

# 2018 PRODUCT LIST

Columns and Accessories

DAICEL



CHIRALPAK® IG-U

*Amylose tris*  
(3-chloro-5-methylphenylcarbamate)  
Part No. 87U83  
Particle size: 1.6  $\mu\text{m}$   
Internal diameter: 3.0 mm  
Length: 100 mm

  
**CHIRAL**  
TECHNOLOGIES  
DAICEL GROUP

## 2018 Product List

| PART NUMBER   | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE       |
|---|---------------------|--------------------|---------|-------------|--------------------|
| <b>IMMOBILIZED POLYSACCHARIDE CSPs AND COLUMNS*</b> |                     |                    |         |             |                    |
| <b>CHIRALPAK® IA</b>                                |                     |                    |         |             |                    |
| 80020   | CHIRALPAK IA        | 20                 | 1 kg    | –           | Bulk CSP           |
| 80225   | CHIRALPAK IA        | 20                 | 4.6     | 250         | Method Development |
| 80235   | CHIRALPAK IA        | 20                 | 10      | 250         | Semi-Prep          |
| 80242   | CHIRALPAK IA        | 20                 | 21      | 50          | Semi-Prep Guard    |
| 80245   | CHIRALPAK IA        | 20                 | 21      | 250         | Semi-Prep          |
| 80255   | CHIRALPAK IA        | 20                 | 50      | 250         | Preparative        |
| 80256   | CHIRALPAK IA        | 20                 | 50      | 500         | Preparative        |
| 80266   | CHIRALPAK IA        | 20                 | 100     | 500         | Preparative        |
| 80275   | CHIRALPAK IA        | 20                 | 30      | 250         | Semi-Prep          |
| 80935   | CHIRALPAK IA/SFC    | 20                 | 10      | 250         | SFC Semi-Prep      |
| 80945   | CHIRALPAK IA/SFC    | 20                 | 21      | 250         | SFC Semi-Prep      |
| 80955   | CHIRALPAK IA/SFC    | 20                 | 50      | 250         | SFC Preparative    |
| 80975   | CHIRALPAK IA/SFC    | 20                 | 30      | 250         | SFC Semi-Prep      |
| 8000E   | CHIRALPAK IA-10     | 10                 | 1 kg    | –           | Bulk CSP           |
| 80G24   | CHIRALPAK IA-10/SFC | 10                 | 4.6     | 150         | SFC Analytical     |
| 80G25   | CHIRALPAK IA-10/SFC | 10                 | 4.6     | 250         | SFC Analytical     |
| 80G94   | CHIRALPAK IA-10/SFC | 10                 | 2.1     | 150         | SFC Analytical     |
| 80G22   | CHIRALPAK IA-10/SFC | 10                 | 4.6     | 50          | SFC Analytical     |
| 80G35   | CHIRALPAK IA-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep      |
| 80G45   | CHIRALPAK IA-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep      |
| 80G55   | CHIRALPAK IA-10/SFC | 10                 | 50      | 250         | SFC Preparative    |
| 80G75   | CHIRALPAK IA-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep      |
| 80311   | CHIRALPAK IA        | 5                  | 4.0     | 10          | Guard Cartridges   |
| 80324   | CHIRALPAK IA        | 5                  | 4.6     | 150         | Analytical         |
| 80325   | CHIRALPAK IA        | 5                  | 4.6     | 250         | Analytical         |
| 80335   | CHIRALPAK IA        | 5                  | 10      | 250         | Semi-Prep          |
| 80337   | CHIRALPAK IA        | 5                  | 10      | 20          | Semi-Prep Guard    |
| 80345   | CHIRALPAK IA        | 5                  | 20      | 250         | Semi-Prep          |
| 80375   | CHIRALPAK IA        | 5                  | 30      | 250         | Semi-Prep          |
| 80394   | CHIRALPAK IA        | 5                  | 2.1     | 150         | Analytical         |
| 80422   | CHIRALPAK IA/SFC    | 5                  | 4.6     | 50          | SFC Analytical     |
| 80423   | CHIRALPAK IA/SFC    | 5                  | 4.6     | 100         | SFC Analytical     |
| 80435   | CHIRALPAK IA/SFC    | 5                  | 10      | 250         | SFC Semi-Prep      |
| 80445   | CHIRALPAK IA/SFC    | 5                  | 21      | 250         | SFC Semi-Prep      |
| 80455   | CHIRALPAK IA/SFC    | 5                  | 50      | 250         | SFC Preparative    |
| 80475   | CHIRALPAK IA/SFC    | 5                  | 30      | 250         | SFC Semi-Prep      |
| <b>CHIRALPAK® IA-3</b>                              |                     |                    |         |             |                    |
| 80511   | CHIRALPAK IA-3      | 3                  | 4.0     | 10          | Guard Cartridges   |
| 80522   | CHIRALPAK IA-3      | 3                  | 4.6     | 50          | Analytical         |
| 80523   | CHIRALPAK IA-3      | 3                  | 4.6     | 100         | Analytical         |
| 80524   | CHIRALPAK IA-3      | 3                  | 4.6     | 150         | Analytical         |
| 80525   | CHIRALPAK IA-3      | 3                  | 4.6     | 250         | Analytical         |
| 80592   | CHIRALPAK IA-3      | 3                  | 2.1     | 50          | Analytical         |
| 80593   | CHIRALPAK IA-3      | 3                  | 2.1     | 100         | Analytical         |
| 80594   | CHIRALPAK IA-3      | 3                  | 2.1     | 150         | Analytical         |
| 80595   | CHIRALPAK IA-3      | 3                  | 2.1     | 250         | Analytical         |

| PART NUMBER               | PRODUCT NAME       | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE       |
|---------------------------|--------------------|--------------------|---------|-------------|--------------------|
| 80S82                     | CHIRALPAK IA-3/SFC | 3                  | 3.0     | 50          | SFC Analytical     |
| 80S83                     | CHIRALPAK IA-3/SFC | 3                  | 3.0     | 100         | SFC Analytical     |
| 80S84                     | CHIRALPAK IA-3/SFC | 3                  | 3.0     | 150         | SFC Analytical     |
| <b>CHIRALPAK® IA-U</b>    |                    |                    |         |             |                    |
| 80U82                     | CHIRALPAK IA-U     | 1.6                | 3.0     | 50          | Analytical         |
| 80U83                     | CHIRALPAK IA-U     | 1.6                | 3.0     | 100         | Analytical         |
| <b>CHIRALPAK® IB</b>      |                    |                    |         |             |                    |
| 81311                     | CHIRALPAK IB       | 5                  | 4.0     | 10          | Guard Cartridges   |
| 81324                     | CHIRALPAK IB       | 5                  | 4.6     | 150         | Analytical         |
| 81325                     | CHIRALPAK IB       | 5                  | 4.6     | 250         | Analytical         |
| 81335                     | CHIRALPAK IB       | 5                  | 10      | 250         | Semi-Prep          |
| 81337                     | CHIRALPAK IB       | 5                  | 10      | 20          | Semi-Prep Guard    |
| 81345                     | CHIRALPAK IB       | 5                  | 20      | 250         | Semi-Prep          |
| 81375                     | CHIRALPAK IB       | 5                  | 30      | 250         | Semi-Prep          |
| 81394                     | CHIRALPAK IB       | 5                  | 2.1     | 150         | Analytical         |
| 81422                     | CHIRALPAK IB/SFC   | 5                  | 4.6     | 50          | SFC Analytical     |
| 81423                     | CHIRALPAK IB/SFC   | 5                  | 4.6     | 100         | SFC Analytical     |
| 81435                     | CHIRALPAK IB/SFC   | 5                  | 10      | 250         | SFC Semi-Prep      |
| 81445                     | CHIRALPAK IB/SFC   | 5                  | 21      | 250         | SFC Semi-Prep      |
| 81455                     | CHIRALPAK IB/SFC   | 5                  | 50      | 250         | SFC Preparative    |
| 81475                     | CHIRALPAK IB/SFC   | 5                  | 30      | 250         | SFC Semi-Prep      |
| <b>CHIRALPAK® IB-3</b>    |                    |                    |         |             |                    |
| 81511                     | CHIRALPAK IB-3     | 3                  | 4.0     | 10          | Guard Cartridges   |
| 81522                     | CHIRALPAK IB-3     | 3                  | 4.6     | 50          | Analytical         |
| 81523                     | CHIRALPAK IB-3     | 3                  | 4.6     | 100         | Analytical         |
| 81524                     | CHIRALPAK IB-3     | 3                  | 4.6     | 150         | Analytical         |
| 81525                     | CHIRALPAK IB-3     | 3                  | 4.6     | 250         | Analytical         |
| 81592                     | CHIRALPAK IB-3     | 3                  | 2.1     | 50          | Analytical         |
| 81593                     | CHIRALPAK IB-3     | 3                  | 2.1     | 100         | Analytical         |
| 81594                     | CHIRALPAK IB-3     | 3                  | 2.1     | 150         | Analytical         |
| 81595                     | CHIRALPAK IB-3     | 3                  | 2.1     | 250         | Analytical         |
| 81S82                     | CHIRALPAK IB-3/SFC | 3                  | 3.0     | 50          | SFC Analytical     |
| 81S83                     | CHIRALPAK IB-3/SFC | 3                  | 3.0     | 100         | SFC Analytical     |
| 81S84                     | CHIRALPAK IB-3/SFC | 3                  | 3.0     | 150         | SFC Analytical     |
| <b>CHIRALPAK® IB-U</b>    |                    |                    |         |             |                    |
| 81U82                     | CHIRALPAK IB-U     | 1.6                | 3.0     | 50          | Analytical         |
| 81U83                     | CHIRALPAK IB-U     | 1.6                | 3.0     | 100         | Analytical         |
| <b>CHIRALPAK® IB N-20</b> |                    |                    |         |             |                    |
| 88020                     | CHIRALPAK IB N-20  | 20                 | 1 kg    | –           | Bulk CSP           |
| 88225                     | CHIRALPAK IB N-20  | 20                 | 4.6     | 250         | Method Development |
| 88235                     | CHIRALPAK IB N-20  | 20                 | 10      | 250         | Semi-Prep          |
| 88242                     | CHIRALPAK IB N-20  | 20                 | 21      | 50          | Semi-Prep Guard    |
| 88245                     | CHIRALPAK IB N-20  | 20                 | 21      | 250         | Semi-Prep          |
| 88255                     | CHIRALPAK IB N-20  | 20                 | 50      | 250         | Preparative        |
| 88256                     | CHIRALPAK IB N-20  | 20                 | 50      | 500         | Preparative        |

\* Immobilized polysaccharide columns are compatible for use in either normal or reverse phase chromatographic conditions.

\*\* All guard cartridges for immobilized polysaccharide columns require a cartridge holder - part number 00011 (page 14)

| PART NUMBER | PRODUCT NAME          | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|-----------------------|--------------------|---------|-------------|-----------------|
| 88266       | CHIRALPAK IB N-20     | 20                 | 100     | 500         | Preparative     |
| 88275       | CHIRALPAK IB N-20     | 20                 | 30      | 250         | Semi-Prep       |
| 88935       | CHIRALPAK IB N-20/SFC | 20                 | 10      | 250         | SFC Semi-Prep   |
| 88945       | CHIRALPAK IB N-20/SFC | 20                 | 21      | 250         | SFC Semi-Prep   |
| 88955       | CHIRALPAK IB N-20/SFC | 20                 | 50      | 250         | SFC Preparative |
| 88975       | CHIRALPAK IB N-20/SFC | 20                 | 30      | 250         | SFC Semi-Prep   |

**CHIRALPAK® IB N-10**

|       |                       |    |      |     |                 |
|-------|-----------------------|----|------|-----|-----------------|
| 8800E | CHIRALPAK IB N-10     | 10 | 1 kg | -   | Bulk CSP        |
| 88G24 | CHIRALPAK IB N-10/SFC | 10 | 4.6  | 150 | SFC Analytical  |
| 88G25 | CHIRALPAK IB N-10/SFC | 10 | 4.6  | 250 | SFC Analytical  |
| 88G94 | CHIRALPAK IB N-10/SFC | 10 | 2.1  | 150 | SFC Analytical  |
| 88G22 | CHIRALPAK IB N-10/SFC | 10 | 4.6  | 50  | SFC Analytical  |
| 88G35 | CHIRALPAK IB N-10/SFC | 10 | 10   | 250 | SFC Semi-Prep   |
| 88G45 | CHIRALPAK IB N-10/SFC | 10 | 21   | 250 | SFC Semi-Prep   |
| 88G55 | CHIRALPAK IB N-10/SFC | 10 | 50   | 250 | SFC Preparative |
| 88G75 | CHIRALPAK IB N-10/SFC | 10 | 30   | 250 | SFC Semi-Prep   |

**CHIRALPAK® IB N-5**

|       |                      |   |     |     |                  |
|-------|----------------------|---|-----|-----|------------------|
| 88311 | CHIRALPAK IB N-5     | 5 | 4.0 | 10  | Guard Cartridges |
| 88324 | CHIRALPAK IB N-5     | 5 | 4.6 | 150 | Analytical       |
| 88325 | CHIRALPAK IB N-5     | 5 | 4.6 | 250 | Analytical       |
| 88335 | CHIRALPAK IB N-5     | 5 | 10  | 250 | Semi-Prep        |
| 88337 | CHIRALPAK IB N-5     | 5 | 10  | 20  | Semi-Prep Guard  |
| 88345 | CHIRALPAK IB N-5     | 5 | 20  | 250 | Semi-Prep        |
| 88375 | CHIRALPAK IB N-5     | 5 | 30  | 250 | Semi-Prep        |
| 88394 | CHIRALPAK IB N-5     | 5 | 2.1 | 150 | Analytical       |
| 88422 | CHIRALPAK IB N-5/SFC | 5 | 4.6 | 50  | SFC Analytical   |
| 88423 | CHIRALPAK IB N-5/SFC | 5 | 4.6 | 100 | SFC Analytical   |
| 88435 | CHIRALPAK IB N-5/SFC | 5 | 10  | 250 | SFC Semi-Prep    |
| 88445 | CHIRALPAK IB N-5/SFC | 5 | 21  | 250 | SFC Semi-Prep    |
| 88455 | CHIRALPAK IB N-5/SFC | 5 | 50  | 250 | SFC Preparative  |
| 88475 | CHIRALPAK IB N-5/SFC | 5 | 30  | 250 | SFC Semi-Prep    |

**CHIRALPAK® IB N-3**

|       |                  |   |     |     |                  |
|-------|------------------|---|-----|-----|------------------|
| 88511 | CHIRALPAK IB N-3 | 3 | 4.0 | 10  | Guard Cartridges |
| 88522 | CHIRALPAK IB N-3 | 3 | 4.6 | 50  | Analytical       |
| 88523 | CHIRALPAK IB N-3 | 3 | 4.6 | 100 | Analytical       |
| 88524 | CHIRALPAK IB N-3 | 3 | 4.6 | 150 | Analytical       |

| PART NUMBER | PRODUCT NAME         | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE   |
|-------------|----------------------|--------------------|---------|-------------|----------------|
| 88525       | CHIRALPAK IB N-3     | 3                  | 4.6     | 250         | Analytical     |
| 88592       | CHIRALPAK IB N-3     | 3                  | 2.1     | 50          | Analytical     |
| 88593       | CHIRALPAK IB N-3     | 3                  | 2.1     | 100         | Analytical     |
| 88594       | CHIRALPAK IB N-3     | 3                  | 2.1     | 150         | Analytical     |
| 88595       | CHIRALPAK IB N-3     | 3                  | 2.1     | 250         | Analytical     |
| 88S82       | CHIRALPAK IB N-3/SFC | 3                  | 3.0     | 50          | SFC Analytical |
| 88S83       | CHIRALPAK IB N-3/SFC | 3                  | 3.0     | 100         | SFC Analytical |
| 88S84       | CHIRALPAK IB N-3/SFC | 3                  | 3.0     | 150         | SFC Analytical |

