




orion

Delivering sustainable solutions

SPECIALTY CARBON BLACKS

Technical Data Europe



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
Method for determining the structure			
Oil absorption number (OAN)	ISO 4656	–	D 2414
Method for characterizing the specialty carbon black surface			
Volatile matter at 950°C	–	DIN 53552	–
pH value	ISO 787-9	-	D 1512
Method for determining impurities			
Ash content	ISO 1125	-	D 1506
Colorimetric properties			
Blackness value M_y of powder specialty carbon blacks	–	DIN 55979	–
Tint strength of specialty carbon black	ISO 5435	–	D 3265

Methods are not strictly equivalent

ORION SPECIALTY CARBON BLACKS FOR COATINGS

		ORION SPECIALTY CARBON BLACK								TYPICAL COATING APPLICATIONS						
		BLACKNESS VALUE M_y following DIN 55979	RELATIVE TINT STRENGTH IRB 3 = 100% following ASTM D 3265	VOLATILE MATTER at 950 °C following DIN 53552	OIL ABSORPTION NUMBER following ASTM D 2414	pH VALUE following ISO 787-9	ASH CONTENT following ASTM D 1506	BET SURFACE AREA following ASTM D 6556	AVERAGE PRIMARY PARTICLE SIZE following internal method TGZ3	AUTOMOTIVE	INDUSTRIAL	DECORATIVE	POWDER	ELECTRO DEPOSITION	ANTISTATIC / CONDUCTIVE	RADIATION CURING
			%	%	ml/100 g		%	m^2/g	nm							
Type																
COLOUR BLACK FW 310 [1]	HCF	310 [3]	130	12	102	2.5	0.5	600	11	◑	◑					
COLOUR BLACK FW 255	HCF	306 [3]	135	12	108	2.5	0.5	600	11	◑	◑					
COLOUR BLACK FW 171 [1]	HCF	295	137	2	108	8	0.3	600	11	●	●		○			
COLOUR BLACK FW 285 [1]	HCG	291	140	5	155	3.5	0.02	350	11	●	●					
COLOUR BLACK FW 200	HCG	286	128	20	160	2.5	0.02	550	13	●	●					
COLOUR BLACK FW 2	HCG	283	126	16.5	155	2.5	0.02	470	13	●	●					
COLOUR BLACK FW 1	HCG	280	120	5	150	3.5	0.02	320	13		●					
PRINTEX® 95 [2]	HCF	258	136	1	52	9.5	0.80	250	15				○			
PRINTEX® 85	MCF	254	136	1	54	9.5	0.60	200	16				○			
SPECIAL BLACK 6	HCG	275	128	18	142	2.5	0.02	450	17	●	●					
COLOUR BLACK S 170 [1]	MCG	270	122	5	135	4	0.02	230	17		●					
SPECIAL BLACK 5	MCG	269	115	15	125	2.5	0.02	320	20		●					
COLOUR BLACK S 160	MCG	263	121	5	128	4	0.02	180	20		●					
PRINTEX® 60 [1]	RCF	244	110	1	118	10	0.10	115	21		🔥		🔥			
SPECIAL BLACK 4	RCG	244	107	14	115	3	0.02	180	25	◑	◑	◑				
PRINTEX® U / PRINTEX® V [1]	RCG	246	112	5	115	4.5	0.02	92	25	◑	◑	◑				
PRINTEX® 300	RCF	242	108	0.8	68	9.5	0.2	80	27		◑	◑	○			
PRINTEX® 140 U / PRINTEX® 140 V [1]	RCG	242	109	5	115	4.5	0.02	90	29	◑	◑	◑				
PRINTEX® 200 [1] [4]	LCF	230	89	0.6	45	9	0.15	48	47					○		
SPECIAL BLACK 250 [1]	LCF	220	88	1.4	45	3.5	0.3	48	47							○
SPECIAL BLACK 100 [1]	LCF	217	60	1.6	100	3.3	0.10	35	51	◑	◑	◑				○
PRINTEX® G	LCF	223	57	0.7	104	9	0.10	35	51	◑	◑	◑		○		
HIBLACK® 160	LCF	–	60	1.5	85	8.0	0.20	35	55		●					
LAMP BLACK 101	LB	209	26	–	135	8	0.02	29	95	◑	◑	◑		○		
PRINTEX® L	CB	246	103	0.8	120	9	0.10	150	23						○	
PRINTEX® kappa 50	CB	280	139	1.5	175	9	0.07	375	12						○	
PRINTEX® XE2 B [2]	ECB	261	–	–	420	7.8	1.6	1000	30						○	

