



## Analytical test methods

| Test method   | ISO  | DIN                                  | ASTM                                       |
|---|--|--------------------------------------|--|
|   | International Organization for Standardization | German Institute for Standardization | American Society for Testing and Materials |
| <b>Method for determining the surface area</b>                      |  |                                      |  |
| BET surface area  | ISO 4652                                       | –                                    | D 6556                                     |
| <b>Method for determining the structure</b>                         |  |                                      |  |
| Oil absorption number (OAN)   | ISO 4656                                       | –                                    | D 2414                                     |
| <b>Method for characterizing the specialty carbon black surface</b> |  |                                      |  |
| Volatile matter at 950°C  | –  | DIN 53552                            | –  |
| pH value  | ISO 787-9                                      | -                                    | D 1512                                     |
| <b>Method for determining impurities</b>                            |  |                                      |  |
| Ash content   | ISO 1125                                       | -                                    | D 1506                                     |
| <b>Colorimetric properties</b>                                      |  |                                      |  |
| Blackness value $M_v$ 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 $M_v$<br>following DIN 55979 | Relative tint strength IRB 3 = 100 %<br>following ASTM D 3265 | Volatile matter at 950 °C<br>following DIN 53552 | Oil absorption number<br>following ASTM D 2414 | pH value<br>following ISO 787-9 | Ash content<br>following ASTM D 1506 | BET surface area<br>following ASTM D 6556 | Average primary particle size<br>following internal method TCGZ3 | Automotive | Industrial | Decorative                   | Powder | Electro deposition | Antistatic / conductive | Radiation curing |   |  |
| Type  |  | %   | %  | ml/100g  |                                 | %                                    | m <sup>2</sup> /g                         | nm   |            |            |                              |        |                    |                         |                  |   |  |
| COLOUR BLACK FW 310 <sup>1)</sup>             | HCF  | 310 <sup>3)</sup>   | 130  | 12   | 102                             | 2.5                                  | 0.5                                       | 600  | 11         | ●          | ●                            |        |                    |                         |                  |   |  |
| COLOUR BLACK FW 255                           | HCF  | 306 <sup>3)</sup>   | 135  | 12   | 108                             | 2.5                                  | 0.5                                       | 600  | 11         | ●          | ●                            |        |                    |                         |                  |   |  |
| COLOUR BLACK FW 171 <sup>1)</sup>             | HCF  | 295   | 137  | 2  | 108                             | 8                                    | 0.3                                       | 600  | 11         | ●          | ●                            |        | ○                  |                         |                  |   |  |
| COLOUR BLACK FW 285 <sup>1)</sup>             | 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 <sup>2)</sup>                     | 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 <sup>1)</sup>              | 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 <sup>1)</sup>                     | 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 <sup>1)</sup>         | 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 <sup>1)</sup> | RCG  | 242   | 109  | 5  | 115                             | 4.5                                  | 0.02                                      | 90   | 29         | ●          | ●                            | ●      |                    |                         |                  |   |  |
| PRINTEX® 200 <sup>1)4)</sup>                  | LCF  | 230   | 89   | 0.6  | 45                              | 9                                    | 0.15                                      | 48   | 47         |            |                              |        |                    | ○                       |                  |   |  |
| SPECIAL BLACK 250 <sup>1)</sup>               | LCF  | 220   | 88   | 1.4  | 45                              | 3.5                                  | 0.3                                       | 48   | 47         |            |                              |        |                    |                         |                  | ○ |  |
| SPECIAL BLACK 100 <sup>1)</sup>               | 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         |            |                              |        |                    |                         | ○                |   |  |
| XPB 545                                       | CB   | 280   | 139  | 1.5  | 175                             | 9                                    | 0.07                                      | 375  | 12         |            |                              |        |                    |                         | ○                |   |  |
| PRINTEX® XE2 B <sup>2)</sup>                  | 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

### 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<br>(Degussa gas black process) | RCF Regular color furnace | ECB Extra conductive black |
|  |                           | CB Conductive black        |

1) Only available as powder

2) Only available as beaded specialty carbon black

3) Measured in 2K-PU solvent-borne system

4) Electrical conductivity of the aqueous extract  $\leq 100 \mu\text{S}/\text{cm}$

Specific gravity of specialty carbon blacks: 1.7 - 1.9 g/cm<sup>3</sup>

The data for the beaded material may deviate from the given values.