**CHIRALCEL® OD-I**

|       |                    |    |      |     |                    |
|-------|--------------------|----|------|-----|--------------------|
| 82020 | CHIRALCEL OD-I     | 20 | 1 kg | -   | Bulk CSP           |
| 82225 | CHIRALCEL OD-I     | 20 | 4.6  | 250 | Method Development |
| 82235 | CHIRALCEL OD-I     | 20 | 10   | 250 | Semi-Prep          |
| 82242 | CHIRALCEL OD-I     | 20 | 21   | 50  | Semi-Prep Guard    |
| 82245 | CHIRALCEL OD-I     | 20 | 21   | 250 | Semi-Prep          |
| 82255 | CHIRALCEL OD-I     | 20 | 50   | 250 | Preparative        |
| 82256 | CHIRALCEL OD-I     | 20 | 50   | 500 | Preparative        |
| 82266 | CHIRALCEL OD-I     | 20 | 100  | 500 | Preparative        |
| 82275 | CHIRALCEL OD-I     | 20 | 30   | 250 | Semi-Prep          |
| 82935 | CHIRALCEL OD-I/SFC | 20 | 10   | 250 | SFC Semi-Prep      |
| 82945 | CHIRALCEL OD-I/SFC | 20 | 21   | 250 | SFC Semi-Prep      |
| 82955 | CHIRALCEL OD-I/SFC | 20 | 50   | 250 | SFC Preparative    |
| 82975 | CHIRALCEL OD-I/SFC | 20 | 30   | 250 | SFC Semi-Prep      |

**CHIRALPAK® IC**

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 83020 | CHIRALPAK IC        | 20 | 1 kg | -   | Bulk CSP           |
| 83225 | CHIRALPAK IC        | 20 | 4.6  | 250 | Method Development |
| 83235 | CHIRALPAK IC        | 20 | 10   | 250 | Semi-Prep          |
| 83242 | CHIRALPAK IC        | 20 | 21   | 50  | Semi-Prep Guard    |
| 83245 | CHIRALPAK IC        | 20 | 21   | 250 | Semi-Prep          |
| 83255 | CHIRALPAK IC        | 20 | 50   | 250 | Preparative        |
| 83256 | CHIRALPAK IC        | 20 | 50   | 500 | Preparative        |
| 83266 | CHIRALPAK IC        | 20 | 100  | 500 | Preparative        |
| 83275 | CHIRALPAK IC        | 20 | 30   | 250 | Semi-Prep          |
| 83935 | CHIRALPAK IC/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 83945 | CHIRALPAK IC/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 83955 | CHIRALPAK IC/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 83975 | CHIRALPAK IC/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 8300E | CHIRALPAK IC-10     | 10 | 1 kg | -   | Bulk CSP           |
| 83G24 | CHIRALPAK IC-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 83G25 | CHIRALPAK IC-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 83G94 | CHIRALPAK IC-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |
| 83G22 | CHIRALPAK IC-10/SFC | 10 | 4.6  | 50  | SFC Analytical     |
| 83G35 | CHIRALPAK IC-10/SFC | 10 | 10   | 250 | SFC Semi-Prep      |
| 83G45 | CHIRALPAK IC-10/SFC | 10 | 21   | 250 | SFC Semi-Prep      |
| 83G55 | CHIRALPAK IC-10/SFC | 10 | 50   | 250 | SFC Preparative    |
| 83G75 | CHIRALPAK IC-10/SFC | 10 | 30   | 250 | SFC Semi-Prep      |
| 83311 | CHIRALPAK IC        | 5  | 4.0  | 10  | Guard Cartridges   |

## 2018 Product List

| PART NUMBER | PRODUCT NAME     | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|------------------|--------------------|---------|-------------|-----------------|
| 83324       | CHIRALPAK IC     | 5                  | 4.6     | 150         | Analytical      |
| 83325       | CHIRALPAK IC     | 5                  | 4.6     | 250         | Analytical      |
| 83335       | CHIRALPAK IC     | 5                  | 10      | 250         | Semi-Prep       |
| 83337       | CHIRALPAK IC     | 5                  | 10      | 20          | Semi-Prep Guard |
| 83345       | CHIRALPAK IC     | 5                  | 20      | 250         | Semi-Prep       |
| 83375       | CHIRALPAK IC     | 5                  | 30      | 250         | Semi-Prep       |
| 83394       | CHIRALPAK IC     | 5                  | 2.1     | 150         | Analytical      |
| 83422       | CHIRALPAK IC/SFC | 5                  | 4.6     | 50          | SFC Analytical  |
| 83423       | CHIRALPAK IC/SFC | 5                  | 4.6     | 100         | SFC Analytical  |
| 83435       | CHIRALPAK IC/SFC | 5                  | 10      | 250         | SFC Semi-Prep   |
| 83445       | CHIRALPAK IC/SFC | 5                  | 21      | 250         | SFC Semi-Prep   |
| 83455       | CHIRALPAK IC/SFC | 5                  | 50      | 250         | SFC Preparative |
| 83475       | CHIRALPAK IC/SFC | 5                  | 30      | 250         | SFC Semi-Prep   |

### CHIRALPAK® IC-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 83511 | CHIRALPAK IC-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 83522 | CHIRALPAK IC-3     | 3 | 4.6 | 50  | Analytical       |
| 83523 | CHIRALPAK IC-3     | 3 | 4.6 | 100 | Analytical       |
| 83524 | CHIRALPAK IC-3     | 3 | 4.6 | 150 | Analytical       |
| 83525 | CHIRALPAK IC-3     | 3 | 4.6 | 250 | Analytical       |
| 83592 | CHIRALPAK IC-3     | 3 | 2.1 | 50  | Analytical       |
| 83593 | CHIRALPAK IC-3     | 3 | 2.1 | 100 | Analytical       |
| 83594 | CHIRALPAK IC-3     | 3 | 2.1 | 150 | Analytical       |
| 83595 | CHIRALPAK IC-3     | 3 | 2.1 | 250 | Analytical       |
| 83S82 | CHIRALPAK IC-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 83S83 | CHIRALPAK IC-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 83S84 | CHIRALPAK IC-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### CHIRALPAK® IC-U

|       |                |     |     |     |            |
|-------|----------------|-----|-----|-----|------------|
| 83U82 | CHIRALPAK IC-U | 1.6 | 3.0 | 50  | Analytical |
| 83U83 | CHIRALPAK IC-U | 1.6 | 3.0 | 100 | Analytical |

### CHIRALPAK® ID

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 84020 | CHIRALPAK ID        | 20 | 1 kg | –   | Bulk CSP           |
| 84225 | CHIRALPAK ID        | 20 | 4.6  | 250 | Method Development |
| 84235 | CHIRALPAK ID        | 20 | 10   | 250 | Semi-Prep          |
| 84242 | CHIRALPAK ID        | 20 | 21   | 50  | Semi-Prep Guard    |
| 84245 | CHIRALPAK ID        | 20 | 21   | 250 | Semi-Prep          |
| 84255 | CHIRALPAK ID        | 20 | 50   | 250 | Preparative        |
| 84256 | CHIRALPAK ID        | 20 | 50   | 500 | Preparative        |
| 84266 | CHIRALPAK ID        | 20 | 100  | 500 | Preparative        |
| 84275 | CHIRALPAK ID        | 20 | 30   | 250 | Semi-Prep          |
| 84935 | CHIRALPAK ID/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 84945 | CHIRALPAK ID/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 84955 | CHIRALPAK ID/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 84975 | CHIRALPAK ID/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 8400E | CHIRALPAK ID-10     | 10 | 1 kg | –   | Bulk CSP           |
| 84G24 | CHIRALPAK ID-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 84G25 | CHIRALPAK ID-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 84G94 | CHIRALPAK ID-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |
| 84G22 | CHIRALPAK ID-10/SFC | 10 | 4.6  | 50  | SFC Analytical     |

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|---------------------|--------------------|---------|-------------|------------------|
| 84G35       | CHIRALPAK ID-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep    |
| 84G45       | CHIRALPAK ID-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep    |
| 84G55       | CHIRALPAK ID-10/SFC | 10                 | 50      | 250         | SFC Preparative  |
| 84G75       | CHIRALPAK ID-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep    |
| 84311       | CHIRALPAK ID        | 5                  | 4.0     | 10          | Guard Cartridges |
| 84324       | CHIRALPAK ID        | 5                  | 4.6     | 150         | Analytical       |
| 84325       | CHIRALPAK ID        | 5                  | 4.6     | 250         | Analytical       |
| 84335       | CHIRALPAK ID        | 5                  | 10      | 250         | Semi-Prep        |
| 84337       | CHIRALPAK ID        | 5                  | 10      | 20          | Semi-Prep Guard  |
| 84345       | CHIRALPAK ID        | 5                  | 20      | 250         | Semi-Prep        |
| 84375       | CHIRALPAK ID        | 5                  | 30      | 250         | Semi-Prep        |
| 84394       | CHIRALPAK ID        | 5                  | 2.1     | 150         | Analytical       |
| 84422       | CHIRALPAK ID/SFC    | 5                  | 4.6     | 50          | SFC Analytical   |
| 84423       | CHIRALPAK ID/SFC    | 5                  | 4.6     | 100         | SFC Analytical   |
| 84435       | CHIRALPAK ID/SFC    | 5                  | 10      | 250         | SFC Semi-Prep    |
| 84445       | CHIRALPAK ID/SFC    | 5                  | 21      | 250         | SFC Semi-Prep    |
| 84455       | CHIRALPAK ID/SFC    | 5                  | 50      | 250         | SFC Preparative  |
| 84475       | CHIRALPAK ID/SFC    | 5                  | 30      | 250         | SFC Semi-Prep    |

### CHIRALPAK® ID-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 84511 | CHIRALPAK ID-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 84522 | CHIRALPAK ID-3     | 3 | 4.6 | 50  | Analytical       |
| 84523 | CHIRALPAK ID-3     | 3 | 4.6 | 100 | Analytical       |
| 84524 | CHIRALPAK ID-3     | 3 | 4.6 | 150 | Analytical       |
| 84525 | CHIRALPAK ID-3     | 3 | 4.6 | 250 | Analytical       |
| 84592 | CHIRALPAK ID-3     | 3 | 2.1 | 50  | Analytical       |
| 84593 | CHIRALPAK ID-3     | 3 | 2.1 | 100 | Analytical       |
| 84594 | CHIRALPAK ID-3     | 3 | 2.1 | 150 | Analytical       |
| 84595 | CHIRALPAK ID-3     | 3 | 2.1 | 250 | Analytical       |
| 84S82 | CHIRALPAK ID-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 84S83 | CHIRALPAK ID-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 84S84 | CHIRALPAK ID-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### CHIRALPAK® IE

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 85020 | CHIRALPAK IE        | 20 | 1 kg | –   | Bulk CSP           |
| 85225 | CHIRALPAK IE        | 20 | 4.6  | 250 | Method Development |
| 85235 | CHIRALPAK IE        | 20 | 10   | 250 | Semi-Prep          |
| 85242 | CHIRALPAK IE        | 20 | 21   | 50  | Semi-Prep Guard    |
| 85245 | CHIRALPAK IE        | 20 | 21   | 250 | Semi-Prep          |
| 85255 | CHIRALPAK IE        | 20 | 50   | 250 | Preparative        |
| 85256 | CHIRALPAK IE        | 20 | 50   | 500 | Preparative        |
| 85266 | CHIRALPAK IE        | 20 | 100  | 500 | Preparative        |
| 85275 | CHIRALPAK IE        | 20 | 30   | 250 | Semi-Prep          |
| 85935 | CHIRALPAK IE/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 85945 | CHIRALPAK IE/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 85955 | CHIRALPAK IE/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 85975 | CHIRALPAK IE/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 8500E | CHIRALPAK IE-10     | 10 | 1 kg | –   | Bulk CSP           |
| 85G24 | CHIRALPAK IE-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 85G25 | CHIRALPAK IE-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 85G94 | CHIRALPAK IE-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|---------------------|--------------------|---------|-------------|------------------|
| 85G22       | CHIRALPAK IE-10/SFC | 10                 | 4.6     | 50          | SFC Analytical   |
| 85G35       | CHIRALPAK IE-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep    |
| 85G45       | CHIRALPAK IE-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep    |
| 85G55       | CHIRALPAK IE-10/SFC | 10                 | 50      | 250         | SFC Preparative  |
| 85G75       | CHIRALPAK IE-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep    |
| 85311       | CHIRALPAK IE        | 5                  | 4.0     | 10          | Guard Cartridges |
| 85324       | CHIRALPAK IE        | 5                  | 4.6     | 150         | Analytical       |
| 85325       | CHIRALPAK IE        | 5                  | 4.6     | 250         | Analytical       |
| 85335       | CHIRALPAK IE        | 5                  | 10      | 250         | Semi-Prep        |
| 85337       | CHIRALPAK IE        | 5                  | 10      | 20          | Semi-Prep Guard  |
| 85345       | CHIRALPAK IE        | 5                  | 20      | 250         | Semi-Prep        |
| 85375       | CHIRALPAK IE        | 5                  | 30      | 250         | Semi-Prep        |
| 85394       | CHIRALPAK IE        | 5                  | 2.1     | 150         | Analytical       |
| 85422       | CHIRALPAK IE/SFC    | 5                  | 4.6     | 50          | SFC Analytical   |
| 85423       | CHIRALPAK IE/SFC    | 5                  | 4.6     | 100         | SFC Analytical   |
| 85435       | CHIRALPAK IE/SFC    | 5                  | 10      | 250         | SFC Semi-Prep    |
| 85445       | CHIRALPAK IE/SFC    | 5                  | 21      | 250         | SFC Semi-Prep    |
| 85455       | CHIRALPAK IE/SFC    | 5                  | 50      | 250         | SFC Preparative  |
| 85475       | CHIRALPAK IE/SFC    | 5                  | 30      | 250         | SFC Semi-Prep    |

**CHIRALPAK® IE-3**

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 85511 | CHIRALPAK IE-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 85522 | CHIRALPAK IE-3     | 3 | 4.6 | 50  | Analytical       |
| 85523 | CHIRALPAK IE-3     | 3 | 4.6 | 100 | Analytical       |
| 85524 | CHIRALPAK IE-3     | 3 | 4.6 | 150 | Analytical       |
| 85525 | CHIRALPAK IE-3     | 3 | 4.6 | 250 | Analytical       |
| 85592 | CHIRALPAK IE-3     | 3 | 2.1 | 50  | Analytical       |
| 85593 | CHIRALPAK IE-3     | 3 | 2.1 | 100 | Analytical       |
| 85594 | CHIRALPAK IE-3     | 3 | 2.1 | 150 | Analytical       |
| 85595 | CHIRALPAK IE-3     | 3 | 2.1 | 250 | Analytical       |
| 85S82 | CHIRALPAK IE-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 85S83 | CHIRALPAK IE-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 85S84 | CHIRALPAK IE-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