● Water-borne coatings
● Solvent-borne coatings
◑ Water- and solvent-borne coatings
○ Especially recommended
🔥 Especially for heat resistant coatings

1) Only available as powder
2) Only available as beaded specialty carbon black
3) Measured in 2K-PU solvent-borne system
4) Electrial conductivity of the aqueous extract ≤ 100 µS/cm

Nomenclature

HCG	High color gas	HCF	High color furnace	LCF	Low color furnace
MCG	Medium color gas	MCF	Medium color furnace	LB	Lamp black
RCG	Regular color gas (Degussa gas black process)	RCF	Regular color furnace	ECB	Extra conductive black
				CB	Conductive black

Specific gravity of specialty carbon blacks: 1.7 - 1.9 g/cm³ The data for the beaded material may deviate from the given values.

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
AB
Acetylene black
CB
Conductive black
ECB
Extra conductive black

ORION SPECIALTY CARBON BLACK FOR POLYMERS

		BLACKNESS VALUE M, following DIN 55979	**RELATIVE TINT STRENGTH IRB 3 = 100 %** following ASTM D 3265	**VOLATILE MATTER at 950 °C** following DIN 53552	**OIL ABSORPTION NUMBER** following ASTM D 2414	**pH VALUE** following ISO 787-9	**ASH CONTENT** following ASTM D 1506	**BET SURFACE AREA** following ASTM D 6556	**AVERAGE PRIMARY PARTICLE SIZE** following internal method TGZ3
			%	%	ml/100 g		%	m^2/g	nm
COLOUR BLACK FW 200	HCG	286	128	20	160	2.5	0.02	550	13
COLOUR BLACK FW 1	HCG	280	120	5	150	3.5	0.02	320	13
COLOUR BLACK FW 18	HCG	273	122	5	140	4.5	0.02	260	15
SPECIAL BLACK 4	RCG	244	107	14	115	3	0.02	180	25
PRINTEX® U	RCG	246	112	5	115	4.5	0.02	92	25
PRINTEX® V [1]	RCG	246	112	5	115	4.5	0.02	92	25
PRINTEX® 90	HCF	265	141	1	98	9	0.40	350	14
PRINTEX® chroma 500 [2]	MCF	259	156	1	75	9	0.50	230	15
PRINTEX® 85 [5]	MCF	254	136	1	54	9.5	0.60	200	16
PRINTEX® 80 [5]	MCF	261	136	1.2	105	9	0.10	225	16
PRINTEX® 75	MCF	251	135	1.2	53	9.5	0.40	145	17
PRINTEX® 138 SQ [2]	RCF	243	120	1	95	8.5	0.10	150	19
PRINTEX® alpha, alpha A [2] [5] [6]	RCF	240	103	0.5	100	8.7	0.10	105	20
PRINTEX® P [2] [5]	RCF	245	109	0.5	102	10	0.10	120	20
PRINTEX® 60 [1]	RCF	244	110	1	118	10	0.10	115	21
PRINTEX® 60 A [2]	RCF	244	109	0.5	102	10	0.10	115	21
PRINTEX® zeta A [2]	RCF	239	98	0.5	99	8.7	0.10	79	25
PRINTEX® L6 [6]	RCF	249	114	1.2	126	9	0.10	270	18
PRINTEX® 300	RCF	242	108	0.8	68	9.5	0.2	80	27
PRINTEX® 30 [1]	RCF	240	100	0.7	108	9.5	0.10	80	27
PRINTEX® 3 [1]	RCF	239	96	0.9	128	9.5	0.15	80	27
PRINTEX® 25	LCF	230	89	0.6	45	9	0.30	48	47
PRINTEX® A	LCF	227	65	0.7	121	9	0.10	43	41
PRINTEX® G	LCF	223	57	0.7	104	9	0.10	35	51
SPECIAL BLACK 100 [1]	LCF	217	60	1.6	100	3.3	0.10	35	51
LAMP BLACK 101	LB	209	26	–	135	8	0.02	29	95
CONDUCTIVE BLACK									
PRINTEX® HV [2]	CB	240	98	0.7	115	9	0.10	125	20
PRINTEX® MV [2]	CB	227	60	1	121	8.5	0.10	41	41
PRINTEX® L	CB	246	103	0.8	120	9	0.10	150	23
PRINTEX® kappa 10 [2]	CB	–	89	0.6	145	9	0.01	74	30
PRINTEX® kappa 20 [1]	CB	255	123	1.5	175	9	0.02	230	19
PRINTEX® kappa 60 [2]	CB	–	80	1.2	174	8	0.50	62	34
PRINTEX® kappa 70 [2]	CB	–	85	1.5	170	7.3	0.15	245	19
PRINTEX® kappa 100	AB	–	–	–	265	–	0.001	61	–
PRINTEX® XE2 B [2]	ECB	261	–	–	420	7.8	1.6	1000	30