## Orion specialty carbon black for polymers

|   |     | Blackness value $M_v$<br>following DIN 55979 | Relative tint strength IRB 3 =<br>100%<br>following ASTM D 3265 | Volatile matter at 950 °C<br>following DIN 53552 | Oil absorption number<br>following ASTM D 2414 | pH value<br>following ISO 787-9 | Ash content<br>following ASTM D 1506 | BET surface area<br>following ASTM D 6556 | Average primary particle size<br>following internal method TGZ3 |
|---|-----|--|---|--|--|---------------------------------|--------------------------------------|---|---|
|   |     |  | %   | %  | ml/100g  |                                 | %                                    | m <sup>2</sup> /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 <sup>1)</sup>                    | RCG | 246  | 112   | 5  | 115  | 4.5                             | 0.02                                 | 92  | 25  |
| PRINTEX® 95 <sup>2)</sup>                   | HCF | 258  | 136   | 1  | 52   | 9.5                             | 0.80                                 | 250                                       | 15  |
| PRINTEX® 90                                 | HCF | 265  | 141   | 1  | 98   | 9                               | 0.40                                 | 350                                       | 14  |
| PRINTEX® 85 <sup>5)</sup>                   | MCF | 254  | 136   | 1  | 54   | 9.5                             | 0.60                                 | 200                                       | 16  |
| HIBLACK® 600L                               | MCF | 260  | 157   | 1.5  | 77   | 8                               | 0.50                                 | 246                                       | 16  |
| PRINTEX® 80 <sup>5)</sup>                   | 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 <sup>2)</sup>               | RCF | 243  | 120   | 1  | 95   | 8.5                             | 0.10                                 | 150                                       | 19  |
| PRINTEX® alpha, alpha A <sup>2) 5) 6)</sup> | RCF | 240  | 103   | 0.5  | 100  | 8.7                             | 0.10                                 | 105                                       | 20  |
| PRINTEX® P <sup>2) 5)</sup>                 | RCF | 245  | 109   | 0.5  | 102  | 10                              | 0.10                                 | 120                                       | 20  |
| PRINTEX® 60 <sup>1)</sup>                   | RCF | 244  | 110   | 1  | 118  | 10                              | 0.10                                 | 115                                       | 21  |
| PRINTEX® 60 A <sup>2)</sup>                 | RCF | 244  | 109   | 0.5  | 102  | 10                              | 0.10                                 | 115                                       | 21  |
| PRINTEX® zeta A <sup>2)</sup>               | RCF | 239  | 98  | 0.5  | 99   | 8.7                             | 0.10                                 | 79  | 25  |
| PRINTEX® L6 <sup>6)</sup>                   | 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 <sup>1)</sup>                   | RCF | 240  | 100   | 0.7  | 108  | 9.5                             | 0.10                                 | 80  | 27  |
| PRINTEX® 3 <sup>1)</sup>                    | 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 <sup>1)</sup>             | LCF | 217  | 60  | 1.6  | 100  | 3.3                             | 0.10                                 | 35  | 51  |
| LAMP BLACK 101                              | LB  | 209  | 26  | –  | 135  | 8                               | 0.02                                 | 29  | 95  |
| <b>Conductive black</b>                     |     |  |   |  |  |                                 |                                      |   |   |
| PRINTEX® HV <sup>2)</sup>                   | CB  | 240  | 98  | 0.7  | 115  | 9                               | 0.10                                 | 125                                       | 20  |
| PRINTEX® MV <sup>2)</sup>                   | CB  | 227  | 60  | 1  | 121  | 8.5                             | 0.10                                 | 41  | 41  |
| PRINTEX® L                                  | CB  | 246  | 103   | 0.8  | 120  | 9                               | 0.10                                 | 150                                       | 23  |
| HIBLACK® 40B2 <sup>2)</sup>                 | CB  | –  | 105   | 1.5  | 150  | 8                               | 0.20                                 | 112                                       | 23  |
| PRINTEX® kappa 10 <sup>2)</sup>             | CB  | –  | 89  | 0.6  | 145  | 9                               | 0.02                                 | 74  | 30  |
| PRINTEX® kappa 20 <sup>1)</sup>             | CB  | 255  | 123   | 1.5  | 175  | 9                               | 0.02                                 | 230                                       | 19  |
| PRINTEX® kappa 70 <sup>2)</sup>             | CB  | –  | 85  | 1.5  | 170  | 7.3                             | 0.15                                 | 245                                       | 19  |
| PRINTEX® XE2 B <sup>2)</sup>                | ECB | 261  | –   | –  | 420  | 7.8                             | 1.6                                  | 1000                                      | 30  |

