ENGINEERED CARBONS

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OEC-3065-R1/8-2012

Carbon Black Pigments

Technical Data / Americas

ENGINEERED CARBONS

Forward

Orion Engineered Carbons and its predecessors have been producing carbon black pigments since 1935 to meet the most demanding high-performance applications in rubber, coatings, printing inks and polymer systems. We are your single source for the broadest range of carbon blacks anywhere.

Table 1

Analytical Test Methods

Test Method	ISO	DIN	ASTM
	International Organization for Standardization	German Institute for Standardization	American Society for Testing and Materials
Method for Determining the Surface Area			
BET Surface Area	ISO 4652	—	D 6556
Iodine Adsorption	ISO 1304	DIN 53582	D 1510
Method for Determining the Structure			
Oil Adsorption Number (OAN)	ISO 4656	—	D 2414
Method for Characterizing the Carbon Black Pigment Surface			
Volatile Matter at 950 °C	—	DIN 53552	—
pH Value	ISO 787-9	—	D 1512
Colorimetric Properties			
Tint Strength of Carbon Black	ISO 5435	—	D 3265

Methods are not strictly equivalent

Nomenclature

HCG
High Color Gas
MCG
Medium Color Gas
RCG
Regular Color Gas
(Degussa Gas Black Process)
HCF
High Color Furnace
MCF
Medium Color Furnace
RCF
Regular Color Furnace
LCF
Low Color Furnace
LB
Lamp Black
CF
Conductive Furnace
ECB
Extra Conductive Black
TB
Thermal Black

Orion Carbon Black Pigments

Product	Type	DIMENSION	Relative Tint Strength IRB 3 = 100% (%) ASTM D 3265	Volatile Matter at 950 °C (%) DIN 53552	Oil Absorption Number (OAN) ASTM D 2414 cc/100g	ph Value ISO 787-9	BET (NSA) Surface Area ASTM D 6556 m^2/g	Average Primary Particle Size (nm) ASTM D 3849
COLOUR BLACK FW 171*	HCF	137	3.0	106	8.0	650	11
COLOUR BLACK FW 285*	HCG	116	5.0	175	3.5	350	11
COLOUR BLACK FW 1*	HCG	120	5.0	150	3.5	320	13
COLOUR BLACK FW 2*	HCG	114	16.5	155	2.5	350	13
COLOUR BLACK FW 200*	HCG	112	20.0	160	2.5	550	13
NIPex® 90	HCF	–	1.0	95	9.0	300	14
PRINTEX® 90	HCF	155	1.0	95	9.0	300	14
COLOUR BLACK FW 18*	HCG	142	5.0	115	4.5	260	15
COLOUR BLACK FW 182*	HCG	125	20.0	142	2.5	550	15
NIPex® 180 IQ*	HCG	122	5.0	140	4.0	260	15
PRINTEX® 95	HCF	118	1.0	52	9.5	250	15
AROSPERSE® 19	MCF	146	1.0	80	–	285	16
HI-BLACK® 600	MCF	148	1.5	72	8.0	235	16
PRINTEX® 85	MCF	136	1.2	54	9.5	200	16
PRINTEX® F 80†	MCF	150	1.2	100	9.0	220	16
PRINTEX® F 85†	MCF	145	1.2	46	9.5	200	16
NIPex® 170 IQ*	MCG	122	5.0	135	4.0	200	17
SPECIAL BLACK 6*	RCG	116	18.0	170	2.5	300	17
HI-BLACK® 50	MCF	145	1.5	55	8.0	188	18
NIPex® 70	RCF	–	1.2	123	9.5	265	18
PRINTEX® L6	RCF	120	1.2	123	9.0	250	18
AROSPERSE® 11	RCF	120	1.0	114	–	120	19
AROSPERSE® F 138†	RCF	120	1.0	95	–	120	19
NIPex® 160 IQ*	MCG	121	5.0	128	4.0	180	20
PRINTEX® F alpha†	RCF	103	0.5	100	8.7	105	20
PRINTEX® F P†	RCF	109	0.5	102	10	120	20
PRINTEX® HV	RCF	98	0.7	115	9.0	125	20
SPECIAL BLACK 5*	RCG	115	15.0	130	2.5	240	20
NIPex® 60	RCF	–	1.0	114	10.0	115	21
PRINTEX® 260	RCF	130	1.2	61	9.5	100	21
PRINTEX® 60	RCF	115	1.0	110	10.0	115	21
PRINTEX® 60A	RCF	109	0.5	102	10.0	115	21
NEROX® 600*	RCF	130	3.0	100	2.5	130	22
NEROX® 605*	RCF	140	3.0	56	2.5	125	22
HI-BLACK® 40B2	CF	105	1.5	150	8.0	125	23
NEROX® 500*	RCF	117	3.0	110	2.5	114	23
PRINTEX® L	RCF	103	0.8	120	9.0	150	23
NEROX® 505*	RCF	134	3.0	58	2.5	114	24
HI-BLACK® 420B	CF	95	1.5	153	8.0	85	25
NIPex® 150*	RCG	109	10.0	120	4.0	175	25