1) Only available as powder
2) Only available as beaded specialty carbon black
4) Total sulfur content ≤ 0.1 %,
5) Following products, used for food contact applications, which complies 21 CFR 178.3297 (FDA) can be found in a separate brochure:
- PRINTEX® F 85 BEADS
- PRINTEX® F 80 BEADS/POWDER
- PRINTEX® F alpha BEADS
- PRINTEX® F P BEADS

6) Following products, used for spin fibres, can be found in a separate brochure:
- PRINTEX® L 6 SQ only available as beaded specialty carbon black
- PRINTEX® alpha SQ only available as beaded specialty carbon black

SELECTED POLYMERS

	POLYOLEFINES PE, PP, Copo	**BIOPOLYMERS** PLA	**STYRENE POLYMERS** PS, SAN, ABS, ASA	**POLYAMIDES** PA6, PA6.6, PA12	**POLYESTERS** PET, PBT	**POLYVINYLCHLORIDES** PVC-P, PVC-U	**ENGINEERED POLYMERS** PMMA, PC, Blends	**THERMOSETS** UP, EP
COLOUR BLACK FW 200	●		●			●		
COLOUR BLACK FW 1	●		●			●		
COLOUR BLACK FW 18	●		●			●		
SPECIAL BLACK 4			◒					◒◔
PRINTEX® U	◑		◑	◑		◑◔	◑	◑◔
PRINTEX® V [1]	◑		◑	◑		◑◔	◑	◑◔
PRINTEX® 90	●		●	●		●	●	
PRINTEX® chroma 500 [2]	●		●	●			●	
PRINTEX® 85 [5]	●		●	●			●	
PRINTEX® 80 [5]	●		●				●	
PRINTEX® 75	●		●					
PRINTEX® 138 SQ [2]								
PRINTEX® alpha, alpha A [2] [5] [6]	◒◔	◒◔	◒◔	◒◔	◒◔		◒◔	
PRINTEX® P [2] [5]	◒◔		◒◔	◒◔	◒◔		◒◔	◒◔
PRINTEX® 60 [1]						◒◔		
PRINTEX® 60 A [2]	◒◔		◒◔	◒◔	◒◔		◒◔	
PRINTEX® zeta A [2]	◒◔	◒◔	◒◔	◒◔	◒◔		◒◔	
PRINTEX® L6 [6]	⌁		⌁	⌁		⌁	⌁	⌁
PRINTEX® 300	◒	◒	◒	◒		◒		◒◔
PRINTEX® 30 [1]	◒		◒	◒		◒		◒
PRINTEX® 3 [1]								
PRINTEX® 25	◒		◒			◒		◒
PRINTEX® A	◒◑		◒◑			◒		◒
PRINTEX® G	◑		◑	◑	◑	◑	◑	
SPECIAL BLACK 100 [1]						◑		
LAMP BLACK 101	◑	◑	◑	◑	◑	◑	◑	◑
CONDUCTIVE BLACK								
PRINTEX® HV [2]								
PRINTEX® MV [2]								
PRINTEX® L	⌁		⌁	⌁		⌁	⌁	⌁
PRINTEX® kappa 10 [2]								
PRINTEX® kappa 20 [1]						⌁		⌁
PRINTEX® kappa 60 [2]	⌁		⌁	⌁	⌁	⌁	⌁	
PRINTEX® kappa 70 [2]	⌁		⌁	⌁	⌁	⌁	⌁	
PRINTEX® kappa 100	⌁		⌁	⌁	⌁	⌁	⌁	⌁
PRINTEX® XE2 B [2]	⌁			⌁		⌁	⌁	⌁