### 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

#### TB

Thermal black

#### CB

Conductive black

#### ECB

Extra conductive black

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            |                    |                                       |                                |                        |                                    |   |                      | Typical applications                   |                          |                          |                            |                       |  |   |  |
|------------------------------|--------------------|---------------------------------------|--------------------------------|------------------------|------------------------------------|---|----------------------|--|--------------------------|--------------------------|----------------------------|-----------------------|--|---|--|
| Polyolefines<br>PE, PP, Copo | Biopolymers<br>PLA | Styrene Polymers<br>PS, SAN, ABS, ASA | Polyamides<br>PA6, PA6.6, PA12 | Polyesters<br>PET, PBT | Polyvinylchlorides<br>PVC-P, PVC-U | Engineered Polymers<br>PMMA, PC, Blends | Thermosets<br>UP, EP | Insulation & foams<br>EPS, PUR, PP, PE | Wire & cables<br>PE-Copo | Pipes<br>PE, PP, PA, PVC | Films<br>PE, PP, Copo, PVC | Fibres<br>PET, PA, PP | Adhesive & sealants<br>PUR, PIB, Polysulfide,<br>Silicons, MS Polymers | Masterbatches &<br>compounds                |  |
|                              |                    | ●                                     |                                |                        | ●                                  |   |                      |  |                          |                          |                            |                       |  | COLOUR BLACK FW 200                         |  |
| ●                            |                    | ●                                     |                                |                        | ●                                  |   |                      |  |                          |                          |                            |                       |  | COLOUR BLACK FW 1                           |  |
| ●                            |                    | ●                                     |                                |                        | ●                                  |   |                      |  |                          |                          |                            |                       |  | COLOUR BLACK FW 18                          |  |
|                              |                    | ◐                                     |                                |                        |                                    |   | ◐◑                   |  |                          |                          | ◐◑                         |                       |  | SPECIAL BLACK 4                             |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐◑                                 | ◐                                       | ◐◑                   |  |                          |                          |                            | ◐◑                    |  | PRINTEX® U                                  |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐◑                                 | ◐                                       | ◐◑                   |  |                          |                          |                            | ◐◑                    |  | PRINTEX® V <sup>1)</sup>                    |  |
| ●                            |                    | ●                                     | ●                              |                        |                                    |   |                      |  |                          |                          |                            |                       |  | PRINTEX® 95 <sup>2)</sup>                   |  |
| ●                            |                    | ●                                     | ●                              |                        | ●                                  | ●                                       |                      |  |                          |                          |                            |                       |  | PRINTEX® 90                                 |  |
| ●                            |                    | ●                                     | ●                              |                        |                                    | ●                                       |                      |  |                          |                          |                            |                       | ●  | PRINTEX® 85 <sup>5)</sup>                   |  |
| ●                            |                    | ●                                     |                                |                        |                                    | ●                                       |                      |  |                          |                          |                            |                       | ●  | HIBLACK® 600L                               |  |
| ●                            |                    | ●                                     |                                |                        |                                    |   |                      |  |                          |                          |                            | ◐◑                    | ●  | PRINTEX® 80 <sup>5)</sup>                   |  |
| ●                            |                    | ●                                     |                                |                        |                                    |   |                      |  |                          |                          |                            |                       | ●  | PRINTEX® 75                                 |  |
|                              |                    |                                       |                                |                        |                                    |   |                      |  |                          |                          |                            | ●                     |  | PRINTEX® 138 SQ <sup>2)</sup>               |  |
| ◐◑                           | ◐◑                 | ◐◑                                    | ◐◑                             | ◐◑                     |                                    | ◐◑                                      |                      | ◐◑                                     | ◐◑                       | ◐◑                       | ◐◑                         |                       | ◐◑   | PRINTEX® alpha, alpha A <sup>2) 5) 6)</sup> |  |
| ◐◑                           |                    | ◐◑                                    | ◐◑                             | ◐◑                     |                                    | ◐◑                                      | ◐◑                   | ◐                                      | ◐◑                       | ◐◑                       | ◐◑                         |                       | ◐◑   | PRINTEX® P <sup>2) 5)</sup>                 |  |
|                              |                    |                                       |                                |                        | ◐◑                                 |   |                      |  |                          |                          |                            | ◐◑                    |  | PRINTEX® 60 <sup>1)</sup>                   |  |