* Oxidized
† Compliant with FDA 21 CFR § 178.3297

Recommended for Polymer Applications

Product	Adhesives and Sealants	Conductive	Engineering Resins	FDA Compliant	Fiber	Film	Geomembranes	Pipes	Polar Resins	Tinting	Utility Applications	Wire and Cable
COLOUR BLACK FW 171*			●						●			
COLOUR BLACK FW 285*												
COLOUR BLACK FW 1*												
COLOUR BLACK FW 2*	■											
COLOUR BLACK FW 200*			●						●			
NIPex® 90												
PRINTEX® 90			●									
COLOUR BLACK FW 18*			●						●			
COLOUR BLACK FW 182*												
NIPex® 180 IQ*												
PRINTEX® 95			●									
AROSPERSE® 19			●									
HI-BLACK® 600			●									
PRINTEX® 85			●									
PRINTEX® F 80†			●	●								
PRINTEX® F 85†			●	●								
NIPex® 170 IQ*												
SPECIAL BLACK 6*			◔						◔			
HI-BLACK® 50			●									
NIPex® 70												
PRINTEX® L6		Ⓒ	◔Ⓒ		◔	○						Ⓒ
AROSPERSE® 11	■				◔	○		○				Ⓒ○
AROSPERSE® F 138†				F						●		
NIPex® 160 IQ*												
PRINTEX® F alpha†				F								
PRINTEX® F P†				F								
PRINTEX® HV		Ⓒ										Ⓒ
SPECIAL BLACK 5*			◔						◔			
NIPex® 60												
PRINTEX® 260			◔									
PRINTEX® 60	■					○						○
PRINTEX® 60A	■					○		○				○
NEROX® 600*			◔						◔			
NEROX® 605*			◔						◔			
HI-BLACK® 40B2		Ⓒ	Ⓒ									
NEROX® 500*			◔						◔			
PRINTEX® L		Ⓒ	◔Ⓒ		◔	○						
NEROX® 505*			◔						◔			
HI-BLACK® 420B		Ⓒ	Ⓒ									Ⓒ
NIPex® 150*												

Recommended for Coating Applications

Product	Automotive Coatings	Industrial Coatings	Decorative Coatings	FDA Compliant	Powder Coatings	Metallic Coatings	Electro Deposition Coatings	Anti-Static and Conductive Coatings
COLOUR BLACK FW 171*	Ⓦ	Ⓦ			◒	Ⓦ		
COLOUR BLACK FW 285*	Ⓦ					Ⓦ		
COLOUR BLACK FW 1*		Ⓦ						
COLOUR BLACK FW 2*	◒	◒				◒		
COLOUR BLACK FW 200*	◒	◒			◒	◒		
NIPex® 90								
PRINTEX® 90								
COLOUR BLACK FW 18*								
COLOUR BLACK FW 182*	◒	◒			◒	◒		
NIPex® 180 IQ*								
PRINTEX® 95		◔			◒			
AROSPERSE® 19		⊙			◒			
HI-BLACK® 600								
PRINTEX® 85		◔			◒			
PRINTEX® F 80†				F				
PRINTEX® F 85†				F				
NIPex® 170 IQ*								
SPECIAL BLACK 6*		◔						
HI-BLACK® 50								
NIPex® 70								
PRINTEX® L6						Ⓒ	Ⓒ	
AROSPERSE® 11								
AROSPERSE® F 138†				F				
NIPex® 160 IQ*								
PRINTEX® F alpha†				F				
PRINTEX® F P†				F				
PRINTEX® HV								
SPECIAL BLACK 5*		◔						
NIPex® 60								
PRINTEX® 260		⊙			⊙			
PRINTEX® 60		⊙			⊙			
PRINTEX® 60A								
NEROX® 600*		◔			◔			
NEROX® 605*		◔			◔			
HI-BLACK® 40B2						Ⓒ	Ⓒ	
NEROX® 500*		⊙			⊙			
PRINTEX® L						Ⓒ	Ⓒ	
NEROX® 505*		⊙			⊙			
HI-BLACK® 420B								
NIPex® 150*								