TYPICAL APPLICATIONS

	INSULATION & FOAMS EPS, PUR, PP, PE	**WIRE & CABLES**	**PIPES** PE, PP, PA, PVC	**FILMS** PE, PP, Copo, PVC	**FIBRES** PET, PA, PP	**ADHESIVE & SEALANTS** PUR, PIB, Polysulfide, Silicons, MS Polymers
COLOUR BLACK FW 200						
COLOUR BLACK FW 1						
COLOUR BLACK FW 18						
SPECIAL BLACK 4				◒◔		
PRINTEX® U						◔⇶
PRINTEX® V [1]						◔⇶
PRINTEX® 90						
PRINTEX® chroma 500 [2]						
PRINTEX® 85 [5]						
PRINTEX® 80 [5]						◔⇶
PRINTEX® 75						
PRINTEX® 138 SQ [2]					●	
PRINTEX® alpha, alpha A [2] [5] [6]		◔	◒◔	◒◔	◒◔	
PRINTEX® P [2] [5]		◔	◒◔	◒◔	◒◔	
PRINTEX® 60 [1]						◔⇶
PRINTEX® 60 A [2]			◔	◒◔	◒◔	
PRINTEX® zeta A [2]		◒◔	◒◔	◒◔	◒◔	
PRINTEX® L6 [6]			⌁		●	
PRINTEX® 300						◒⇶
PRINTEX® 30 [1]						◔⇶
PRINTEX® 3 [1]						◔⇶
PRINTEX® 25	◒					◒
PRINTEX® A	◒					◒
PRINTEX® G						
SPECIAL BLACK 100 [1]						◔
LAMP BLACK 101	◒◑				◑	
CONDUCTIVE BLACK						
PRINTEX® HV [2]		⌁				
PRINTEX® MV [2]		⌁				
PRINTEX® L			⌁			
PRINTEX® kappa 10 [2]		⌁				
PRINTEX® kappa 20 [1]						⌁⇶
PRINTEX® kappa 60 [2]		⌁	⌁	⌁		
PRINTEX® kappa 70 [2]		⌁	⌁	⌁		
PRINTEX® kappa 100		⌁	⌁	⌁		⌁⇶
PRINTEX® XE2 B [2]			⌁	⌁		

● Jet black coloring ◒ Coloring ◑ Tinting ⌁ Conductivity ◔ UV-stabilizing ⇶ Reinforcement / rheology

Nomenclature

HCG
High color gas
MCG
Medium color gas
RCG
Regular color gas
(Degussa gas black process)
HCF
High color furnace
RCF
Regular color furnace
LCF
Low color furnace
CB
Conductive black

ORION SPECIALTY CARBON BLACK FOR PRINTING INKS, INKJET AND TONER APPLICATIONS

		BLACKNESS VALUE M_Y following DIN 55979	**RELATIVE TINT STRENGTH IRB 3 = 100 %** following ASTM D 3265	**VOLATILE MATTER at 950 °C** following DIN 53552	**OIL ABSORPTION NUMBER** following ASTM D 2414	**pH VALUE** following ISO 787-9	**ASH CONTENT** following ASTM D 1506	**BET SURFACE AREA** following ASTM D 6556	**AVERAGE PRIMARY PARTICLE SIZE** following internal method TGZ3
			%	%	ml/100 g		%	m^2/g	nm
Type									
NIPex® 180 IQ [1]	HCG	273	–	5	140	4.5	0.02	260	15
NIPex® 170 IQ [1]	MCG	270	–	5	135	4.5	0.02	238	17
NIPex® 160 IQ [1]	MCG	263	–	5	128	4.5	0.02	180	20
NIPex® 200 IQ [1] [8]	HCG	286	128	20	160	2.3	0.02	570	13
NIPex® 1601 IQ [1] [8] [10]	MCG	263	–	10	128	4	0.02	245	20
NIPex® 150 [10]	RCG	–	–	9	120	4	0.02	175	25
NIPex® 60 [8] [10]	RCF	244	–	1	118	10	0.1	115	21
NIPex® 35 [8] [10]	LCF	236	–	0.5	42	9	0.3	60	31
SPECIAL BLACK 4	RCG	244	107	14	115	3	0.02	180	25
SPECIAL BLACK 4A [1] [7]	RCG	244	107	14	95	3	0.02	180	25
PRINTEX® U	RCG	246	112	5	115	4.5	0.02	92	25
PRINTEX® V [1]	RCG	246	112	5	115	4.5	0.02	92	25
PRINTEX® 85 [5] [8] [10]	MCF	254	136	1	54	9.5	0.6	200	16
PRINTEX® 80 [5] [8]	MCF	261	136	1.2	105	9	0.1	225	16
PRINTEX® L6 [8]	CB	249	114	1.2	126	9	0.1	270	18
PRINTEX® L [8]	CB	246	103	0.8	120	9	0.1	150	23
PRINTEX® 60 [1] [8]	RCF	244	110	1	118	10	0.1	115	21
PRINTEX® 60 A [2] [8]	RCF	244	109	0.5	102	10	0.1	115	21
NEROX® 555 [1] [8]	RCF	–	128	3	75	2.5	0.3	94	26
SPECIAL BLACK 550 [1] [8]	RCF	247	115	1.8	52	4	0.6	112	25
PRINTEX® 55 [8]	RCF	250	127	0.6	49	9.5	0.6	110	25
SPECIAL BLACK 535 [2] [8]	LCF	–	101	1.3	44	3.6	0.3	62	31
PRINTEX® 45 [8]	RCF	246	115	0.9	54	9	0.3	90	26
PRINTEX® 47 A [2]	RCF	248	112	1.0	43	9	0.3	85	26
SPECIAL BLACK 350 [1] [8]	LCF	232	104	1.4	43	3.5	0.3	62	31
NEROX® 3500 [1] [8]	LCF	–	104	1.8	52	2.5	0.3	63	31
PRINTEX® 35 [8]	LCF	236	98	0.5	42	9	0.3	60	31
PRINTEX® 300	RCF	242	107	0.8	68	9.5	0.2	80	27
PRINTEX® 30 [1] [8]	RCF	240	100	0.7	108	9.5	0.1	80	27
PRINTEX® zeta A [2] [8]	RCF	239	98	0.5	99	8.7	0.1	79	25
PRINTEX® 3 [1] [8]	RCF	239	96	0.9	128	9.5	0.15	80	27
SPECIAL BLACK 275 [1] [8]	LCF	224	94	1.4	49	3	0.3	57	35
SPECIAL BLACK 250 [1] [8]	LCF	220	88	1.4	45	3.5	0.3	48	47
NEROX® 2500 [1] [8]	LCF	–	90	1.8	57	2.5	0.3	50	47
PRINTEX® 25 [9]	LCF	230	89	0.6	45	9	0.3	48	47