| ◐◑                           |                    | ◐◑                                    | ◐◑                             | ◐◑                     |                                    | ◐◑                                      |                      |  | ◐                        | ◐◑                       | ◐◑                         |                       | ◐◑   | PRINTEX® 60 A <sup>2)</sup>                 |  |
| ◐◑                           | ◐◑                 | ◐◑                                    | ◐◑                             | ◐◑                     |                                    | ◐◑                                      |                      | ◐◑                                     | ◐◑                       | ◐◑                       | ◐◑                         |                       | ◐◑   | PRINTEX® zeta A <sup>2)</sup>               |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐                                  | ◐                                       | ◐                    |  | ◐                        |                          |                            | ●                     |  | PRINTEX® L6 <sup>6)</sup>                   |  |
| ◐                            | ◐                  | ◐                                     | ◐                              |                        | ◐                                  |   | ◐◑                   |  |                          |                          |                            | ◐◑                    | ◐  | PRINTEX® 300                                |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐                                  |   |                      |  |                          |                          |                            | ◐◑                    | ◐  | PRINTEX® 30 <sup>1)</sup>                   |  |
|                              |                    |                                       |                                |                        |                                    |   |                      |  |                          |                          |                            | ◐◑                    | ◐  | PRINTEX® 3 <sup>1)</sup>                    |  |
| ◐                            |                    | ◐                                     |                                |                        | ◐                                  |   |                      | ◐                                      |                          |                          |                            | ◐                     |  | PRINTEX® 25                                 |  |
| ◐◐                           |                    | ◐◐                                    |                                |                        | ◐                                  |   |                      | ◐                                      |                          |                          |                            | ◐                     |  | PRINTEX® A                                  |  |
| ◐                            |                    | ◐                                     | ◐                              | ◐                      | ◐                                  | ◐                                       |                      |  |                          |                          |                            |                       | ◐  | PRINTEX® G                                  |  |
|                              |                    |                                       |                                |                        | ◐                                  |   |                      |  |                          |                          |                            | ◐                     |  | SPECIAL BLACK 100 <sup>1)</sup>             |  |
| ◐                            | ◐                  | ◐                                     | ◐                              | ◐                      | ◐                                  | ◐                                       | ◐                    | ◐◐                                     |                          |                          |                            | ◐                     | ◐  | LAMP BLACK 101                              |  |
|                              |                    |                                       |                                |                        |                                    |   |                      |  |                          |                          |                            |                       |  | <b>Conductive black</b>                     |  |
|                              |                    |                                       |                                |                        |                                    |   |                      | ◐                                      |                          |                          |                            |                       |  | PRINTEX® HV <sup>2)</sup>                   |  |
|                              |                    |                                       |                                |                        |                                    |   |                      | ◐                                      |                          |                          |                            |                       |  | PRINTEX® MV <sup>2)</sup>                   |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐                                  | ◐                                       | ◐                    |  | ◐                        |                          |                            |                       |  | PRINTEX® L                                  |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐                                  | ◐                                       | ◐                    |  | ◐                        |                          |                            |                       | ◐  | HIBLACK® 40B2 <sup>2)</sup>                 |  |
|                              |                    |                                       |                                |                        |                                    |   |                      | ◐                                      |                          |                          |                            |                       |  | PRINTEX® kappa 10 <sup>2)</sup>             |  |
|                              |                    |                                       |                                |                        | ◐                                  |   | ◐                    |  |                          |                          |                            | ◐◑                    |  | PRINTEX® kappa 20 <sup>1)</sup>             |  |
| ◐                            |                    | ◐                                     | ◐                              | ◐                      | ◐                                  | ◐                                       |                      |  | ◐                        | ◐                        |                            |                       |  | PRINTEX® kappa 70 <sup>2)</sup>             |  |
| ◐                            |                    | ◐                                     | ◐                              |                        | ◐                                  | ◐                                       | ◐                    |  | ◐                        | ◐                        |                            |                       | ◐  | PRINTEX® XE2 B <sup>2)</sup>                |  |

