly Top	Slightly Top
Lightfastness	Fair	Very Good	Very Good	Good	Good
Bleachability	Good	Good	Good	Fair	Fair
Water Bleed	Slight	Moderate	Moderate	Slight	Slight

## Direct Dyes

(160 lbs / ton)



Solenis Trade Name	PERGASOL BLACK 16 L	PERGASOL BLACK 18 L NA
Pre 58 or FDA <sup>1</sup>	No	No
Ionic Charge	Anionic	Anionic
#/Gal	9.34	9.34
pH	~7.5	~7.5
Viscosity (cps)	20-300	20-300
Two-Sidedness	Top	Top
Lightfastness	Good	Good
Bleachability	Good	Good
Water Bleed	Moderate	Moderate

## Acid Dyes

(1 lb / 10 gallon)



Solenis Trade Name	ANTHOSIN ORANGE 35 L NA
Pre 58 or FDA <sup>1</sup>	Yes
Ionic Charge	Anionic
#/Gal	9.84
pH	~8.0
Viscosity (cps)	20-200
Two-Sidedness	Top
Lightfastness	Very Good
Bleachability	Excellent
Water Bleed	Slight

### Standard Package Types

Totes: 998 kg (2200 lbs.) | Drums Dyes: 227 kg TH (500 lbs.) | Drums Pigments: 120 kg OH (265 lbs.)

The Information shown in this shadecard are intended as a guide only and are not to be construed as firm product specs.

<sup>1</sup> Pre-58 or FDA dyestuff applications acceptable for food contact grade papers.