**CHIRALPAK® IF**

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 86020 | CHIRALPAK IF        | 20 | 1 kg | –   | Bulk CSP           |
| 86225 | CHIRALPAK IF        | 20 | 4.6  | 250 | Method Development |
| 86235 | CHIRALPAK IF        | 20 | 10   | 250 | Semi-Prep          |
| 86242 | CHIRALPAK IF        | 20 | 21   | 50  | Semi-Prep Guard    |
| 86245 | CHIRALPAK IF        | 20 | 21   | 250 | Semi-Prep          |
| 86255 | CHIRALPAK IF        | 20 | 50   | 250 | Preparative        |
| 86256 | CHIRALPAK IF        | 20 | 50   | 500 | Preparative        |
| 86266 | CHIRALPAK IF        | 20 | 100  | 500 | Preparative        |
| 86275 | CHIRALPAK IF        | 20 | 30   | 250 | Semi-Prep          |
| 86935 | CHIRALPAK IF/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 86945 | CHIRALPAK IF/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 86955 | CHIRALPAK IF/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 86975 | CHIRALPAK IF/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 8600E | CHIRALPAK IF-10     | 10 | 1 kg | –   | Bulk CSP           |
| 86G24 | CHIRALPAK IF-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 86G25 | CHIRALPAK IF-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|---------------------|--------------------|---------|-------------|------------------|
| 86G94       | CHIRALPAK IF-10/SFC | 10                 | 2.1     | 150         | SFC Analytical   |
| 86G22       | CHIRALPAK IF-10/SFC | 10                 | 4.6     | 50          | SFC Analytical   |
| 86G35       | CHIRALPAK IF-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep    |
| 86G45       | CHIRALPAK IF-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep    |
| 86G55       | CHIRALPAK IF-10/SFC | 10                 | 50      | 250         | SFC Preparative  |
| 86G75       | CHIRALPAK IF-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep    |
| 86311       | CHIRALPAK IF        | 5                  | 4.0     | 10          | Guard Cartridges |
| 86324       | CHIRALPAK IF        | 5                  | 4.6     | 150         | Analytical       |
| 86325       | CHIRALPAK IF        | 5                  | 4.6     | 250         | Analytical       |
| 86335       | CHIRALPAK IF        | 5                  | 10      | 250         | Semi-Prep        |
| 86337       | CHIRALPAK IF        | 5                  | 10      | 20          | Semi-Prep Guard  |
| 86345       | CHIRALPAK IF        | 5                  | 20      | 250         | Semi-Prep        |
| 86375       | CHIRALPAK IF        | 5                  | 30      | 250         | Semi-Prep        |
| 86394       | CHIRALPAK IF        | 5                  | 2.1     | 150         | Analytical       |
| 86422       | CHIRALPAK IF/SFC    | 5                  | 4.6     | 50          | SFC Analytical   |
| 86423       | CHIRALPAK IF/SFC    | 5                  | 4.6     | 100         | SFC Analytical   |
| 86435       | CHIRALPAK IF/SFC    | 5                  | 10      | 250         | SFC Semi-Prep    |
| 86445       | CHIRALPAK IF/SFC    | 5                  | 21      | 250         | SFC Semi-Prep    |
| 86455       | CHIRALPAK IF/SFC    | 5                  | 50      | 250         | SFC Preparative  |
| 86475       | CHIRALPAK IF/SFC    | 5                  | 30      | 250         | SFC Semi-Prep    |

**CHIRALPAK® IF-3**

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 86511 | CHIRALPAK IF-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 86522 | CHIRALPAK IF-3     | 3 | 4.6 | 50  | Analytical       |
| 86523 | CHIRALPAK IF-3     | 3 | 4.6 | 100 | Analytical       |
| 86524 | CHIRALPAK IF-3     | 3 | 4.6 | 150 | Analytical       |
| 86525 | CHIRALPAK IF-3     | 3 | 4.6 | 250 | Analytical       |
| 86592 | CHIRALPAK IF-3     | 3 | 2.1 | 50  | Analytical       |
| 86593 | CHIRALPAK IF-3     | 3 | 2.1 | 100 | Analytical       |
| 86594 | CHIRALPAK IF-3     | 3 | 2.1 | 150 | Analytical       |
| 86595 | CHIRALPAK IF-3     | 3 | 2.1 | 250 | Analytical       |
| 86S82 | CHIRALPAK IF-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 86S83 | CHIRALPAK IF-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 86S84 | CHIRALPAK IF-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

**CHIRALPAK® IF-U**

|       |                |     |     |     |            |
|-------|----------------|-----|-----|-----|------------|
| 86U82 | CHIRALPAK IF-U | 1.6 | 3.0 | 50  | Analytical |
| 86U83 | CHIRALPAK IF-U | 1.6 | 3.0 | 100 | Analytical |

**CHIRALPAK® IG**

|       |                  |    |      |     |                    |
|-------|------------------|----|------|-----|--------------------|
| 87020 | CHIRALPAK IG     | 20 | 1 kg | –   | Bulk CSP           |
| 87225 | CHIRALPAK IG     | 20 | 4.6  | 250 | Method Development |
| 87235 | CHIRALPAK IG     | 20 | 10   | 250 | Semi-Prep          |
| 87242 | CHIRALPAK IG     | 20 | 21   | 50  | Semi-Prep Guard    |
| 87245 | CHIRALPAK IG     | 20 | 21   | 250 | Semi-Prep          |
| 87255 | CHIRALPAK IG     | 20 | 50   | 250 | Preparative        |
| 87256 | CHIRALPAK IG     | 20 | 50   | 500 | Preparative        |
| 87266 | CHIRALPAK IG     | 20 | 100  | 500 | Preparative        |
| 87275 | CHIRALPAK IG     | 20 | 30   | 250 | Semi-Prep          |
| 87935 | CHIRALPAK IG/SFC | 20 | 10   | 250 | SFC Semi-Prep      |
| 87945 | CHIRALPAK IG/SFC | 20 | 21   | 250 | SFC Semi-Prep      |

## 2018 Product List

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|---------------------|--------------------|---------|-------------|------------------|
| 87955       | CHIRALPAK IG/SFC    | 20                 | 50      | 250         | SFC Preparative  |
| 87975       | CHIRALPAK IG/SFC    | 20                 | 30      | 250         | SFC Semi-Prep    |
| 8700E       | CHIRALPAK IG-10     | 10                 | 1 kg    | –           | Bulk CSP         |
| 87G24       | CHIRALPAK IG-10/SFC | 10                 | 4.6     | 150         | SFC Analytical   |
| 87G25       | CHIRALPAK IG-10/SFC | 10                 | 4.6     | 250         | SFC Analytical   |
| 87G94       | CHIRALPAK IG-10/SFC | 10                 | 2.1     | 150         | SFC Analytical   |
| 87G22       | CHIRALPAK IG-10/SFC | 10                 | 4.6     | 50          | SFC Analytical   |
| 87G35       | CHIRALPAK IG-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep    |
| 87G45       | CHIRALPAK IG-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep    |
| 87G55       | CHIRALPAK IG-10/SFC | 10                 | 50      | 250         | SFC Preparative  |
| 87G75       | CHIRALPAK IG-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep    |
| 87311       | CHIRALPAK IG        | 5                  | 4.0     | 10          | Guard Cartridges |
| 87324       | CHIRALPAK IG        | 5                  | 4.6     | 150         | Analytical       |
| 87325       | CHIRALPAK IG        | 5                  | 4.6     | 250         | Analytical       |
| 87335       | CHIRALPAK IG        | 5                  | 10      | 250         | Semi-Prep        |
| 87337       | CHIRALPAK IG        | 5                  | 10      | 20          | Semi-Prep Guard  |
| 87345       | CHIRALPAK IG        | 5                  | 20      | 250         | Semi-Prep        |
| 87375       | CHIRALPAK IG        | 5                  | 30      | 250         | Semi-Prep        |
| 87394       | CHIRALPAK IG        | 5                  | 2.1     | 150         | Analytical       |
| 87422       | CHIRALPAK IG/SFC    | 5                  | 4.6     | 50          | SFC Analytical   |
| 87423       | CHIRALPAK IG/SFC    | 5                  | 4.6     | 100         | SFC Analytical   |
| 87435       | CHIRALPAK IG/SFC    | 5                  | 10      | 250         | SFC Semi-Prep    |
| 87445       | CHIRALPAK IG/SFC    | 5                  | 21      | 250         | SFC Semi-Prep    |
| 87455       | CHIRALPAK IG/SFC    | 5                  | 50      | 250         | SFC Preparative  |
| 87475       | CHIRALPAK IG/SFC    | 5                  | 30      | 250         | SFC Semi-Prep    |

### CHIRALPAK® IG-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 87511 | CHIRALPAK IG-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 87522 | CHIRALPAK IG-3     | 3 | 4.6 | 50  | Analytical       |
| 87523 | CHIRALPAK IG-3     | 3 | 4.6 | 100 | Analytical       |
| 87524 | CHIRALPAK IG-3     | 3 | 4.6 | 150 | Analytical       |
| 87525 | CHIRALPAK IG-3     | 3 | 4.6 | 250 | Analytical       |
| 87592 | CHIRALPAK IG-3     | 3 | 2.1 | 50  | Analytical       |
| 87593 | CHIRALPAK IG-3     | 3 | 2.1 | 100 | Analytical       |
| 87594 | CHIRALPAK IG-3     | 3 | 2.1 | 150 | Analytical       |
| 87595 | CHIRALPAK IG-3     | 3 | 2.1 | 250 | Analytical       |
| 87S82 | CHIRALPAK IG-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 87S83 | CHIRALPAK IG-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 87S84 | CHIRALPAK IG-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### CHIRALPAK® IG-U

|       |                |     |     |     |            |
|-------|----------------|-----|-----|-----|------------|
| 87U82 | CHIRALPAK IG-U | 1.6 | 3.0 | 50  | Analytical |
| 87U83 | CHIRALPAK IG-U | 1.6 | 3.0 | 100 | Analytical |

### CHIRALPAK® IH

|       |              |   |     |     |                  |
|-------|--------------|---|-----|-----|------------------|
| 89311 | CHIRALPAK IH | 5 | 4.0 | 10  | Guard Cartridges |
| 89324 | CHIRALPAK IH | 5 | 4.6 | 150 | Analytical       |
| 89325 | CHIRALPAK IH | 5 | 4.6 | 250 | Analytical       |
| 89335 | CHIRALPAK IH | 5 | 10  | 250 | Semi-Prep        |
| 89337 | CHIRALPAK IH | 5 | 10  | 20  | Semi-Prep Guard  |

| PART NUMBER | PRODUCT NAME     | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|------------------|--------------------|---------|-------------|-----------------|
| 89345       | CHIRALPAK IH     | 5                  | 20      | 250         | Semi-Prep       |
| 89375       | CHIRALPAK IH     | 5                  | 30      | 250         | Semi-Prep       |
| 89394       | CHIRALPAK IH     | 5                  | 2.1     | 150         | Analytical      |
| 89422       | CHIRALPAK IH/SFC | 5                  | 4.6     | 50          | SFC Analytical  |
| 89423       | CHIRALPAK IH/SFC | 5                  | 4.6     | 100         | SFC Analytical  |
| 89435       | CHIRALPAK IH/SFC | 5                  | 10      | 250         | SFC Semi-Prep   |
| 89445       | CHIRALPAK IH/SFC | 5                  | 21      | 250         | SFC Semi-Prep   |
| 89455       | CHIRALPAK IH/SFC | 5                  | 50      | 250         | SFC Preparative |
| 89475       | CHIRALPAK IH/SFC | 5                  | 30      | 250         | SFC Semi-Prep   |

### CHIRALPAK® IH-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 89511 | CHIRALPAK IH-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 89522 | CHIRALPAK IH-3     | 3 | 4.6 | 50  | Analytical       |
| 89523 | CHIRALPAK IH-3     | 3 | 4.6 | 100 | Analytical       |
| 89524 | CHIRALPAK IH-3     | 3 | 4.6 | 150 | Analytical       |
| 89525 | CHIRALPAK IH-3     | 3 | 4.6 | 250 | Analytical       |
| 89592 | CHIRALPAK IH-3     | 3 | 2.1 | 50  | Analytical       |
| 89593 | CHIRALPAK IH-3     | 3 | 2.1 | 100 | Analytical       |
| 89594 | CHIRALPAK IH-3     | 3 | 2.1 | 150 | Analytical       |
| 89595 | CHIRALPAK IH-3     | 3 | 2.1 | 250 | Analytical       |
| 89S82 | CHIRALPAK IH-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 89S83 | CHIRALPAK IH-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 89S84 | CHIRALPAK IH-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### IMMOBILIZED COLUMNS FOR MPLC – METHOD DEVELOPMENT

|       |              |    |     |     |                    |
|-------|--------------|----|-----|-----|--------------------|
| 80223 | CHIRALPAK IA | 20 | 4.6 | 100 | Method Development |
| 83223 | CHIRALPAK IC | 20 | 4.6 | 100 | Method Development |
| 84223 | CHIRALPAK ID | 20 | 4.6 | 100 | Method Development |
| 85223 | CHIRALPAK IE | 20 | 4.6 | 100 | Method Development |
| 86223 | CHIRALPAK IF | 20 | 4.6 | 100 | Method Development |
| 87223 | CHIRALPAK IG | 20 | 4.6 | 100 | Method Development |

### IMMOBILIZED COLUMNS FOR MPLC

#### CHIRALFLASH

|       |                |    |    |     |           |
|-------|----------------|----|----|-----|-----------|
| 80M73 | CHIRALFLASH IA | 20 | 30 | 100 | Semi-Prep |
| 83M73 | CHIRALFLASH IC | 20 | 30 | 100 | Semi-Prep |
| 84M73 | CHIRALFLASH ID | 20 | 30 | 100 | Semi-Prep |
| 85M73 | CHIRALFLASH IE | 20 | 30 | 100 | Semi-Prep |
| 86M73 | CHIRALFLASH IF | 20 | 30 | 100 | Semi-Prep |
| 87M73 | CHIRALFLASH IG | 20 | 30 | 100 | Semi-Prep |

### IMMOBILIZED CHIRAL TLC PLATES

#### 2L-CHIRAL TLC

|       |                                  |    |     |     |                    |
|-------|----------------------------------|----|-----|-----|--------------------|
| 5ST5A | 2L-ChiralTLC 5<br>(5-pkg/1 each) | 20 | 200 | 100 | Method Development |
| 80T2A | 2L-ChiralTLC IA<br>(2-pkg)       | 20 | 200 | 100 | Method Development |

\* All guard cartridges for immobilized protein-based columns require a cartridge holder - part number 00081 (page 7)

| PART NUMBER | PRODUCT NAME            | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE       |
|-------------|-------------------------|--------------------|---------|-------------|--------------------|
| 83T2A       | 2L-ChiralTLC IC (2-pkg) | 20                 | 200     | 100         | Method Development |
| 84T2A       | 2L-ChiralTLC ID (2-pkg) | 20                 | 200     | 100         | Method Development |
| 85T2A       | 2L-ChiralTLC IE (2-pkg) | 20                 | 200     | 100         | Method Development |
| 86T2A       | 2L-ChiralTLC IF (2-pkg) | 20                 | 200     | 100         | Method Development |

**PROTEIN-BASED COLUMNS\***

**CHIRALPAK® AGP**

|       |                       |   |     |     |                  |
|-------|-----------------------|---|-----|-----|------------------|
| 30711 | CHIRALPAK AGP (2-pkg) | 5 | 4.0 | 10  | Guard Cartridges |
| 30712 | CHIRALPAK AGP         | 5 | 4.0 | 50  | Analytical       |
| 30713 | CHIRALPAK AGP         | 5 | 4.0 | 100 | Analytical       |
| 30714 | CHIRALPAK AGP         | 5 | 4.0 | 150 | Analytical       |
| 30733 | CHIRALPAK AGP         | 5 | 10  | 100 | Semi-Prep        |
| 30734 | CHIRALPAK AGP         | 5 | 10  | 150 | Semi-Prep        |
| 30781 | CHIRALPAK AGP (2-pkg) | 5 | 3.0 | 10  | Guard Cartridges |
| 30782 | CHIRALPAK AGP         | 5 | 3.0 | 50  | Analytical       |
| 30783 | CHIRALPAK AGP         | 5 | 3.0 | 100 | Analytical       |
| 30784 | CHIRALPAK AGP         | 5 | 3.0 | 150 | Analytical       |
| 30791 | CHIRALPAK AGP (2-pkg) | 5 | 2.0 | 10  | Guard Cartridges |
| 30792 | CHIRALPAK AGP         | 5 | 2.0 | 50  | Analytical       |
| 30793 | CHIRALPAK AGP         | 5 | 2.0 | 100 | Analytical       |
| 30794 | CHIRALPAK AGP         | 5 | 2.0 | 150 | Analytical       |