Recommended for Printing Ink and Non-impact Printing Applications

Product	Sheetfed/ Letterpress	Heatset	Coldset	FDA Compliant	Publication Gravure Inks	Liquid Inks (Flexo/ Gravure) Solvent Based	Liquid Inks (Flexo/ Gravure) Water Based	Screen Printing	UV Curing Inks	UV Curing Inkjet Inks	Aqueous Inkjet Inks	Non-aqueous Inkjet Inks	Toner
COLOUR BLACK FW 171*													
COLOUR BLACK FW 285*													
COLOUR BLACK FW 1*													
COLOUR BLACK FW 2*													
COLOUR BLACK FW 200*													
NIPex® 90												●	●
PRINTEX® 90													
COLOUR BLACK FW 18*													
COLOUR BLACK FW 182*													
NIPex® 180 IQ*											●		
PRINTEX® 95													
AROSPERSE® 19							●				●		
HI-BLACK® 600													
PRINTEX® 85													
PRINTEX® F 80†							●						
PRINTEX® F 85†							◒						
NIPex® 170 IQ*											●		
SPECIAL BLACK 6*													
HI-BLACK® 50											●		
NIPex® 70												◒	●
PRINTEX® L6								●					
AROSPERSE® 11													
AROSPERSE® F 138†													
NIPex® 160 IQ*											●		
PRINTEX® F alpha†													
PRINTEX® F P†													
PRINTEX® HV													
SPECIAL BLACK 5*													
NIPex® 60												◒	●
PRINTEX® 260	●	●				◒	●						
PRINTEX® 60							●	●					
PRINTEX® 60A													
NEROX® 600*													
NEROX® 605*													
HI-BLACK® 40B2													
NEROX® 500*													
PRINTEX® L								●					
NEROX® 505*													
HI-BLACK® 420B													
NIPex® 150*												●	●

POLYMER

- Tinting
- High Jetness Coloring
- Regular Color
- Low Color
- Conductivity
- UV Protection
- F FDA Compliant
- ■ Thixotropy

COATINGS

- High Jetness
- Medium Jetness
- Regular Jetness
- Tinting
- Rad Cure
- Ⓦ High Jetness water
- Ⓒ Conductivity
- F FDA Compliant

PRINTING SYSTEMS

- ● Especially Recommended
- ◒ Well Suitable
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Nomenclature

HCG
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Orion Carbon Black Pigments

Recommended for Polymer Applications

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Recommended for Printing Ink and Non-impact Printing Applications