● Jet black coloring ◐ Coloring ◑ Tinting ◐ Conductivity ◐ UV-stabilizing ◐ Reinforcement / rheology

## Orion specialty carbon black for printing inks, inkjet and toner applications



|                                  |     | Blackness value $M_v$<br>following DIN 55979 | Relative tint strength<br>IRB 3 = 100 %<br>following ASTM D 3265 | Volatile matter at 950 °C<br>following DIN 53552 | Oil absorption number<br>following ASTM D 2414 | pH value<br>following ISO 787-9 | Ash content<br>following ASTM D 1506 | BET surface area<br>following ASTM D 6556 | Average primary<br>particle size<br>following internal method TGZ3 |  |
|----------------------------------|-----|--|--|--|--|---------------------------------|--------------------------------------|---|--|--|
|                                  |     |  | %  | %  | ml/100g  |                                 | %                                    | m <sup>2</sup> /g                         | nm   |  |
| <b>Type</b>                      |     |  |  |  |  |                                 |                                      |   |  |  |
| NIPex® 180 IQ <sup>1)</sup>      | HCG | 273  | –  | 5  | 140  | 4.5                             | 0.02                                 | 260                                       | 15   |  |
| NIPex® 170 IQ <sup>1)</sup>      | MCG | 270  | –  | 5  | 135  | 4.5                             | 0.02                                 | 238                                       | 17   |  |
| NIPex® 160 IQ <sup>1)</sup>      | MCG | 263  | –  | 5  | 128  | 4.5                             | 0.02                                 | 180                                       | 20   |  |
| NIPex® 1601 IQ <sup>1)</sup>     | MCG | 263  | –  | 10   | 128  | 4                               | 0.02                                 | 245                                       | 20   |  |
| NIPex® 150                       | RCG | –  | –  | 9  | 120  | 4                               | 0.02                                 | 175                                       | 25   |  |
| NIPex® 60                        | RCF | 244  | –  | 1  | 118  | 10                              | 0.1                                  | 115                                       | 21   |  |
| NIPex® 35                        | 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 <sup>1)7)</sup> | 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 <sup>1)</sup>         | RCG | 246  | 112  | 5  | 115  | 4.5                             | 0.02                                 | 92  | 25   |  |
| PRINTEX® 85                      | MCF | 254  | 136  | 1  | 54   | 9.5                             | 0.6                                  | 200                                       | 16   |  |
| PRINTEX® 80                      | MCF | 261  | 136  | 1.2  | 105  | 9                               | 0.1                                  | 225                                       | 16   |  |
| PRINTEX® L6                      | CB  | 249  | 114  | 1.2  | 126  | 9                               | 0.1                                  | 270                                       | 18   |  |