**CHIRALPAK® CBH**

|       |                       |   |     |     |                  |
|-------|-----------------------|---|-----|-----|------------------|
| 33711 | CHIRALPAK CBH (2-pkg) | 5 | 4.0 | 10  | Guard Cartridges |
| 33712 | CHIRALPAK CBH         | 5 | 4.0 | 50  | Analytical       |
| 33713 | CHIRALPAK CBH         | 5 | 4.0 | 100 | Analytical       |
| 33714 | CHIRALPAK CBH         | 5 | 4.0 | 150 | Analytical       |
| 33733 | CHIRALPAK CBH         | 5 | 10  | 100 | Semi-Prep        |
| 33734 | CHIRALPAK CBH         | 5 | 10  | 150 | Semi-Prep        |
| 33781 | CHIRALPAK CBH (2-pkg) | 5 | 3.0 | 10  | Guard Cartridges |
| 33782 | CHIRALPAK CBH         | 5 | 3.0 | 50  | Analytical       |
| 33783 | CHIRALPAK CBH         | 5 | 3.0 | 100 | Analytical       |
| 33784 | CHIRALPAK CBH         | 5 | 3.0 | 150 | Analytical       |
| 33791 | CHIRALPAK CBH (2-pkg) | 5 | 2.0 | 10  | Guard Cartridges |
| 33792 | CHIRALPAK CBH         | 5 | 2.0 | 50  | Analytical       |
| 33793 | CHIRALPAK CBH         | 5 | 2.0 | 100 | Analytical       |
| 33794 | CHIRALPAK CBH         | 5 | 2.0 | 150 | Analytical       |

**CHIRALPAK® HSA**

|       |                       |   |     |     |                  |
|-------|-----------------------|---|-----|-----|------------------|
| 34711 | CHIRALPAK HSA (2-pkg) | 5 | 4.0 | 10  | Guard Cartridges |
| 34712 | CHIRALPAK HSA         | 5 | 4.0 | 50  | Analytical       |
| 34713 | CHIRALPAK HSA         | 5 | 4.0 | 100 | Analytical       |
| 34714 | CHIRALPAK HSA         | 5 | 4.0 | 150 | Analytical       |
| 34733 | CHIRALPAK HSA         | 5 | 10  | 100 | Semi-Prep        |

| PART NUMBER | PRODUCT NAME          | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|-----------------------|--------------------|---------|-------------|------------------|
| 34734       | CHIRALPAK HSA         | 5                  | 10      | 150         | Semi-Prep        |
| 34781       | CHIRALPAK HSA (2-pkg) | 5                  | 3.0     | 10          | Guard Cartridges |
| 34782       | CHIRALPAK HSA         | 5                  | 3.0     | 50          | Analytical       |
| 34783       | CHIRALPAK HSA         | 5                  | 3.0     | 100         | Analytical       |
| 34784       | CHIRALPAK HSA         | 5                  | 3.0     | 150         | Analytical       |
| 34791       | CHIRALPAK HSA (2-pkg) | 5                  | 2.0     | 10          | Guard Cartridges |
| 34792       | CHIRALPAK HSA         | 5                  | 2.0     | 50          | Analytical       |
| 34793       | CHIRALPAK HSA         | 5                  | 2.0     | 100         | Analytical       |
| 34794       | CHIRALPAK HSA         | 5                  | 2.0     | 150         | Analytical       |

**CHIRALPAK® BSA**

|       |                       |   |     |     |                  |
|-------|-----------------------|---|-----|-----|------------------|
| 35711 | CHIRALPAK BSA (2-pkg) | 5 | 4.0 | 10  | Guard Cartridges |
| 35712 | CHIRALPAK BSA         | 5 | 4.0 | 50  | Analytical       |
| 35714 | CHIRALPAK BSA         | 5 | 4.0 | 150 | Analytical       |
| 35781 | CHIRALPAK BSA (2-pkg) | 5 | 3.0 | 10  | Guard Cartridges |
| 35782 | CHIRALPAK BSA         | 5 | 3.0 | 50  | Analytical       |
| 35791 | CHIRALPAK BSA (2-pkg) | 5 | 2.0 | 10  | Guard Cartridges |
| 35792 | CHIRALPAK BSA         | 5 | 2.0 | 50  | Analytical       |

**CHIRALPAK® DSA**

|       |                       |   |     |     |                  |
|-------|-----------------------|---|-----|-----|------------------|
| 36711 | CHIRALPAK DSA (2-pkg) | 5 | 4.0 | 10  | Guard Cartridges |
| 36712 | CHIRALPAK DSA         | 5 | 4.0 | 50  | Analytical       |
| 36714 | CHIRALPAK DSA         | 5 | 4.0 | 150 | Analytical       |
| 36781 | CHIRALPAK DSA (2-pkg) | 5 | 3.0 | 10  | Guard Cartridges |
| 36782 | CHIRALPAK DSA         | 5 | 3.0 | 50  | Analytical       |
| 36791 | CHIRALPAK DSA (2-pkg) | 5 | 2.0 | 10  | Guard Cartridges |
| 36792 | CHIRALPAK DSA         | 5 | 2.0 | 50  | Analytical       |

**CHIRALPAK® MSA**

|       |               |   |     |    |            |
|-------|---------------|---|-----|----|------------|
| 37712 | CHIRALPAK MSA | 5 | 4.0 | 50 | Analytical |
| 37782 | CHIRALPAK MSA | 5 | 3.0 | 50 | Analytical |

**CHIRALPAK® RSA**

|       |                       |   |     |     |                  |
|-------|-----------------------|---|-----|-----|------------------|
| 38711 | CHIRALPAK RSA (2-pkg) | 5 | 4.0 | 10  | Guard Cartridges |
| 38712 | CHIRALPAK RSA         | 5 | 4.0 | 50  | Analytical       |
| 38714 | CHIRALPAK RSA         | 5 | 4.0 | 150 | Analytical       |
| 38781 | CHIRALPAK RSA (2-pkg) | 5 | 3.0 | 10  | Guard Cartridges |
| 38782 | CHIRALPAK RSA         | 5 | 3.0 | 50  | Analytical       |
| 38791 | CHIRALPAK RSA (2-pkg) | 5 | 2.0 | 10  | Guard Cartridges |
| 38792 | CHIRALPAK RSA         | 5 | 2.0 | 50  | Analytical       |

**PROTEIN-BASED COLUMN ACCESSORIES**

|       |                            |         |
|-------|----------------------------|---------|
| 00081 | Guard Cartridge Holder     | Holder  |
| 000D1 | Guard Column Coupler       | Coupler |
| 000D2 | Micro Guard Column Coupler | Coupler |

\* All guard cartridges for coated polysaccharide columns require a cartridge holder - part number 00011 (page 14)  
 Note: guard columns are stand alone columns and do not require a holder

## 2018 Product List

| PART NUMBER | PRODUCT NAME | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE |
|-------------|--------------|--------------------|---------|-------------|--------------|
|-------------|--------------|--------------------|---------|-------------|--------------|

### COATED POLYSACCHARIDE CSPs AND COLUMNS\*

#### CHIRALCEL® OB

|       |              |    |     |     |                 |
|-------|--------------|----|-----|-----|-----------------|
| 12022 | CHIRALCEL OB | 10 | 4.6 | 50  | Guard Column    |
| 12025 | CHIRALCEL OB | 10 | 4.6 | 250 | HPLC Analytical |

#### CHIRALCEL® OB-H

|       |                |   |     |     |                  |
|-------|----------------|---|-----|-----|------------------|
| 12311 | CHIRALCEL OB-H | 5 | 4.0 | 10  | Guard Cartridges |
| 12324 | CHIRALCEL OB-H | 5 | 4.6 | 150 | Analytical       |
| 12325 | CHIRALCEL OB-H | 5 | 4.6 | 250 | Analytical       |

#### CHIRALCEL® OC

|       |              |    |     |     |                 |
|-------|--------------|----|-----|-----|-----------------|
| 13022 | CHIRALCEL OC | 10 | 4.6 | 50  | Guard Column    |
| 13025 | CHIRALCEL OC | 10 | 4.6 | 250 | HPLC Analytical |

#### CHIRALCEL® OC-H

|       |                |   |     |     |                  |
|-------|----------------|---|-----|-----|------------------|
| 13311 | CHIRALCEL OC-H | 5 | 4.0 | 10  | Guard Cartridges |
| 13325 | CHIRALCEL OC-H | 5 | 4.6 | 250 | Analytical       |

#### CHIRALCEL® OD

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 14020 | CHIRALCEL OD        | 20 | 1 kg | –   | Bulk CSP           |
| 14225 | CHIRALCEL OD        | 20 | 4.6  | 250 | Method Development |
| 14235 | CHIRALCEL OD        | 20 | 10   | 250 | Semi-Prep          |
| 14242 | CHIRALCEL OD        | 20 | 21   | 50  | Semi-Prep Guard    |
| 14245 | CHIRALCEL OD        | 20 | 21   | 250 | Semi-Prep          |
| 14255 | CHIRALCEL OD        | 20 | 50   | 250 | Preparative        |
| 14256 | CHIRALCEL OD        | 20 | 50   | 500 | Preparative        |
| 14266 | CHIRALCEL OD        | 20 | 100  | 500 | Preparative        |
| 14275 | CHIRALCEL OD        | 20 | 30   | 250 | Semi-Prep          |
| 14935 | CHIRALCEL OD/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 14945 | CHIRALCEL OD/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 14955 | CHIRALCEL OD/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 14975 | CHIRALCEL OD/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 1400E | CHIRALCEL OD-10     | 10 | 1kg  |     | Bulk CSP           |
| 14G24 | CHIRALCEL OD-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 14G25 | CHIRALCEL OD-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 14G94 | CHIRALCEL OD-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |
| 14G22 | CHIRALCEL OD-10/SFC | 10 | 4.6  | 50  | SFC Analytical     |
| 14G35 | CHIRALCEL OD-10/SFC | 10 | 10   | 250 | SFC Semi-Prep      |
| 14G45 | CHIRALCEL OD-10/SFC | 10 | 21   | 250 | SFC Semi-Prep      |
| 14G55 | CHIRALCEL OD-10/SFC | 10 | 50   | 250 | SFC Preparative    |
| 14G75 | CHIRALCEL OD-10/SFC | 10 | 30   | 250 | SFC Semi-Prep      |
| 14022 | CHIRALCEL OD        | 10 | 4.6  | 50  | Guard Column       |
| 14025 | CHIRALCEL OD        | 10 | 4.6  | 250 | HPLC Analytical    |
| 14035 | CHIRALCEL OD        | 10 | 10   | 250 | Semi-Prep          |
| 14045 | CHIRALCEL OD        | 10 | 20   | 250 | Semi-Prep          |

#### CHIRALCEL® OD-H

|       |                |   |     |     |                  |
|-------|----------------|---|-----|-----|------------------|
| 14311 | CHIRALCEL OD-H | 5 | 4.0 | 10  | Guard Cartridges |
| 14324 | CHIRALCEL OD-H | 5 | 4.6 | 150 | Analytical       |
| 14325 | CHIRALCEL OD-H | 5 | 4.6 | 250 | Analytical       |

| PART NUMBER | PRODUCT NAME | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE |
|-------------|--------------|--------------------|---------|-------------|--------------|
|-------------|--------------|--------------------|---------|-------------|--------------|

|       |                    |   |     |     |                 |
|-------|--------------------|---|-----|-----|-----------------|
| 14335 | CHIRALCEL OD-H     | 5 | 10  | 250 | Semi-Prep       |
| 14345 | CHIRALCEL OD-H     | 5 | 20  | 250 | Semi-Prep       |
| 14375 | CHIRALCEL OD-H     | 5 | 30  | 250 | Semi-Prep       |
| 14394 | CHIRALCEL OD-H     | 5 | 2.1 | 150 | Analytical      |
| 14422 | CHIRALCEL OD-H/SFC | 5 | 4.6 | 50  | SFC Analytical  |
| 14423 | CHIRALCEL OD-H/SFC | 5 | 4.6 | 100 | SFC Analytical  |
| 14435 | CHIRALCEL OD-H/SFC | 5 | 10  | 250 | SFC Semi-Prep   |
| 14445 | CHIRALCEL OD-H/SFC | 5 | 21  | 250 | SFC Semi-Prep   |
| 14455 | CHIRALCEL OD-H/SFC | 5 | 50  | 250 | SFC Preparative |
| 14475 | CHIRALCEL OD-H/SFC | 5 | 30  | 250 | SFC Semi-Prep   |

#### CHIRALCEL® OD-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 14511 | CHIRALCEL OD-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 14522 | CHIRALCEL OD-3     | 3 | 4.6 | 50  | Analytical       |
| 14523 | CHIRALCEL OD-3     | 3 | 4.6 | 100 | Analytical       |
| 14524 | CHIRALCEL OD-3     | 3 | 4.6 | 150 | Analytical       |
| 14525 | CHIRALCEL OD-3     | 3 | 4.6 | 250 | Analytical       |
| 14592 | CHIRALCEL OD-3     | 3 | 2.1 | 50  | Analytical       |
| 14593 | CHIRALCEL OD-3     | 3 | 2.1 | 100 | Analytical       |
| 14594 | CHIRALCEL OD-3     | 3 | 2.1 | 150 | Analytical       |
| 14595 | CHIRALCEL OD-3     | 3 | 2.1 | 250 | Analytical       |
| 14S82 | CHIRALCEL OD-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 14S83 | CHIRALCEL OD-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 14S84 | CHIRALCEL OD-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

#### CHIRALCEL® OD-R

|       |                |    |     |     |                 |
|-------|----------------|----|-----|-----|-----------------|
| 14625 | CHIRALCEL OD-R | 10 | 4.6 | 250 | HPLC Analytical |
|-------|----------------|----|-----|-----|-----------------|

#### CHIRALCEL® OD-RH

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 14711 | CHIRALCEL OD-RH | 5 | 4.0 | 10  | Guard Cartridges |
| 14724 | CHIRALCEL OD-RH | 5 | 4.6 | 150 | Analytical       |
| 14745 | CHIRALCEL OD-RH | 5 | 21  | 250 | Semi-Prep Rev Ph |
| 14794 | CHIRALCEL OD-RH | 5 | 2.1 | 150 | Analytical       |

#### CHIRALCEL® OD-3R

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 14811 | CHIRALCEL OD-3R | 3 | 4.0 | 10  | Guard Cartridges |
| 14822 | CHIRALCEL OD-3R | 3 | 4.6 | 50  | Analytical       |
| 14823 | CHIRALCEL OD-3R | 3 | 4.6 | 100 | Analytical       |
| 14824 | CHIRALCEL OD-3R | 3 | 4.6 | 150 | Analytical       |
| 14892 | CHIRALCEL OD-3R | 3 | 2.1 | 50  | Analytical       |
| 14893 | CHIRALCEL OD-3R | 3 | 2.1 | 100 | Analytical       |
| 14894 | CHIRALCEL OD-3R | 3 | 2.1 | 150 | Analytical       |
| 14895 | CHIRALCEL OD-3R | 3 | 2.1 | 250 | Analytical       |

#### CHIRALCEL® OF

|       |              |    |     |     |                 |
|-------|--------------|----|-----|-----|-----------------|
| 15022 | CHIRALCEL OF | 10 | 4.6 | 50  | Guard Column    |
| 15025 | CHIRALCEL OF | 10 | 4.6 | 250 | HPLC Analytical |