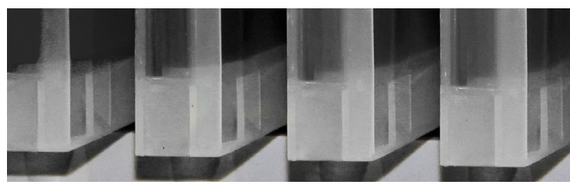
Please contact the address given on the back of this brochure.

1) Only available as powder
2) Only available as beaded specialty carbon black
5) Available as "F grade" which complies with 21 CFR 178.3297 (FDA) (see technical information 1217)
7) Volatile matter 105 °C approx. 7.5 %
8) Recommended for indirect food contact application; more details see technical information TI 1453 and TI 1473
9) As POWDER recommended for indirect food contact application
10) Ames test negative tested

RECOMMENDED FOR PRINTING INKS, INKJET AND TONER APPLICATIONS

SHEETFED/LETTERPRESS	**HEATSET**	**COLDSET**	**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**	**Type**
												Type
									●			NIPex® 180 IQ [1]
									●			NIPex® 170 IQ [1]
									●			NIPex® 160 IQ [1]
									●			NIPex® 200 IQ [1]
									●			NIPex® 1601 IQ [1]
										●	●	NIPex® 150
										◑	●	NIPex® 60
										●	●	NIPex® 35
				●	◑	●	●					SPECIAL BLACK 4
				●	◑	●						SPECIAL BLACK 4A [1] [7]
				◑	●	●						PRINTEX® U
				◑	●	●						PRINTEX® V [1]
									●			PRINTEX® 85
									●			PRINTEX® 80
					●				●		●	PRINTEX® L6
					●						◑	PRINTEX® L
					●	●						PRINTEX® 60 [1]
					●	●						PRINTEX® 60 A [2]
				●			●					NEROX® 555 [1]
◑				◑			◑	◑				SPECIAL BLACK 550 [1]
●					◑							PRINTEX® 55
				●			◑					SPECIAL BLACK 535 [2]
●	●			◑	●							PRINTEX® 45
				●								PRINTEX® 47 A [2]
◑				●			●	◑				SPECIAL BLACK 350 [1]
◑				●			●	◑				NEROX® 3500 [1]
●	●		●	●	◑	◑						PRINTEX® 35
◑	◑	●		◑	●							PRINTEX® 300
		●			●							PRINTEX® 30 [1]
		●			●							PRINTEX® zeta A [2]
		◑			●							PRINTEX® 3 [1]
				●			●	●		●		SPECIAL BLACK 275 [1]
				●			●	●		●		SPECIAL BLACK 250 [1]
				●			●	●				NEROX® 2500 [1]
◑	●		●	●		◑						PRINTEX® 25

● Especially recommended
◑ Well suitable



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Delivering sustainable solutions

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