| PRINTEX® L                       | CB  | 246  | 103  | 0.8  | 120  | 9                               | 0.1                                  | 150                                       | 23   |  |
| PRINTEX® 60 <sup>1)</sup>        | RCF | 244  | 110  | 1  | 118  | 10                              | 0.1                                  | 115                                       | 21   |  |
| PRINTEX® 60 A <sup>2)</sup>      | RCF | 244  | 109  | 0.5  | 102  | 10                              | 0.1                                  | 115                                       | 21   |  |
| NEROX® 555 <sup>1)</sup>         | RCF | –  | 128  | 3  | 75   | 2.5                             | 0.3                                  | 94  | 26   |  |
| SPECIAL BLACK 550 <sup>1)</sup>  | RCF | 247  | 115  | 1.8  | 52   | 4                               | 0.6                                  | 112                                       | 25   |  |
| PRINTEX® 55                      | RCF | 250  | 127  | 0.6  | 49   | 9.5                             | 0.6                                  | 110                                       | 25   |  |
| SPECIAL BLACK 535 <sup>2)</sup>  | LCF | –  | 101  | 1.3  | 44   | 3.6                             | 0.3                                  | 62  | 31   |  |
| PRINTEX® 45                      | RCF | 246  | 117  | 0.9  | 54   | 9                               | 0.3                                  | 90  | 26   |  |
| SPECIAL BLACK 350 <sup>1)</sup>  | LCF | 232  | 104  | 1.4  | 43   | 3.5                             | 0.3                                  | 62  | 31   |  |
| NEROX® 3500 <sup>1)</sup>        | LCF | –  | 104  | 1.8  | 52   | 2.5                             | 0.3                                  | 63  | 31   |  |
| PRINTEX® 35                      | LCF | 236  | 100  | 0.5  | 42   | 9                               | 0.3                                  | 60  | 31   |  |
| PRINTEX® 300                     | RCF | 242  | 108  | 0.8  | 68   | 9.5                             | 0.2                                  | 80  | 27   |  |
| PRINTEX® 30 <sup>1)</sup>        | RCF | 240  | 100  | 0.7  | 108  | 9.5                             | 0.1                                  | 80  | 27   |  |
| PRINTEX® zeta A <sup>2)</sup>    | RCF | 239  | 98   | 0.5  | 99   | 8.7                             | 0.1                                  | 79  | 25   |  |
| PRINTEX® 3 <sup>1)</sup>         | RCF | 239  | 96   | 0.9  | 128  | 9.5                             | 0.15                                 | 80  | 27   |  |
| SPECIAL BLACK 275 <sup>1)</sup>  | LCF | 224  | 94   | 1.4  | 49   | 3                               | 0.3                                  | 57  | 35   |  |
| SPECIAL BLACK 250 <sup>1)</sup>  | LCF | 220  | 88   | 1.4  | 45   | 3.5                             | 0.3                                  | 48  | 47   |  |
| NEROX® 2500 <sup>1)</sup>        | LCF | –  | 90   | 1.8  | 54   | 2.5                             | 0.3                                  | 50  | 47   |  |
| PRINTEX® 25                      | LCF | 230  | 89   | 0.6  | 45   | 9                               | 0.3                                  | 48  | 47   |  |