#### CHIRALCEL® OG

|       |              |    |     |     |                 |
|-------|--------------|----|-----|-----|-----------------|
| 16022 | CHIRALCEL OG | 10 | 4.6 | 50  | Guard Column    |
| 16025 | CHIRALCEL OG | 10 | 4.6 | 250 | HPLC Analytical |



| PART NUMBER          | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE       |
|----------------------|---------------------|--------------------|---------|-------------|--------------------|
| <b>CHIRALCEL® OJ</b> |                     |                    |         |             |                    |
| 17020                | CHIRALCEL OJ        | 20                 | 1 kg    | –           | Bulk CSP           |
| 17225                | CHIRALCEL OJ        | 20                 | 4.6     | 250         | Method Development |
| 17235                | CHIRALCEL OJ        | 20                 | 10      | 250         | Semi-Prep          |
| 17242                | CHIRALCEL OJ        | 20                 | 21      | 50          | Semi-Prep Guard    |
| 17245                | CHIRALCEL OJ        | 20                 | 21      | 250         | Semi-Prep          |
| 17255                | CHIRALCEL OJ        | 20                 | 50      | 250         | Preparative        |
| 17256                | CHIRALCEL OJ        | 20                 | 50      | 500         | Preparative        |
| 17266                | CHIRALCEL OJ        | 20                 | 100     | 500         | Preparative        |
| 17275                | CHIRALCEL OJ        | 20                 | 30      | 250         | Semi-Prep          |
| 17935                | CHIRALCEL OJ/SFC    | 20                 | 10      | 250         | SFC Semi-Prep      |
| 17945                | CHIRALCEL OJ/SFC    | 20                 | 21      | 250         | SFC Semi-Prep      |
| 17955                | CHIRALCEL OJ/SFC    | 20                 | 50      | 250         | SFC Preparative    |
| 17975                | CHIRALCEL OJ/SFC    | 20                 | 30      | 250         | SFC Semi-Prep      |
| 1700E                | CHIRALCEL OJ-10     | 10                 | 1 kg    | –           | Bulk CSP           |
| 17G24                | CHIRALCEL OJ-10/SFC | 10                 | 4.6     | 150         | SFC Analytical     |
| 17G25                | CHIRALCEL OJ-10/SFC | 10                 | 4.6     | 250         | SFC Analytical     |
| 17G94                | CHIRALCEL OJ-10/SFC | 10                 | 2.1     | 150         | SFC Analytical     |
| 17G22                | CHIRALCEL OJ-10/SFC | 10                 | 4.6     | 50          | SFC Analytical     |
| 17G35                | CHIRALCEL OJ-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep      |
| 17G45                | CHIRALCEL OJ-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep      |
| 17G55                | CHIRALCEL OJ-10/SFC | 10                 | 50      | 250         | SFC Preparative    |
| 17G75                | CHIRALCEL OJ-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep      |
| 17022                | CHIRALCEL OJ        | 10                 | 4.6     | 50          | Guard Column       |
| 17025                | CHIRALCEL OJ        | 10                 | 4.6     | 250         | HPLC Analytical    |
| 17035                | CHIRALCEL OJ        | 10                 | 10      | 250         | Semi-Prep          |
| 17045                | CHIRALCEL OJ        | 10                 | 20      | 250         | Semi-Prep          |

**CHIRALCEL® OJ-H**

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 17311 | CHIRALCEL OJ-H     | 5 | 4.0 | 10  | Guard Cartridges |
| 17324 | CHIRALCEL OJ-H     | 5 | 4.6 | 150 | Analytical       |
| 17325 | CHIRALCEL OJ-H     | 5 | 4.6 | 250 | Analytical       |
| 17335 | CHIRALCEL OJ-H     | 5 | 10  | 250 | Semi-Prep        |
| 17345 | CHIRALCEL OJ-H     | 5 | 20  | 250 | Semi-Prep        |
| 17375 | CHIRALCEL OJ-H     | 5 | 30  | 250 | Semi-Prep        |
| 17394 | CHIRALCEL OJ-H     | 5 | 2.1 | 150 | Analytical       |
| 17422 | CHIRALCEL OJ-H/SFC | 5 | 4.6 | 50  | SFC Analytical   |
| 17423 | CHIRALCEL OJ-H/SFC | 5 | 4.6 | 100 | SFC Analytical   |
| 17435 | CHIRALCEL OJ-H/SFC | 5 | 10  | 250 | SFC Semi-Prep    |
| 17445 | CHIRALCEL OJ-H/SFC | 5 | 21  | 250 | SFC Semi-Prep    |
| 17455 | CHIRALCEL OJ-H/SFC | 5 | 50  | 250 | SFC Preparative  |
| 17475 | CHIRALCEL OJ-H/SFC | 5 | 30  | 250 | SFC Semi-Prep    |

**CHIRALCEL® OJ-3**

|       |                |   |     |     |                  |
|-------|----------------|---|-----|-----|------------------|
| 17511 | CHIRALCEL OJ-3 | 3 | 4.0 | 10  | Guard Cartridges |
| 17522 | CHIRALCEL OJ-3 | 3 | 4.6 | 50  | Analytical       |
| 17523 | CHIRALCEL OJ-3 | 3 | 4.6 | 100 | Analytical       |
| 17524 | CHIRALCEL OJ-3 | 3 | 4.6 | 150 | Analytical       |
| 17525 | CHIRALCEL OJ-3 | 3 | 4.6 | 250 | Analytical       |
| 17592 | CHIRALCEL OJ-3 | 3 | 2.1 | 50  | Analytical       |

| PART NUMBER | PRODUCT NAME       | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE   |
|-------------|--------------------|--------------------|---------|-------------|----------------|
| 17593       | CHIRALCEL OJ-3     | 3                  | 2.1     | 100         | Analytical     |
| 17594       | CHIRALCEL OJ-3     | 3                  | 2.1     | 150         | Analytical     |
| 17595       | CHIRALCEL OJ-3     | 3                  | 2.1     | 250         | Analytical     |
| 17S82       | CHIRALCEL OJ-3/SFC | 3                  | 3.0     | 50          | SFC Analytical |
| 17S83       | CHIRALCEL OJ-3/SFC | 3                  | 3.0     | 100         | SFC Analytical |
| 17S84       | CHIRALCEL OJ-3/SFC | 3                  | 3.0     | 150         | SFC Analytical |

**CHIRALCEL® OJ-RH**

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 17711 | CHIRALCEL OJ-RH | 5 | 4.0 | 10  | Guard Cartridges |
| 17724 | CHIRALCEL OJ-RH | 5 | 4.6 | 150 | Analytical       |
| 17745 | CHIRALCEL OJ-RH | 5 | 21  | 250 | Semi-Prep Rev Ph |
| 17794 | CHIRALCEL OJ-RH | 5 | 2.1 | 150 | Analytical       |

**CHIRALCEL® OJ-3R**

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 17811 | CHIRALCEL OJ-3R | 3 | 4.0 | 10  | Guard Cartridges |
| 17822 | CHIRALCEL OJ-3R | 3 | 4.6 | 50  | Analytical       |
| 17823 | CHIRALCEL OJ-3R | 3 | 4.6 | 100 | Analytical       |
| 17824 | CHIRALCEL OJ-3R | 3 | 4.6 | 150 | Analytical       |
| 17892 | CHIRALCEL OJ-3R | 3 | 2.1 | 50  | Analytical       |
| 17893 | CHIRALCEL OJ-3R | 3 | 2.1 | 100 | Analytical       |
| 17894 | CHIRALCEL OJ-3R | 3 | 2.1 | 150 | Analytical       |
| 17895 | CHIRALCEL OJ-3R | 3 | 2.1 | 250 | Analytical       |

**CHIRALCEL® OK**

|       |              |    |     |     |                 |
|-------|--------------|----|-----|-----|-----------------|
| 18022 | CHIRALCEL OK | 10 | 4.6 | 50  | Guard Column    |
| 18025 | CHIRALCEL OK | 10 | 4.6 | 250 | HPLC Analytical |

**CHIRALCEL® OX**

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 63020 | CHIRALCEL OX        | 20 | 1 kg | –   | Bulk CSP           |
| 63225 | CHIRALCEL OX        | 20 | 4.6  | 250 | Method Development |
| 63235 | CHIRALCEL OX        | 20 | 10   | 250 | Semi-Prep          |
| 63242 | CHIRALCEL OX        | 20 | 21   | 50  | Semi-Prep Guard    |
| 63245 | CHIRALCEL OX        | 20 | 21   | 250 | Semi-Prep          |
| 63255 | CHIRALCEL OX        | 20 | 50   | 250 | Preparative        |
| 63256 | CHIRALCEL OX        | 20 | 50   | 500 | Preparative        |
| 63266 | CHIRALCEL OX        | 20 | 100  | 500 | Preparative        |
| 63275 | CHIRALCEL OX        | 20 | 30   | 250 | Semi-Prep          |
| 63935 | CHIRALCEL OX/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 63945 | CHIRALCEL OX/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 63955 | CHIRALCEL OX/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 63975 | CHIRALCEL OX/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 6300E | CHIRALCEL OX-10     | 10 | 1 kg | –   | Bulk CSP           |
| 63G24 | CHIRALCEL OX-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 63G25 | CHIRALCEL OX-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 63G94 | CHIRALCEL OX-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |
| 63G22 | CHIRALCEL OX-10/SFC | 10 | 4.6  | 50  | SFC Analytical     |
| 63G35 | CHIRALCEL OX-10/SFC | 10 | 10   | 250 | SFC Semi-Prep      |
| 63G45 | CHIRALCEL OX-10/SFC | 10 | 21   | 250 | SFC Semi-Prep      |
| 63G55 | CHIRALCEL OX-10/SFC | 10 | 50   | 250 | SFC Preparative    |
| 63G75 | CHIRALCEL OX-10/SFC | 10 | 30   | 250 | SFC Semi-Prep      |

## 2018 Product List

| PART NUMBER            | PRODUCT NAME       | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|------------------------|--------------------|--------------------|---------|-------------|------------------|
| <b>CHIRALCEL® OX-H</b> |                    |                    |         |             |                  |
| 63311                  | CHIRALCEL OX-H     | 5                  | 4.0     | 10          | Guard Cartridges |
| 63324                  | CHIRALCEL OX-H     | 5                  | 4.6     | 150         | Analytical       |
| 63325                  | CHIRALCEL OX-H     | 5                  | 4.6     | 250         | Analytical       |
| 63335                  | CHIRALCEL OX-H     | 5                  | 10      | 250         | Semi-Prep        |
| 63345                  | CHIRALCEL OX-H     | 5                  | 20      | 250         | Semi-Prep        |
| 63375                  | CHIRALCEL OX-H     | 5                  | 30      | 250         | Semi-Prep        |
| 63394                  | CHIRALCEL OX-H     | 5                  | 2.1     | 150         | Analytical       |
| 63422                  | CHIRALCEL OX-H/SFC | 5                  | 4.6     | 50          | SFC Analytical   |
| 63423                  | CHIRALCEL OX-H/SFC | 5                  | 4.6     | 100         | SFC Analytical   |
| 63435                  | CHIRALCEL OX-H/SFC | 5                  | 10      | 250         | SFC Semi-Prep    |
| 63445                  | CHIRALCEL OX-H/SFC | 5                  | 21      | 250         | SFC Semi-Prep    |
| 63455                  | CHIRALCEL OX-H/SFC | 5                  | 50      | 250         | SFC Preparative  |
| 63475                  | CHIRALCEL OX-H/SFC | 5                  | 30      | 250         | SFC Semi-Prep    |

### CHIRALCEL® OX-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 63511 | CHIRALCEL OX-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 63522 | CHIRALCEL OX-3     | 3 | 4.6 | 50  | Analytical       |
| 63523 | CHIRALCEL OX-3     | 3 | 4.6 | 100 | Analytical       |
| 63524 | CHIRALCEL OX-3     | 3 | 4.6 | 150 | Analytical       |
| 63525 | CHIRALCEL OX-3     | 3 | 4.6 | 250 | Analytical       |
| 63592 | CHIRALCEL OX-3     | 3 | 2.1 | 50  | Analytical       |
| 63593 | CHIRALCEL OX-3     | 3 | 2.1 | 100 | Analytical       |
| 63594 | CHIRALCEL OX-3     | 3 | 2.1 | 150 | Analytical       |
| 63595 | CHIRALCEL OX-3     | 3 | 2.1 | 250 | Analytical       |
| 63S82 | CHIRALCEL OX-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 63S83 | CHIRALCEL OX-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 63S84 | CHIRALCEL OX-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### CHIRALCEL® OX-RH

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 63711 | CHIRALCEL OX-RH | 5 | 4.0 | 10  | Guard Cartridges |
| 63724 | CHIRALCEL OX-RH | 5 | 4.6 | 150 | Analytical       |
| 63745 | CHIRALCEL OX-RH | 5 | 21  | 250 | Semi-Prep Rev Ph |
| 63794 | CHIRALCEL OX-RH | 5 | 2.1 | 150 | Analytical       |

### CHIRALCEL® OX-3R

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 63811 | CHIRALCEL OX-3R | 3 | 4.0 | 10  | Guard Cartridges |
| 63822 | CHIRALCEL OX-3R | 3 | 4.6 | 50  | Analytical       |
| 63823 | CHIRALCEL OX-3R | 3 | 4.6 | 100 | Analytical       |
| 63824 | CHIRALCEL OX-3R | 3 | 4.6 | 150 | Analytical       |
| 63892 | CHIRALCEL OX-3R | 3 | 2.1 | 50  | Analytical       |
| 63893 | CHIRALCEL OX-3R | 3 | 2.1 | 100 | Analytical       |
| 63894 | CHIRALCEL OX-3R | 3 | 2.1 | 150 | Analytical       |
| 63895 | CHIRALCEL OX-3R | 3 | 2.1 | 250 | Analytical       |

### CHIRALCEL® OZ

|       |              |    |      |     |                    |
|-------|--------------|----|------|-----|--------------------|
| 42020 | CHIRALCEL OZ | 20 | 1 kg | –   | Bulk CSP           |
| 42225 | CHIRALCEL OZ | 20 | 4.6  | 250 | Method Development |
| 42235 | CHIRALCEL OZ | 20 | 10   | 250 | Semi-Prep          |
| 42242 | CHIRALCEL OZ | 20 | 21   | 50  | Semi-Prep Guard    |
| 42245 | CHIRALCEL OZ | 20 | 21   | 250 | Semi-Prep          |

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|---------------------|--------------------|---------|-------------|-----------------|
| 42255       | CHIRALCEL OZ        | 20                 | 50      | 250         | Preparative     |
| 42256       | CHIRALCEL OZ        | 20                 | 50      | 500         | Preparative     |
| 42266       | CHIRALCEL OZ        | 20                 | 100     | 500         | Preparative     |
| 42275       | CHIRALCEL OZ        | 20                 | 30      | 250         | Semi-Prep       |
| 42935       | CHIRALCEL OZ/SFC    | 20                 | 10      | 250         | SFC Semi-Prep   |
| 42945       | CHIRALCEL OZ/SFC    | 20                 | 21      | 250         | SFC Semi-Prep   |
| 42955       | CHIRALCEL OZ/SFC    | 20                 | 50      | 250         | SFC Preparative |
| 42975       | CHIRALCEL OZ/SFC    | 20                 | 30      | 250         | SFC Semi-Prep   |
| 4200E       | CHIRALCEL OZ-10     | 10                 | 1 kg    | –           | Bulk CSP        |
| 42G24       | CHIRALPAK OZ-10/SFC | 10                 | 4.6     | 150         | SFC Analytical  |
| 42G25       | CHIRALPAK OZ-10/SFC | 10                 | 4.6     | 250         | SFC Analytical  |
| 42G94       | CHIRALPAK OZ-10/SFC | 10                 | 2.1     | 150         | SFC Analytical  |
| 42G22       | CHIRALPAK OZ-10/SFC | 10                 | 4.6     | 50          | SFC Analytical  |
| 42G35       | CHIRALPAK OZ-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep   |
| 42G45       | CHIRALPAK OZ-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep   |
| 42G55       | CHIRALPAK OZ-10/SFC | 10                 | 50      | 250         | SFC Preparative |
| 42G75       | CHIRALPAK OZ-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep   |

