



Effect Pigments and Pellets for Powder Coatings



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Effect Pigments and Pellets for Powder Coatings

Type	Particle Size D50 [µm] approx.	Surface Treatment	Chemical Resistance	Mortar Test	Florida Test	Humidity Test	Min. Ignition Energy	Remark
Special non-leafing Aluminum Pigment Preparations								
PCBF (bonding-free)								
PCBF 5000	50	Sol-Gel Silica and carboxylated polyester binder	++++	+++	+++	++++	No data available*	Silverdollar, recommended for film thickness >60 µm
PCBF 3500	34	Sol-Gel Silica and carboxylated polyester binder	++++	++++	++++	++++	30mj<MIE<100mj	Silverdollar, recommended for film thickness >60 µm
Non-leafing Aluminum Pigments								
PCUpilus (superior)								
PCUpilus 800	8	Sol-Gel Silica and acrylic	++++	+++	+++	++++	1mj<MIE<3mj	Silverdollar
PCU (ultra-stable)								
PCU 5000	51	Sol-Gel Silica and acrylic	++++	+++	+++	++++	No data available*	Silverdollar
PCU 3500	36	Sol-Gel Silica and acrylic	++++	+++	+++	++++	No data available*	Silverdollar
PCU 2000	22	Sol-Gel Silica and acrylic	+++	+++	+++	+++	No data available*	Cornflake
PCU 1500	17	Sol-Gel Silica and acrylic	+++	+++	+++	+++	No data available*	Cornflake
PCU 1000	13	Sol-Gel Silica and acrylic	+++	+++	+++	+++	3mj<MIE<10mj	Cornflake
PCS (high performance)								
PCS 5000	51	Sol-Gel Silica	++	++	+++	+++	100mj<MIE<300mj	Silverdollar
PCS 3500	33	Sol-Gel Silica	++	++	+++	+++	100mj<MIE<300mj	Silverdollar
PCS 2000	20	Sol-Gel Silica	++	+	++	+++	10mj<MIE<30mj	Cornflake
PCS 1500	15	Sol-Gel Silica	++	+	++	+++	3mj<MIE<10mj	Cornflake
PCS 1000	11	Sol-Gel Silica	++	+	++	+++	MIE<3mj	Cornflake
PCS 900	9	Sol-Gel Silica	++	+	++	+++	1mj<MIE<3mj	Silverdollar, excellent hiding
PCS 600	6	Sol-Gel Silica	++	+	++	+++	3mj<MIE<10mj	Silverdollar, excellent hiding
PCR (standard performance)								
PCR 211	67	Silica	+	o	+++	+++	No data available*	Silverdollar
PCR 212	48	Silica	+	o	+++	+++	100mj<MIE<300mj	Silverdollar
PCR 214	31	Silica	+	o	+++	+++	No data available*	Silverdollar
PCR 181	26	Silica	+	o	+	++	No data available*	Silverdollar
PCR 501	19	Silica	+	o	+	++	3mj<MIE<10mj	Cornflake
PCR 801	17	Silica	+	o	+	++	3mj<MIE<10mj	Cornflake
PCR 901	10	Silica	+	o	+	+	MIE<3mj	Cornflake
PCR 1100	8	Silica	+	o	+	+	No data available*	Silverdollar, excellent hiding
PCA (standard performance)								
PCA 212	44	Acrylic	+	o	+++	++	No data available*	Silverdollar
PCA 214	29	Acrylic	+	o	+++	++	No data available*	Silverdollar
PCA 161	21	Acrylic	+	o	++	++	No data available*	Cornflake
PCA 501	19	Acrylic	+	o	+	++	No data available*	Cornflake
PCA 9155	16	Acrylic	+	o	+	++	No data available*	Cornflake
Leafing Aluminum Pigments								
PC (chrome effect)								
PC 20	15	Stearic acid	o	o	o	o	3mj<MIE<10mj	
PC 100	8	Stearic acid	o	o	o	o	1mj<MIE<3mj	
PC 150	6	Stearic acid	o	o	o	o	1mj<MIE<3mj	
PC 200	4	Stearic acid	o	o	o	o	MIE<1mj	
Leafing Aluminum Pellets								
POWDERSAFE (Pellet – dust free)								
02 series provides improved rub resistance vs. 01								
POWDERSAFE 5080-02	55	Sol-Gel Silica and wax	o	o	o	o	not applicable: dust-free pellets	For direct extrusion, e.g. for smooth powder coating
POWDERSAFE 3580-02	35	Sol-Gel Silica and wax	o	o	o	o	not applicable: dust-free pellets	For direct extrusion, e.g. for smooth powder coating
POWDERSAFE 2080-02	21	Sol-Gel Silica and wax	o	o	o	o	not applicable: dust-free pellets	For direct extrusion, e.g. for smooth powder coating
POWDERSAFE 1080-02	10	Sol-Gel Silica and wax	o	o	o	o	not applicable: dust-free pellets	For direct extrusion, e.g. for smooth powder coating
POWDERSAFE 1080-01	21	Sol-Gel Silica and wax	o	o	o	o	not applicable: dust-free pellets	For direct extrusion, e.g. for antique effects
Weather Resistant Synthetic Mica Pearls								
SYMIC PCE								
Particle Size Range [µm] approx.								
SYMIC PCE A001	3 – 21	Chrome free stabilization	++++	+++	+++	++++	-	Silver
SYMIC PCE C001	9 – 44	Chrome free stabilization	++++	+++	+++	++++	-	Silver
SYMIC PCE E001	22 – 120	Chrome free stabilization	++++	+++	+++	++++	-	Silver
SYMIC PCE A393	3 – 21	Chrome free stabilization	++++	No data	++++	++++	-	Gold
SYMIC PCE C393	8 – 47	Chrome free stabilization	++++	++++	++++	++++	-	Gold
SYMIC PCE C522	9 – 44	Chrome free stabilization	++++	++++	++++	++++	-	Copper