### 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

Products, used for black matrix applications, can be found in a separate brochure.  
Please contact the address given on the back of this brochure.

1) Only available as powder

2) Only available as beaded specialty carbon black

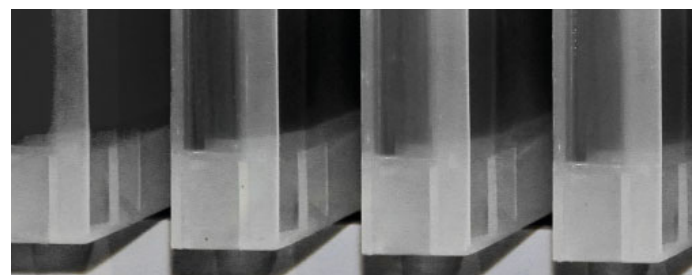
7) Volatile Matter 105 °C approx. 7.5 %



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                             |
|----------------------|---------|---------|--------------------------|---|---|-----------------|----------------|-----------------------|---------------------|-------------------------|-------|----------------------------------|
|                      |         |         |                          |   |   |                 |                |                       | ●                   |                         |       | NIPex® 180 IQ <sup>1)</sup>      |
|                      |         |         |                          |   |   |                 |                |                       | ●                   |                         |       | NIPex® 170 IQ <sup>1)</sup>      |
|                      |         |         |                          |   |   |                 |                |                       | ●                   |                         |       | NIPex® 160 IQ <sup>1)</sup>      |
|                      |         |         |                          |   |   |                 |                |                       | ●                   |                         |       | NIPex® 1601 IQ <sup>1)</sup>     |
|                      |         |         |                          |   |   |                 |                |                       |                     | ●                       | ●     | NIPex® 150                       |
|                      |         |         |                          |   |   |                 |                |                       |                     | ●                       | ●     | NIPex® 60                        |
|                      |         |         |                          |   |   |                 |                |                       |                     | ●                       | ●     | NIPex® 35                        |
|                      |         |         |                          | ●   | ●                                       | ●               | ●              |                       |                     |                         |       | SPECIAL BLACK 4                  |
|                      |         |         |                          | ●   | ●                                       | ●               |                |                       |                     |                         |       | SPECIAL BLACK 4A <sup>1)7)</sup> |
|                      |         |         |                          | ●   | ●                                       | ●               |                |                       |                     |                         |       | PRINTEX® U                       |
|                      |         |         |                          | ●   | ●                                       | ●               |                |                       |                     |                         |       | PRINTEX® V <sup>1)</sup>         |
|                      |         |         |                          |   |   |                 |                |                       | ●                   |                         |       | PRINTEX® 85                      |
|                      |         |         |                          |   |   |                 |                |                       | ●                   |                         |       | PRINTEX® 80                      |
|                      |         |         |                          |   | ●                                       |                 |                |                       | ●                   |                         | ●     | PRINTEX® L6                      |
|                      |         |         |                          |   | ●                                       |                 |                |                       |                     |                         | ●     | PRINTEX® L                       |
|                      |         |         |                          |   | ●                                       | ●               |                |                       |                     |                         |       | PRINTEX® 60 <sup>1)</sup>        |
|                      |         |         |                          |   | ●                                       | ●               |                |                       |                     |                         |       | PRINTEX® 60 A <sup>2)</sup>      |
|                      |         |         |                          | ●   |   |                 | ●              |                       |                     |                         |       | NEROX® 555 <sup>1)</sup>         |
| ●                    |         |         |                          | ●   |   |                 | ●              | ●                     |                     |                         |       | SPECIAL BLACK 550 <sup>1)</sup>  |
| ●                    |         |         |                          |   | ●                                       |                 |                |                       |                     |                         |       | PRINTEX® 55                      |
|                      |         |         |                          | ●   |   |                 | ●              |                       |                     |                         |       | SPECIAL BLACK 535 <sup>2)</sup>  |
| ●                    | ●       |         |                          | ●   | ●                                       |                 |                |                       |                     |                         |       | PRINTEX® 45                      |
| ●                    |         |         |                          | ●   |   |                 | ●              | ●                     |                     |                         |       | SPECIAL BLACK 350 <sup>1)</sup>  |
| ●                    |         |         |                          | ●   |   |                 | ●              | ●                     |                     |                         |       | NEROX® 3500 <sup>1)</sup>        |
| ●                    | ●       |         | ●                        | ●   | ●                                       | ●               |                |                       |                     |                         |       | PRINTEX® 35                      |
| ●                    | ●       | ●       |                          | ●   | ●                                       |                 |                |                       |                     |                         |       | PRINTEX® 300                     |
|                      |         | ●       |                          |   | ●                                       |                 |                |                       |                     |                         |       | PRINTEX® 30 <sup>1)</sup>        |
|                      |         | ●       |                          |   | ●                                       |                 |                |                       |                     |                         |       | PRINTEX® zeta A <sup>2)</sup>    |
|                      |         | ●       |                          |   | ●                                       |                 |                |                       |                     |                         |       | PRINTEX® 3 <sup>1)</sup>         |
|                      |         |         |                          | ●   |   |                 | ●              | ●                     |                     | ●                       |       | SPECIAL BLACK 275 <sup>1)</sup>  |
|                      |         |         |                          | ●   |   |                 | ●              | ●                     |                     | ●                       |       | SPECIAL BLACK 250 <sup>1)</sup>  |
|                      |         |         |                          | ●   |   |                 | ●              | ●                     |                     |                         |       | NEROX® 2500 <sup>1)</sup>        |
| ●                    | ●       |         | ●                        | ●   |   | ●               |                |                       |                     |                         |       | PRINTEX® 25                      |

- Especially recommended
- Well suitable





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