



Effect Pigments and Pellets for Powder Coatings

## 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
<b>Special non-leafing Aluminum Pigment Preparations</b>								
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
<b>Non-leafing Aluminum Pigments</b>								
PCUplus (superior)								
PCUplus 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	34	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	o	+	3mJ<MIE<10mJ	Cornflake
PCR 901	10	Silica	+	o	o	+	MIE<3mJ	Cornflake
PCR 1100	8	Silica	+	o	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
<b>Leafing Aluminum Pigments</b>								
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	
<b>Leafing Aluminum Pellets</b>								
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
<b>Weather Resistant Synthetic Mica Pearls</b>								
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
<b>Non-leafing Gold Bronze Pigments</b>								
STANDART® 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 Brillant	8	Silica	o	o	o	o	No data available*	Pale Gold, Rich Pale Gold, Rich Gold
<b>Stable non-leafing Stainless Steel Flakes</b>								
STAY STEEL								
LN 35	35	–	+++	+++	+++	+++	No data available*	Ni content <0,1%
LN 25	23	–	+++	+++	+++	+++	No data available*	Ni content <0,1%
<b>Glass Pearl Pigments</b>								
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 (or mixture of solid powders)	Lower explosion limit g/m <sup>3</sup>	Ignition temperature °C	Minimum ignition energy mJ
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)



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