Further pigments for the use in powder coatings (but not tested in powder coatings QC)

Type	Particle Size D50 [µm] approx.	Surface Treatment	Chemical Resistance	Mortar Test	Florida Test	Humidity Test	Min. Ignition Energy	Remark
Non-leafing Gold Bronze Pigments								
STANDARD® Resist (standard performance)								
Resist LT	39	Silica	o	o	o	o	No data available*	Copper, Pale Gold, Rich Pale Gold, Rich Gold
Resist CT	27	Silica	o	o	o	o	No data available*	Copper, Pale Gold, Rich Pale Gold, Rich Gold
Resist AT	14	Silica	o	o	o	o	No data available*	Copper, Pale Gold, Rich Pale Gold, Rich Gold
Resist Rotoflex Brilliant	8	Silica	o	o	o	o	No data available*	Pale Gold, Rich Pale Gold, Rich Gold
Stable non-leafing Stainless Steel Flakes								
STAY STEEL								
LN 35	35	-	+++	+++	+++	+++	No data available*	Ni content <0,1%
LN 25	23	-	+++	+++	+++	+++	No data available*	Ni content <0,1%
Glass Pearl Pigments								
LUXAN								
Particle Size Range [µm] approx.								
LUXAN C001 Silver	15 – 60		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN C241 Interference Red	15 – 60		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN C261 Interference Blue	15 – 60		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN C393 Combination Gold	15 – 60		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN D001 Silver	20 – 100		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN D393 Combination Gold	20 – 100		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN D502 Bronze	20 – 100		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN D512 Champagne	20 – 100		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN D522 Copper	20 – 100		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN D542 Fire Red	20 – 100		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN E001 Silver	35 – 150		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN E221 Interference Gold	35 – 150		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN E241 Interference Red	35 – 150		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN E261 Interference Blue	35 – 150		+++	+++	No data	+++	-	Possible for direct extrusion
LUXAN F001 Silver	80 – 450		+++	+++	No data	+++	-	Possible for direct extrusion, not recommended for Dry-Blend or Bonding

Explosion data of basic powder coatings and the most important effect pigments

Solid powder (for mixture of solid powders)	Lower explosion limit g/m ³	Ignition temperature °C	Minimum ignition energy mJ	
			< 10	> 30
Powder Coating	30	450	< 10	-
Aluminum pigment powder **	30	650	< 1 **	-
Gold bronze pigment powder	750	390	-	> 30
Pearlescent effect pigment powder	-	-	-	-

Important: Test results can differ depending on binder system, effect pigment load and processing parameters

* No data available; please see left chart for your reference

** Values depend on the particle size:

The minimum ignition energy may fall below 1mj when aluminum pigment particles are very small (D50 < 10 µm), whereas coarse aluminum pigment grades (D50 > 50 µm) partly exhibit minimum ignition energy of more than 200 mJ.

Rating: + + + + + superior
+ + + excellent
+ + very good
+ good (for exterior application and whenever chemical resistance of the finished powder coat is required, a protective clear coat is necessary to protect the metallic finish from unwanted corrosion process)
o fair (for exterior application and whenever chemical resistance of the finished powder coat is required, a protective clear coat is necessary to protect the metallic finish from unwanted corrosion process)