### CHIRALCEL® OZ-H

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 42311 | CHIRALCEL OZ-H     | 5 | 4.0 | 10  | Guard Cartridges |
| 42324 | CHIRALCEL OZ-H     | 5 | 4.6 | 150 | Analytical       |
| 42325 | CHIRALCEL OZ-H     | 5 | 4.6 | 250 | Analytical       |
| 42335 | CHIRALCEL OZ-H     | 5 | 10  | 250 | Semi-Prep        |
| 42345 | CHIRALCEL OZ-H     | 5 | 20  | 250 | Semi-Prep        |
| 42375 | CHIRALCEL OZ-H     | 5 | 30  | 250 | Semi-Prep        |
| 42394 | CHIRALCEL OZ-H     | 5 | 2.1 | 150 | Analytical       |
| 42422 | CHIRALCEL OZ-H/SFC | 5 | 4.6 | 50  | SFC Analytical   |
| 42423 | CHIRALCEL OZ-H/SFC | 5 | 4.6 | 100 | SFC Analytical   |
| 42435 | CHIRALCEL OZ-H/SFC | 5 | 10  | 250 | SFC Semi-Prep    |
| 42445 | CHIRALCEL OZ-H/SFC | 5 | 21  | 250 | SFC Semi-Prep    |
| 42455 | CHIRALCEL OZ-H/SFC | 5 | 50  | 250 | SFC Preparative  |
| 42475 | CHIRALCEL OZ-H/SFC | 5 | 30  | 250 | SFC Semi-Prep    |

### CHIRALCEL® OZ-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 42511 | CHIRALCEL OZ-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 42522 | CHIRALCEL OZ-3     | 3 | 4.6 | 50  | Analytical       |
| 42523 | CHIRALCEL OZ-3     | 3 | 4.6 | 100 | Analytical       |
| 42524 | CHIRALCEL OZ-3     | 3 | 4.6 | 150 | Analytical       |
| 42525 | CHIRALCEL OZ-3     | 3 | 4.6 | 250 | Analytical       |
| 42592 | CHIRALCEL OZ-3     | 3 | 2.1 | 50  | Analytical       |
| 42593 | CHIRALCEL OZ-3     | 3 | 2.1 | 100 | Analytical       |
| 42594 | CHIRALCEL OZ-3     | 3 | 2.1 | 150 | Analytical       |
| 42595 | CHIRALCEL OZ-3     | 3 | 2.1 | 250 | Analytical       |
| 42S82 | CHIRALCEL OZ-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 42S83 | CHIRALCEL OZ-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 42S84 | CHIRALCEL OZ-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### CHIRALCEL® OZ-RH

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 42711 | CHIRALCEL OZ-RH | 5 | 4.0 | 10  | Guard Cartridges |
| 42724 | CHIRALCEL OZ-RH | 5 | 4.6 | 150 | Analytical       |

| PART NUMBER | PRODUCT NAME    | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|-----------------|--------------------|---------|-------------|------------------|
| 42745       | CHIRALCEL OZ-RH | 5                  | 21      | 250         | Semi-Prep Rev Ph |
| 42794       | CHIRALCEL OZ-RH | 5                  | 2.1     | 150         | Analytical       |

**CHIRALCEL® OZ-3R**

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 42811 | CHIRALCEL OZ-3R | 3 | 4.0 | 10  | Guard Cartridges |
| 42822 | CHIRALCEL OZ-3R | 3 | 4.6 | 50  | Analytical       |
| 42823 | CHIRALCEL OZ-3R | 3 | 4.6 | 100 | Analytical       |
| 42824 | CHIRALCEL OZ-3R | 3 | 4.6 | 150 | Analytical       |
| 42892 | CHIRALCEL OZ-3R | 3 | 2.1 | 50  | Analytical       |
| 42893 | CHIRALCEL OZ-3R | 3 | 2.1 | 100 | Analytical       |
| 42894 | CHIRALCEL OZ-3R | 3 | 2.1 | 150 | Analytical       |
| 42895 | CHIRALCEL OZ-3R | 3 | 2.1 | 250 | Analytical       |

**CHIRALPAK® AD**

|       |                    |    |      |     |                    |
|-------|--------------------|----|------|-----|--------------------|
| 19020 | CHIRALPAK AD       | 20 | 1 kg | –   | Bulk CSP           |
| 19225 | CHIRALPAK AD       | 20 | 4.6  | 250 | Method Development |
| 19235 | CHIRALPAK AD       | 20 | 10   | 250 | Semi-Prep          |
| 19242 | CHIRALPAK AD       | 20 | 21   | 50  | Semi-Prep Guard    |
| 19245 | CHIRALPAK AD       | 20 | 21   | 250 | Semi-Prep          |
| 19255 | CHIRALPAK AD       | 20 | 50   | 250 | Preparative        |
| 19256 | CHIRALPAK AD       | 20 | 50   | 500 | Preparative        |
| 19266 | CHIRALPAK AD       | 20 | 100  | 500 | Preparative        |
| 19275 | CHIRALPAK AD       | 20 | 30   | 250 | Semi-Prep          |
| 19935 | CHIRALPAK AD/SFC   | 20 | 10   | 250 | SFC Semi-Prep      |
| 19945 | CHIRALPAK AD/SFC   | 20 | 21   | 250 | SFC Semi-Prep      |
| 19955 | CHIRALPAK AD/SFC   | 20 | 50   | 250 | SFC Preparative    |
| 19975 | CHIRALPAK AD/SFC   | 20 | 30   | 250 | SFC Semi-Prep      |
| 1900E | CHIRALPAK AD-10    | 10 | 1 kg | –   | Bulk CSP           |
| 19G24 | CHIRALPAKAD-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 19G25 | CHIRALPAKAD-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 19G94 | CHIRALPAKAD-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |
| 19G22 | CHIRALPAKAD-10/SFC | 10 | 4.6  | 50  | SFC Analytical     |
| 19G35 | CHIRALPAKAD-10/SFC | 10 | 10   | 250 | SFC Semi-Prep      |
| 19G45 | CHIRALPAKAD-10/SFC | 10 | 21   | 250 | SFC Semi-Prep      |
| 19G55 | CHIRALPAKAD-10/SFC | 10 | 50   | 250 | SFC Preparative    |
| 19G75 | CHIRALPAKAD-10/SFC | 10 | 30   | 250 | SFC Semi-Prep      |
| 19022 | CHIRALPAK AD       | 10 | 4.6  | 50  | Guard Column       |
| 19025 | CHIRALPAK AD       | 10 | 4.6  | 250 | HPLC Analytical    |
| 19035 | CHIRALPAK AD       | 10 | 10   | 250 | Semi-Prep          |
| 19045 | CHIRALPAK AD       | 10 | 20   | 250 | Semi-Prep          |
| 19094 | CHIRALPAK AD       | 10 | 2.1  | 150 | HPLC Analytical    |

**CHIRALPAK® AD-H**

|       |                |   |     |     |                  |
|-------|----------------|---|-----|-----|------------------|
| 19311 | CHIRALPAK AD-H | 5 | 4.0 | 10  | Guard Cartridges |
| 19324 | CHIRALPAK AD-H | 5 | 4.6 | 150 | Analytical       |
| 19325 | CHIRALPAK AD-H | 5 | 4.6 | 250 | Analytical       |
| 19335 | CHIRALPAK AD-H | 5 | 10  | 250 | Semi-Prep        |
| 19345 | CHIRALPAK AD-H | 5 | 20  | 250 | Semi-Prep        |
| 19375 | CHIRALPAK AD-H | 5 | 30  | 250 | Semi-Prep        |
| 19394 | CHIRALPAK AD-H | 5 | 2.1 | 150 | Analytical       |

| PART NUMBER | PRODUCT NAME      | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|-------------------|--------------------|---------|-------------|-----------------|
| 19422       | CHIRALPAKAD-H/SFC | 5                  | 4.6     | 50          | SFC Analytical  |
| 19423       | CHIRALPAKAD-H/SFC | 5                  | 4.6     | 100         | SFC Analytical  |
| 19435       | CHIRALPAKAD-H/SFC | 5                  | 10      | 250         | SFC Semi-Prep   |
| 19445       | CHIRALPAKAD-H/SFC | 5                  | 21      | 250         | SFC Semi-Prep   |
| 19455       | CHIRALPAKAD-H/SFC | 5                  | 50      | 250         | SFC Preparative |
| 19475       | CHIRALPAKAD-H/SFC | 5                  | 30      | 250         | SFC Semi-Prep   |

**CHIRALPAK® AD-3**

|       |                   |   |     |     |                  |
|-------|-------------------|---|-----|-----|------------------|
| 19511 | CHIRALPAK AD-3    | 3 | 4.0 | 10  | Guard Cartridges |
| 19522 | CHIRALPAK AD-3    | 3 | 4.6 | 50  | Analytical       |
| 19523 | CHIRALPAK AD-3    | 3 | 4.6 | 100 | Analytical       |
| 19524 | CHIRALPAK AD-3    | 3 | 4.6 | 150 | Analytical       |
| 19525 | CHIRALPAK AD-3    | 3 | 4.6 | 250 | Analytical       |
| 19592 | CHIRALPAK AD-3    | 3 | 2.1 | 50  | Analytical       |
| 19593 | CHIRALPAK AD-3    | 3 | 2.1 | 100 | Analytical       |
| 19594 | CHIRALPAK AD-3    | 3 | 2.1 | 150 | Analytical       |
| 19595 | CHIRALPAK AD-3    | 3 | 2.1 | 250 | Analytical       |
| 19S82 | CHIRALPAKAD-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 19S83 | CHIRALPAKAD-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 19S84 | CHIRALPAKAD-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

**CHIRALPAK® AD-RH**

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 19711 | CHIRALPAK AD-RH | 5 | 4.0 | 10  | Guard Cartridges |
| 19724 | CHIRALPAK AD-RH | 5 | 4.6 | 150 | Analytical       |
| 19745 | CHIRALPAK AD-RH | 5 | 21  | 250 | Semi-Prep Rev Ph |
| 19794 | CHIRALPAK AD-RH | 5 | 2.1 | 150 | Analytical       |

**CHIRALPAK® AD-3R**

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 19811 | CHIRALPAK AD-3R | 3 | 4.0 | 10  | Guard Cartridges |
| 19822 | CHIRALPAK AD-3R | 3 | 4.6 | 50  | Analytical       |
| 19823 | CHIRALPAK AD-3R | 3 | 4.6 | 100 | Analytical       |
| 19824 | CHIRALPAK AD-3R | 3 | 4.6 | 150 | Analytical       |
| 19892 | CHIRALPAK AD-3R | 3 | 2.1 | 50  | Analytical       |
| 19893 | CHIRALPAK AD-3R | 3 | 2.1 | 100 | Analytical       |
| 19894 | CHIRALPAK AD-3R | 3 | 2.1 | 150 | Analytical       |
| 19895 | CHIRALPAK AD-3R | 3 | 2.1 | 250 | Analytical       |

**CHIRALPAK® AS**

|       |                  |    |      |     |                    |
|-------|------------------|----|------|-----|--------------------|
| 20020 | CHIRALPAK AS     | 20 | 1 kg | –   | Bulk CSP           |
| 20225 | CHIRALPAK AS     | 20 | 4.6  | 250 | Method Development |
| 20235 | CHIRALPAK AS     | 20 | 10   | 250 | Semi-Prep          |
| 20242 | CHIRALPAK AS     | 20 | 21   | 50  | Semi-Prep Guard    |
| 20245 | CHIRALPAK AS     | 20 | 21   | 250 | Semi-Prep          |
| 20255 | CHIRALPAK AS     | 20 | 50   | 250 | Preparative        |
| 20256 | CHIRALPAK AS     | 20 | 50   | 500 | Preparative        |
| 20266 | CHIRALPAK AS     | 20 | 100  | 500 | Preparative        |
| 20275 | CHIRALPAK AS     | 20 | 30   | 250 | Semi-Prep          |
| 20935 | CHIRALPAK AS/SFC | 20 | 10   | 250 | SFC Semi-Prep      |
| 20945 | CHIRALPAK AS/SFC | 20 | 21   | 250 | SFC Semi-Prep      |
| 20955 | CHIRALPAK AS/SFC | 20 | 50   | 250 | SFC Preparative    |

## 2018 Product List

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|---------------------|--------------------|---------|-------------|-----------------|
| 20975       | CHIRALPAK AS/SFC    | 20                 | 30      | 250         | SFC Semi-Prep   |
| 2000E       | CHIRALPAK AS-10     | 10                 | 1 kg    | –           | Bulk CSP        |
| 20G24       | CHIRALPAK AS-10/SFC | 10                 | 4.6     | 150         | SFC Analytical  |
| 20G25       | CHIRALPAK AS-10/SFC | 10                 | 4.6     | 250         | SFC Analytical  |
| 20G94       | CHIRALPAK AS-10/SFC | 10                 | 2.1     | 150         | SFC Analytical  |
| 20G22       | CHIRALPAK AS-10/SFC | 10                 | 4.6     | 50          | SFC Analytical  |
| 20G35       | CHIRALPAK AS-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep   |
| 20G45       | CHIRALPAK AS-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep   |
| 20G55       | CHIRALPAK AS-10/SFC | 10                 | 50      | 250         | SFC Preparative |
| 20G75       | CHIRALPAK AS-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep   |
| 20022       | CHIRALPAK AS        | 10                 | 4.6     | 50          | Guard Column    |
| 20025       | CHIRALPAK AS        | 10                 | 4.6     | 250         | HPLC Analytical |
| 20035       | CHIRALPAK AS        | 10                 | 10      | 250         | Semi-Prep       |
| 20045       | CHIRALPAK AS        | 10                 | 20      | 250         | Semi-Prep       |

### CHIRALPAK® AS-H

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 20311 | CHIRALPAK AS-H     | 5 | 4.0 | 10  | Guard Cartridges |
| 20324 | CHIRALPAK AS-H     | 5 | 4.6 | 150 | Analytical       |
| 20325 | CHIRALPAK AS-H     | 5 | 4.6 | 250 | Analytical       |
| 20335 | CHIRALPAK AS-H     | 5 | 10  | 250 | Semi-Prep        |
| 20345 | CHIRALPAK AS-H     | 5 | 20  | 250 | Semi-Prep        |
| 20375 | CHIRALPAK AS-H     | 5 | 30  | 250 | Semi-Prep        |
| 20394 | CHIRALPAK AS-H     | 5 | 2.1 | 150 | Analytical       |
| 20422 | CHIRALPAK AS-H/SFC | 5 | 4.6 | 50  | SFC Analytical   |
| 20423 | CHIRALPAK AS-H/SFC | 5 | 4.6 | 100 | SFC Analytical   |
| 20435 | CHIRALPAK AS-H/SFC | 5 | 10  | 250 | SFC Semi-Prep    |
| 20445 | CHIRALPAK AS-H/SFC | 5 | 21  | 250 | SFC Semi-Prep    |
| 20455 | CHIRALPAK AS-H/SFC | 5 | 50  | 250 | SFC Preparative  |
| 20475 | CHIRALPAK AS-H/SFC | 5 | 30  | 250 | SFC Semi-Prep    |