Product	Type	DIMENSION	Relative Tint Strength IRB 3 = 100% (%) ASTM D 3265	Volatile Matter at 950 °C (%) DIN 53552	Oil Absorption Number (OAN) ASTM D 2414 cc/100g	ph Value ISO 787-9	BET (NSA) Surface Area ASTM D 6556 m^2/g	Average Primary Particle Size (nm) ASTM D 3849	Adhesives and Sealants	Conductive	Engineering Resins	FDA Compliant	Fiber	Film	Geomembranes	Pipes	Polar Resins	Tinting	Utility Applications	Wire and Cable	Automotive Coatings	Industrial Coatings	Decorative Coatings	FDA Compliant	Powder Coatings	Metallic Coatings	Electro Deposition Coatings	Anti-Static and Conductive Coatings	Sheetfed/ Letterpress	Heatset	Coldset	FDA Compliant	Publication Gravure Inks	Liquid Inks (Flexo/ Gravure) Solvent Based	Liquid Inks (Flexo/ Gravure) Water Based	Screen Printing	UV Curing Inks	UV Curing Inkjet Inks	Aqueous Inkjet Inks	Non-aqueous Inkjet Inks	Toner
PRINTEX® 55	RCF	130	1.2	46	9.5	100	25			◔				◔				◔		⊙●			⊙●				●							◒							
PRINTEX® U*	RCG	117	5.0	110	4.5	100	25			◔				●						⊙			⊙							◒	●									
SPECIAL BLACK 4*	RCG	105	14.0	100	3.0	180	25			◔								◔		⊙			⊙							●	◒	●	●							
SPECIAL BLACK 4A*	RCG	100	14.0	115	3.0	180	25			◔								◔												●	◒	●								
SPECIAL BLACK 550*	RCF	115	2.5	47	3.7	100	25																							◒				◒	◒					
PRINTEX® 45	RCF	120	0.9	52	9.0	90	26			◔										◔		⊙●			⊙●					●	●				◒					
PRINTEX® 3	RCF	96	0.9	123	9.5	80	27																								◒				●					
PRINTEX® 30	RCF	100	0.7	102	9.5	85	27	■						●						◔		⊙●			⊙●						●				●					
PRINTEX® 300	RCF	111	0.6	72	9.5	77	27			◔							●			◔	◔	⊙●			⊙●					◒	◒	●			◒	●				
PRINTEX® 300HC	RCF	111	1.2	72	9.5	77	27																										●							
PRINTEX® 301	RCF	111	1.2	72	9.5	77	27			◔							●			◔										◒	◒	●			◒	●				
NEROX® 305*	RCF	130	3.0	58	2.5	90	28										◔					⊙●			⊙●											●				
P9650	RCF	109	1.2	70	–	78	28																									◒				●				
AROSPERSE® 3	RCF	103	0.8	102	–	75	29							●	●	●				◔																					
AROSPERSE® 309	RCF	105	1.0	102	–	80	29														●														●						
AROSPERSE® 3SP	RCF	103	1.0	102	–	75	29							●	●	●				◔																					
PRINTEX® 314	RCF	100	1.0	120	9.5	71	30																							◒	◒	●			◒	●				
PRINTEX® XE-2B	ECB	–	–	410	7.8	1100	30		⊘	⊘																		⊘	⊘												
NEROX® 3500*	LCF	104	1.8	50	2.5	64	31																							◒				●			●	◒		
NIPex® 35	LCF	–	0.5	42	9.5	65	31																															●	●	
PRINTEX® 35	LCF	100	0.5	42	9.0	65	31															⊙●			⊙●					●	●			●	●	◒	◒	●		
SPECIAL BLACK 350*	LCF	104	2.2	45	3.5	65	31																							◒					●			●	◒	
PRINTEX® 27	LCF	92	0.7	47	9.5	58	35																							◒	●				●		◒			
PANTHER® 205	LCF	56	0.8	72	9.0	36	40												●	◔		●		●		●														
PRINTEX® A	LCF	70	0.7	118	9.0	45	41																									◒								
AROSPERSE® 5	LCF	59	1.2	121	–	42	42							●	●	●				○																					
AROSPERSE® 5-289	LCF	60	0.2	90	–	39	42									●																								
PRINTEX® 25	LCF	95	0.6	45	9.0	45	47																							◒	●				●		◒	●		
SPECIAL BLACK 250*	LCF	98	2.0	46	3.1	40	47																◔														●	●		●
SPECIAL BLACK 100*	LCF	66	2.2	94	3.3	30	50											○	●			●		●		●														
NEROX® 1000*	LCF	101	2.0	101	2.5	36	51															●	●	●		●														
PRINTEX® G	LCF	70	0.7	90	9.0	30	51											○	●			●	●	●		●														
NEROX® 2500*	LCF	90.5	1.8	54	2.5	51	56																◔									◒				●		●	●		
PRINTEX® 200	LCF	95	0.6	45	9.0	45	56															⊙●			⊙●			⊙												
AROSPERSE® 7	LCF	57	1.2	80	–	32	62							○				●	○																					
PANTHER® 100	LCF	50	0.7	64	9.0	30	62											●				●	●	●		●														
AROSPERSE® 7-256	LCF	50	0.3	65	–	26	85							○				●	○																					
Lamp Black 101	LB	–	–	117	7.5	20	95											●					◔	◔		◔														
AROSPERSE® 15	TB	13	0.2	38	–	9	280											●																					

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