### CHIRALPAK® AS-3

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 20511 | CHIRALPAK AS-3     | 3 | 4.0 | 10  | Guard Cartridges |
| 20522 | CHIRALPAK AS-3     | 3 | 4.6 | 50  | Analytical       |
| 20523 | CHIRALPAK AS-3     | 3 | 4.6 | 100 | Analytical       |
| 20524 | CHIRALPAK AS-3     | 3 | 4.6 | 150 | Analytical       |
| 20525 | CHIRALPAK AS-3     | 3 | 4.6 | 250 | Analytical       |
| 20592 | CHIRALPAK AS-3     | 3 | 2.1 | 50  | Analytical       |
| 20593 | CHIRALPAK AS-3     | 3 | 2.1 | 100 | Analytical       |
| 20594 | CHIRALPAK AS-3     | 3 | 2.1 | 150 | Analytical       |
| 20595 | CHIRALPAK AS-3     | 3 | 2.1 | 250 | Analytical       |
| 20S82 | CHIRALPAK AS-3/SFC | 3 | 3.0 | 50  | SFC Analytical   |
| 20S83 | CHIRALPAK AS-3/SFC | 3 | 3.0 | 100 | SFC Analytical   |
| 20S84 | CHIRALPAK AS-3/SFC | 3 | 3.0 | 150 | SFC Analytical   |

### CHIRALPAK® AS-RH

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 20711 | CHIRALPAK AS-RH | 5 | 4.0 | 10  | Guard Cartridges |
| 20724 | CHIRALPAK AS-RH | 5 | 4.6 | 150 | Analytical       |
| 20745 | CHIRALPAK AS-RH | 5 | 21  | 250 | Semi-Prep Rev Ph |
| 20794 | CHIRALPAK AS-RH | 5 | 2.1 | 150 | Analytical       |

| PART NUMBER | PRODUCT NAME    | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------|-----------------|--------------------|---------|-------------|------------------|
| 20811       | CHIRALPAK AS-3R | 3                  | 4.0     | 10          | Guard Cartridges |
| 20822       | CHIRALPAK AS-3R | 3                  | 4.6     | 50          | Analytical       |
| 20823       | CHIRALPAK AS-3R | 3                  | 4.6     | 100         | Analytical       |
| 20824       | CHIRALPAK AS-3R | 3                  | 4.6     | 150         | Analytical       |
| 20892       | CHIRALPAK AS-3R | 3                  | 2.1     | 50          | Analytical       |
| 20893       | CHIRALPAK AS-3R | 3                  | 2.1     | 100         | Analytical       |
| 20894       | CHIRALPAK AS-3R | 3                  | 2.1     | 150         | Analytical       |
| 20895       | CHIRALPAK AS-3R | 3                  | 2.1     | 250         | Analytical       |

### CHIRALPAK® AY

|       |                     |    |      |     |                    |
|-------|---------------------|----|------|-----|--------------------|
| 47020 | CHIRALPAK AY        | 20 | 1 kg | –   | Bulk CSP           |
| 47225 | CHIRALPAK AY        | 20 | 4.6  | 250 | Method Development |
| 47235 | CHIRALPAK AY        | 20 | 10   | 250 | Semi-Prep          |
| 47242 | CHIRALPAK AY        | 20 | 21   | 50  | Semi-Prep Guard    |
| 47245 | CHIRALPAK AY        | 20 | 21   | 250 | Semi-Prep          |
| 47255 | CHIRALPAK AY        | 20 | 50   | 250 | Preparative        |
| 47256 | CHIRALPAK AY        | 20 | 50   | 500 | Preparative        |
| 47266 | CHIRALPAK AY        | 20 | 100  | 500 | Preparative        |
| 47275 | CHIRALPAK AY        | 20 | 30   | 250 | Semi-Prep          |
| 47935 | CHIRALPAK AY/SFC    | 20 | 10   | 250 | SFC Semi-Prep      |
| 47945 | CHIRALPAK AY/SFC    | 20 | 21   | 250 | SFC Semi-Prep      |
| 47955 | CHIRALPAK AY/SFC    | 20 | 50   | 250 | SFC Preparative    |
| 47975 | CHIRALPAK AY/SFC    | 20 | 30   | 250 | SFC Semi-Prep      |
| 4700E | CHIRALPAK AY-10     | 10 | 1 kg | –   | Bulk CSP           |
| 47G24 | CHIRALPAK AY-10/SFC | 10 | 4.6  | 150 | SFC Analytical     |
| 47G25 | CHIRALPAK AY-10/SFC | 10 | 4.6  | 250 | SFC Analytical     |
| 47G94 | CHIRALPAK AY-10/SFC | 10 | 2.1  | 150 | SFC Analytical     |
| 47G22 | CHIRALPAK AY-10/SFC | 10 | 4.6  | 50  | SFC Analytical     |
| 47G35 | CHIRALPAK AY-10/SFC | 10 | 10   | 250 | SFC Semi-Prep      |
| 47G45 | CHIRALPAK AY-10/SFC | 10 | 21   | 250 | SFC Semi-Prep      |
| 47G55 | CHIRALPAK AY-10/SFC | 10 | 50   | 250 | SFC Preparative    |
| 47G75 | CHIRALPAK AY-10/SFC | 10 | 30   | 250 | SFC Semi-Prep      |

### CHIRALPAK® AY-H

|       |                    |   |     |     |                  |
|-------|--------------------|---|-----|-----|------------------|
| 47311 | CHIRALPAK AY-H     | 5 | 4.0 | 10  | Guard Cartridges |
| 47324 | CHIRALPAK AY-H     | 5 | 4.6 | 150 | Analytical       |
| 47325 | CHIRALPAK AY-H     | 5 | 4.6 | 250 | Analytical       |
| 47335 | CHIRALPAK AY-H     | 5 | 10  | 250 | Semi-Prep        |
| 47345 | CHIRALPAK AY-H     | 5 | 20  | 250 | Semi-Prep        |
| 47375 | CHIRALPAK AY-H     | 5 | 30  | 250 | Semi-Prep        |
| 47394 | CHIRALPAK AY-H     | 5 | 2.1 | 150 | Analytical       |
| 47422 | CHIRALPAK AY-H/SFC | 5 | 4.6 | 50  | SFC Analytical   |
| 47423 | CHIRALPAK AY-H/SFC | 5 | 4.6 | 100 | SFC Analytical   |
| 47435 | CHIRALPAK AY-H/SFC | 5 | 10  | 250 | SFC Semi-Prep    |
| 47445 | CHIRALPAK AY-H/SFC | 5 | 21  | 250 | SFC Semi-Prep    |
| 47455 | CHIRALPAK AY-H/SFC | 5 | 50  | 250 | SFC Preparative  |
| 47475 | CHIRALPAK AY-H/SFC | 5 | 30  | 250 | SFC Semi-Prep    |

| PART NUMBER            | PRODUCT NAME       | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|------------------------|--------------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AY-3</b> |                    |                    |         |             |                  |
| 47511                  | CHIRALPAK AY-3     | 3                  | 4.0     | 10          | Guard Cartridges |
| 47522                  | CHIRALPAK AY-3     | 3                  | 4.6     | 50          | Analytical       |
| 47523                  | CHIRALPAK AY-3     | 3                  | 4.6     | 100         | Analytical       |
| 47524                  | CHIRALPAK AY-3     | 3                  | 4.6     | 150         | Analytical       |
| 47525                  | CHIRALPAK AY-3     | 3                  | 4.6     | 250         | Analytical       |
| 47592                  | CHIRALPAK AY-3     | 3                  | 2.1     | 50          | Analytical       |
| 47593                  | CHIRALPAK AY-3     | 3                  | 2.1     | 100         | Analytical       |
| 47594                  | CHIRALPAK AY-3     | 3                  | 2.1     | 150         | Analytical       |
| 47595                  | CHIRALPAK AY-3     | 3                  | 2.1     | 250         | Analytical       |
| 47S82                  | CHIRALPAK AY-3/SFC | 3                  | 3.0     | 50          | SFC Analytical   |
| 47S83                  | CHIRALPAK AY-3/SFC | 3                  | 3.0     | 100         | SFC Analytical   |
| 47S84                  | CHIRALPAK AY-3/SFC | 3                  | 3.0     | 150         | SFC Analytical   |

| PART NUMBER             | PRODUCT NAME    | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------------------|-----------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AY-RH</b> |                 |                    |         |             |                  |
| 47711                   | CHIRALPAK AY-RH | 5                  | 4.0     | 10          | Guard Cartridges |
| 47724                   | CHIRALPAK AY-RH | 5                  | 4.6     | 150         | Analytical       |
| 47745                   | CHIRALPAK AY-RH | 5                  | 21      | 250         | Semi-Prep Rev Ph |
| 47794                   | CHIRALPAK AY-RH | 5                  | 2.1     | 150         | Analytical       |

| PART NUMBER             | PRODUCT NAME    | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------------------|-----------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AY-3R</b> |                 |                    |         |             |                  |
| 47811                   | CHIRALPAK AY-3R | 3                  | 4.0     | 10          | Guard Cartridges |
| 47822                   | CHIRALPAK AY-3R | 3                  | 4.6     | 50          | Analytical       |
| 47823                   | CHIRALPAK AY-3R | 3                  | 4.6     | 100         | Analytical       |
| 47824                   | CHIRALPAK AY-3R | 3                  | 4.6     | 150         | Analytical       |
| 47892                   | CHIRALPAK AY-3R | 3                  | 2.1     | 50          | Analytical       |
| 47893                   | CHIRALPAK AY-3R | 3                  | 2.1     | 100         | Analytical       |
| 47894                   | CHIRALPAK AY-3R | 3                  | 2.1     | 150         | Analytical       |
| 47895                   | CHIRALPAK AY-3R | 3                  | 2.1     | 250         | Analytical       |

| PART NUMBER          | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE       |
|----------------------|---------------------|--------------------|---------|-------------|--------------------|
| <b>CHIRALPAK® AZ</b> |                     |                    |         |             |                    |
| 61020                | CHIRALPAK AZ        | 20                 | 1 kg    | –           | Bulk CSP           |
| 61225                | CHIRALPAK AZ        | 20                 | 4.6     | 250         | Method Development |
| 61235                | CHIRALPAK AZ        | 20                 | 10      | 250         | Semi-Prep          |
| 61242                | CHIRALPAK AZ        | 20                 | 21      | 50          | Semi-Prep Guard    |
| 61245                | CHIRALPAK AZ        | 20                 | 21      | 250         | Semi-Prep          |
| 61255                | CHIRALPAK AZ        | 20                 | 50      | 250         | Preparative        |
| 61256                | CHIRALPAK AZ        | 20                 | 50      | 500         | Preparative        |
| 61266                | CHIRALPAK AZ        | 20                 | 100     | 500         | Preparative        |
| 61275                | CHIRALPAK AZ        | 20                 | 30      | 250         | Semi-Prep          |
| 61935                | CHIRALPAK AZ/SFC    | 20                 | 10      | 250         | SFC Semi-Prep      |
| 61945                | CHIRALPAK AZ/SFC    | 20                 | 21      | 250         | SFC Semi-Prep      |
| 61955                | CHIRALPAK AZ/SFC    | 20                 | 50      | 250         | SFC Preparative    |
| 61975                | CHIRALPAK AZ/SFC    | 20                 | 30      | 250         | SFC Semi-Prep      |
| 6100E                | CHIRALPAK AZ-10     | 10                 | 1 kg    | –           | Bulk CSP           |
| 61G24                | CHIRALPAK AZ-10/SFC | 10                 | 4.6     | 150         | SFC Analytical     |
| 61G25                | CHIRALPAK AZ-10/SFC | 10                 | 4.6     | 250         | SFC Analytical     |
| 61G94                | CHIRALPAK AZ-10/SFC | 10                 | 2.1     | 150         | SFC Analytical     |
| 61G22                | CHIRALPAK AZ-10/SFC | 10                 | 4.6     | 50          | SFC Analytical     |

| PART NUMBER | PRODUCT NAME        | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE    |
|-------------|---------------------|--------------------|---------|-------------|-----------------|
| 61G35       | CHIRALPAK AZ-10/SFC | 10                 | 10      | 250         | SFC Semi-Prep   |
| 61G45       | CHIRALPAK AZ-10/SFC | 10                 | 21      | 250         | SFC Semi-Prep   |
| 61G55       | CHIRALPAK AZ-10/SFC | 10                 | 50      | 250         | SFC Preparative |
| 61G75       | CHIRALPAK AZ-10/SFC | 10                 | 30      | 250         | SFC Semi-Prep   |

| PART NUMBER            | PRODUCT NAME       | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|------------------------|--------------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AZ-H</b> |                    |                    |         |             |                  |
| 61311                  | CHIRALPAK AZ-H     | 5                  | 4.0     | 10          | Guard Cartridges |
| 61324                  | CHIRALPAK AZ-H     | 5                  | 4.6     | 150         | Analytical       |
| 61325                  | CHIRALPAK AZ-H     | 5                  | 4.6     | 250         | Analytical       |
| 61335                  | CHIRALPAK AZ-H     | 5                  | 10      | 250         | Semi-Prep        |
| 61345                  | CHIRALPAK AZ-H     | 5                  | 20      | 250         | Semi-Prep        |
| 61375                  | CHIRALPAK AZ-H     | 5                  | 30      | 250         | Semi-Prep        |
| 61394                  | CHIRALPAK AZ-H     | 5                  | 2.1     | 150         | Analytical       |
| 61422                  | CHIRALPAK AZ-H/SFC | 5                  | 4.6     | 50          | SFC Analytical   |
| 61423                  | CHIRALPAK AZ-H/SFC | 5                  | 4.6     | 100         | SFC Analytical   |
| 61435                  | CHIRALPAK AZ-H/SFC | 5                  | 10      | 250         | SFC Semi-Prep    |
| 61445                  | CHIRALPAK AZ-H/SFC | 5                  | 21      | 250         | SFC Semi-Prep    |
| 61455                  | CHIRALPAK AZ-H/SFC | 5                  | 50      | 250         | SFC Preparative  |
| 61475                  | CHIRALPAK AZ-H/SFC | 5                  | 30      | 250         | SFC Semi-Prep    |

| PART NUMBER             | PRODUCT NAME    | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------------------|-----------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AZ-RH</b> |                 |                    |         |             |                  |
| 61711                   | CHIRALPAK AZ-RH | 5                  | 4.0     | 10          | Guard Cartridges |
| 61724                   | CHIRALPAK AZ-RH | 5                  | 4.6     | 150         | Analytical       |
| 61745                   | CHIRALPAK AZ-RH | 5                  | 21      | 250         | Semi-Prep Rev Ph |
| 61794                   | CHIRALPAK AZ-RH | 5                  | 2.1     | 150         | Analytical       |

| PART NUMBER            | PRODUCT NAME       | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|------------------------|--------------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AZ-3</b> |                    |                    |         |             |                  |
| 61511                  | CHIRALPAK AZ-3     | 3                  | 4.0     | 10          | Guard Cartridges |
| 61522                  | CHIRALPAK AZ-3     | 3                  | 4.6     | 50          | Analytical       |
| 61523                  | CHIRALPAK AZ-3     | 3                  | 4.6     | 100         | Analytical       |
| 61524                  | CHIRALPAK AZ-3     | 3                  | 4.6     | 150         | Analytical       |
| 61525                  | CHIRALPAK AZ-3     | 3                  | 4.6     | 250         | Analytical       |
| 61592                  | CHIRALPAK AZ-3     | 3                  | 2.1     | 50          | Analytical       |
| 61593                  | CHIRALPAK AZ-3     | 3                  | 2.1     | 100         | Analytical       |
| 61594                  | CHIRALPAK AZ-3     | 3                  | 2.1     | 150         | Analytical       |
| 61595                  | CHIRALPAK AZ-3     | 3                  | 2.1     | 250         | Analytical       |
| 61S82                  | CHIRALPAK AZ-3/SFC | 3                  | 3.0     | 50          | SFC Analytical   |
| 61S83                  | CHIRALPAK AZ-3/SFC | 3                  | 3.0     | 100         | SFC Analytical   |
| 61S84                  | CHIRALPAK AZ-3/SFC | 3                  | 3.0     | 150         | SFC Analytical   |

| PART NUMBER             | PRODUCT NAME    | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE     |
|-------------------------|-----------------|--------------------|---------|-------------|------------------|
| <b>CHIRALPAK® AZ-3R</b> |                 |                    |         |             |                  |
| 61811                   | CHIRALPAK AZ-3R | 3                  | 4.0     | 10          | Guard Cartridges |
| 61822                   | CHIRALPAK AZ-3R | 3                  | 4.6     | 50          | Analytical       |
| 61823                   | CHIRALPAK AZ-3R | 3                  | 4.6     | 100         | Analytical       |
| 61824                   | CHIRALPAK AZ-3R | 3                  | 4.6     | 150         | Analytical       |
| 61892                   | CHIRALPAK AZ-3R | 3                  | 2.1     | 50          | Analytical       |
| 61893                   | CHIRALPAK AZ-3R | 3                  | 2.1     | 100         | Analytical       |
| 61894                   | CHIRALPAK AZ-3R | 3                  | 2.1     | 150         | Analytical       |
| 61895                   | CHIRALPAK AZ-3R | 3                  | 2.1     | 250         | Analytical       |

## 2018 Product List

| PART NUMBER | PRODUCT NAME | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE |
|-------------|--------------|--------------------|---------|-------------|--------------|
|-------------|--------------|--------------------|---------|-------------|--------------|

### CROWN ETHER COLUMNS

#### IMMOBILIZED CROWNPAK® CR-I

|       |                  |   |     |     |            |
|-------|------------------|---|-----|-----|------------|
| 53784 | CROWNPAK CR-I(+) | 5 | 3.0 | 150 | Analytical |
| 54784 | CROWNPAK CR-I(-) | 5 | 3.0 | 150 | Analytical |

#### COATED CROWNPAK® CR

|       |                |   |     |     |              |
|-------|----------------|---|-----|-----|--------------|
| 27711 | CROWNPAK CR    | 5 | 4.0 | 10  | Guard Column |
| 27714 | CROWNPAK CR(+) | 5 | 4.0 | 150 | Analytical   |
| 28714 | CROWNPAK CR(-) | 5 | 4.0 | 150 | Analytical   |

### ZWITTERIONIC COLUMNS

#### CHIRALPAK® ZWIX(+)

|       |                   |   |     |     |            |
|-------|-------------------|---|-----|-----|------------|
| 51334 | CHIRALPAK ZWIX(+) | 5 | 10  | 150 | Semi-Prep  |
| 51335 | CHIRALPAK ZWIX(+) | 5 | 10  | 250 | Semi-Prep  |
| 51344 | CHIRALPAK ZWIX(+) | 5 | 21  | 150 | Semi-Prep  |
| 51345 | CHIRALPAK ZWIX(+) | 5 | 21  | 250 | Semi-Prep  |
| 51514 | CHIRALPAK ZWIX(+) | 3 | 4.0 | 150 | Analytical |
| 51515 | CHIRALPAK ZWIX(+) | 3 | 4.0 | 250 | Analytical |
| 51584 | CHIRALPAK ZWIX(+) | 3 | 3.0 | 150 | Analytical |
| 51585 | CHIRALPAK ZWIX(+) | 3 | 3.0 | 250 | Analytical |

#### CHIRALPAK® ZWIX(-)

|       |                   |   |     |     |            |
|-------|-------------------|---|-----|-----|------------|
| 52334 | CHIRALPAK ZWIX(-) | 5 | 10  | 150 | Semi-Prep  |
| 52335 | CHIRALPAK ZWIX(-) | 5 | 10  | 250 | Semi-Prep  |
| 52344 | CHIRALPAK ZWIX(-) | 5 | 21  | 150 | Semi-Prep  |
| 52345 | CHIRALPAK ZWIX(-) | 5 | 21  | 250 | Semi-Prep  |
| 52514 | CHIRALPAK ZWIX(-) | 3 | 4.0 | 150 | Analytical |
| 52515 | CHIRALPAK ZWIX(-) | 3 | 4.0 | 250 | Analytical |
| 52584 | CHIRALPAK ZWIX(-) | 3 | 3.0 | 150 | Analytical |
| 52585 | CHIRALPAK ZWIX(-) | 3 | 3.0 | 250 | Analytical |

### ANION EXCHANGE COLUMNS

|       |                 |   |     |     |                  |
|-------|-----------------|---|-----|-----|------------------|
| 31311 | CHIRALPAK QD-AX | 5 | 4.0 | 10  | Guard Cartridges |
| 31324 | CHIRALPAK QD-AX | 5 | 4.6 | 150 | Analytical       |
| 31344 | CHIRALPAK QD-AX | 5 | 20  | 150 | HPLC Semi-Prep   |
| 31394 | CHIRALPAK QD-AX | 5 | 2.1 | 150 | Analytical       |
| 32311 | CHIRALPAK QN-AX | 5 | 4.0 | 10  | Guard Cartridges |
| 32324 | CHIRALPAK QN-AX | 5 | 4.6 | 150 | Analytical       |
| 32344 | CHIRALPAK QN-AX | 5 | 20  | 150 | HPLC Semi-Prep   |
| 32394 | CHIRALPAK QN-AX | 5 | 2.1 | 150 | Analytical       |

### LIGAND EXCHANGE COLUMNS

#### CHIRALPAK® MA(+)

|       |                 |   |     |    |            |
|-------|-----------------|---|-----|----|------------|
| 21822 | CHIRALPAK MA(+) | 3 | 4.6 | 50 | Analytical |
|-------|-----------------|---|-----|----|------------|

#### CHIRALPAK® WH

|       |              |    |     |     |              |
|-------|--------------|----|-----|-----|--------------|
| 25622 | CHIRALPAK WH | 10 | 4.6 | 50  | Guard Column |
| 25625 | CHIRALPAK WH | 10 | 4.6 | 250 | Analytical   |

| PART NUMBER | PRODUCT NAME | PARTICLE SIZE (µm) | ID (mm) | LENGTH (mm) | PRODUCT TYPE |
|-------------|--------------|--------------------|---------|-------------|--------------|
|-------------|--------------|--------------------|---------|-------------|--------------|

### SFC ACHIRAL COLUMNS

#### DAICEL DCPAK SFC-A

|       |                    |   |     |     |                |
|-------|--------------------|---|-----|-----|----------------|
| AA424 | DAICEL DCPak SFC-A | 5 | 4.6 | 150 | SFC Analytical |
| AA425 | DAICEL DCPak SFC-A | 5 | 4.6 | 250 | SFC Analytical |
| AA435 | DAICEL DCPak SFC-A | 5 | 10  | 250 | SFC Semi-Prep  |
| AA445 | DAICEL DCPak SFC-A | 5 | 21  | 250 | SFC Semi-Prep  |
| AA494 | DAICEL DCPak SFC-A | 5 | 2.1 | 150 | SFC Analytical |
| AA495 | DAICEL DCPak SFC-A | 5 | 2.1 | 250 | SFC Analytical |
| AAS22 | DAICEL DCPak SFC-A | 3 | 4.6 | 50  | SFC Analytical |
| AAS23 | DAICEL DCPak SFC-A | 3 | 4.6 | 100 | SFC Analytical |
| AAS24 | DAICEL DCPak SFC-A | 3 | 4.6 | 150 | SFC Analytical |
| AAS25 | DAICEL DCPak SFC-A | 3 | 4.6 | 250 | SFC Analytical |
| AAS82 | DAICEL DCPak SFC-A | 3 | 3.0 | 50  | SFC Analytical |
| AAS83 | DAICEL DCPak SFC-A | 3 | 3.0 | 100 | SFC Analytical |
| AAS84 | DAICEL DCPak SFC-A | 3 | 3.0 | 150 | SFC Analytical |
| AAS92 | DAICEL DCPak SFC-A | 3 | 2.1 | 50  | SFC Analytical |
| AAS93 | DAICEL DCPak SFC-A | 3 | 2.1 | 100 | SFC Analytical |
| AAS94 | DAICEL DCPak SFC-A | 3 | 2.1 | 150 | SFC Analytical |

#### DAICEL DCPAK SFC-B

|       |                    |   |     |     |                |
|-------|--------------------|---|-----|-----|----------------|
| AB424 | DAICEL DCPak SFC-B | 5 | 4.6 | 150 | SFC Analytical |
| AB425 | DAICEL DCPak SFC-B | 5 | 4.6 | 250 | SFC Analytical |
| AB435 | DAICEL DCPak SFC-B | 5 | 10  | 250 | SFC Semi-Prep  |
| AB445 | DAICEL DCPak SFC-B | 5 | 21  | 250 | SFC Semi-Prep  |
| AB494 | DAICEL DCPak SFC-B | 5 | 2.1 | 150 | SFC Analytical |
| AB495 | DAICEL DCPak SFC-B | 5 | 2.1 | 250 | SFC Analytical |
| ABS22 | DAICEL DCPak SFC-B | 3 | 4.6 | 50  | SFC Analytical |
| ABS23 | DAICEL DCPak SFC-B | 3 | 4.6 | 100 | SFC Analytical |
| ABS24 | DAICEL DCPak SFC-B | 3 | 4.6 | 150 | SFC Analytical |
| ABS25 | DAICEL DCPak SFC-B | 3 | 4.6 | 250 | SFC Analytical |
| ABS82 | DAICEL DCPak SFC-B | 3 | 3.0 | 50  | SFC Analytical |
| ABS83 | DAICEL DCPak SFC-B | 3 | 3.0 | 100 | SFC Analytical |
| ABS84 | DAICEL DCPak SFC-B | 3 | 3.0 | 150 | SFC Analytical |
| ABS92 | DAICEL DCPak SFC-B | 3 | 2.1 | 50  | SFC Analytical |
| ABS93 | DAICEL DCPak SFC-B | 3 | 2.1 | 100 | SFC Analytical |
| ABS94 | DAICEL DCPak SFC-B | 3 | 2.1 | 150 | SFC Analytical |

### COLUMN ACCESSORIES

|                    |  |   |      |     |                               |
|--------------------|--|---|------|-----|-------------------------------|
| 00011              | Cartridge Holder   | - | 4.0  | 10  | Holder                        |
| 00024              | Column Jacket, 15 cm   | - | 4.6  | 150 | Jacket                        |
| 00025              | Column Jacket, 25 cm   | - | 4.6  | 250 | Jacket                        |
| 00060 <sup>†</sup> | Pre Column Filter Assembly   | - | 21.2 | -   | Holder and Filter             |
| 00061              | Pre Column Filter, 2 micron  | - | 21.2 | -   | Replacement Filter            |
| 00062              | Assembly O-Rings   | - | -    | -   | Replacement O-Rings, set of 2 |
| FK002              | Guard Filter Kit<br>(1 holder, 3 glass filters, 2 fittings and 1 tubing) | - | -    | -   | Guard Filter                  |
| FR002              | Replacement Guard Filters (x6)   | - | -    | -   | Guard Filters                 |

<sup>†</sup>Free with 2 and 3 cm SFC column orders

## CHIRAL TECHNOLOGIES, INC. STANDARD TERMS AND CONDITIONS OF SALE

The following terms and conditions (the "Terms and Conditions") apply to all sales of chiral chromatography products (collectively, the "Products") by Chiral Technologies, Inc. ("CHIRAL") to its customers (each, a "CUSTOMER"). References to a "Party" or to the "Parties" herein shall mean either CHIRAL or CUSTOMER or each of them together. Each of the Parties agrees that it is entering into this agreement for the purpose of purchasing or selling, as the case may be, the Products, which the CUSTOMER shall only use for research purposes and not in connection with any other medical, clinical or other use. By ordering or accepting any Products from CHIRAL, CUSTOMER agrees to the foregoing and to be legally bound as follows:

**SECTION 1. FORMATION OF THE CONTRACT.** An agreement between the Parties, if made and entered into by way of a purchase order and an acceptance thereof, shall be deemed to have been made and entered into when CUSTOMER has issued a written purchase order and CHIRAL has issued a written acceptance of said purchase order. Any alteration and/or supplement to any purchase order shall be valid only if such alteration and/or supplement is confirmed in writing by CHIRAL.

**SECTION 2. QUOTATIONS.** Unless otherwise specified in a written statement signed by CHIRAL, no price quote by CHIRAL shall be binding. Any binding price quote given by CHIRAL shall be effective for thirty (30) days, unless otherwise specified in a written statement signed by CHIRAL.

**SECTION 3. TERMS OF PAYMENT.** CHIRAL will invoice CUSTOMER for Products upon shipment. All payments owed by CUSTOMER to CHIRAL, including, without limitation, payment for the purchase price of Products purchased, applicable taxes, and cancellation charges, are payable in U.S. Dollars and will be due thirty (30) days after the invoice date of the Products. Interest shall accrue at the rate of ten percent (10%) per annum on the amount due commencing thirty (30) days after the invoice date; provided that, in the event that such interest rate violates applicable usury laws, such rate shall be reduced to the highest rate (if any) allowed by such laws.

**SECTION 4. DELIVERY OF PRODUCTS; CANCELLATION AND DELAYED ORDERS.** CHIRAL and CUSTOMER shall agree on a mutually convenient delivery schedule for Products. All Products shall be shipped F.O.B. CHIRAL's facility. CHIRAL reserves the right to ship Products prior to the agreed shipment date in order to accommodate CHIRAL's overall delivery schedules. CUSTOMER shall have no right to cancel any purchase order or to reschedule any scheduled delivery of Products covered by a purchase order, except with CHIRAL's written permission.

**SECTION 5. INSPECTION.** Upon receipt of Products, CUSTOMER shall promptly inspect such Products. If upon such inspection, CUSTOMER finds any Products to be defective, CUSTOMER shall promptly provide CHIRAL with written notification of such condition.

**SECTION 6. TRADEMARKS.** CUSTOMER shall not remove from the Products (or their packaging or documentation), or alter, any of CHIRAL's trademarks, trade names, logos, patent or copyright notices, or other notices or markings, or add any other notices or markings to the Products, without the prior express written consent of CHIRAL.

### SECTION 7. LIMITED WARRANTY.

**A. WARRANTY TERMS.** Subject to the provisions of this Section 7 and Section 8 below, with respect to each Product sold by CHIRAL hereunder, CHIRAL warrants that for a period of one (1) year from the date of sale (the "Warranty Period") such Product shall be free from defects in materials or faulty workmanship and shall comply with quality specifications for such Product published by CHIRAL. The warranties provided by CHIRAL in this Section 7.A are the only warranties provided by CHIRAL with respect to the Products sold hereunder, and may be modified or amended only by a written instrument signed by CHIRAL and accepted by CUSTOMER.

**B. WARRANTY CLAIMS.** If, during the applicable Warranty Period for a Product sold by CHIRAL hereunder, it is determined that Product does not conform to the limited warranty set forth in Section 7.A, then CUSTOMER shall notify CHIRAL of such condition and request authorization to return the Product to exercise the CUSTOMER'S warranty rights. CUSTOMER may, after obtaining a return authorization number and shipping instructions from CHIRAL, return such Product to CHIRAL. Upon receipt of any such Product during the applicable Warranty Period, CHIRAL shall, at its option and expense (1) repair or replace such Product, and ship such Product to the location from which it was returned to CHIRAL, or (2) give CUSTOMER a credit for such Product. All replaced Products or Products returned to CHIRAL for credit shall become CHIRAL's property. Repair or replacement of a Product does not extend the Warranty Period for such Product.

**C. OTHER LIMITATIONS.** THE EXPRESS LIMITED WARRANTIES OF CHIRAL STATED IN SECTION 7.A ABOVE DO NOT APPLY TO (1) PROTEIN-BASED PRODUCTS, (2) PRODUCTS USED FOR MEDICAL, CLINICAL OR ANY OTHER USE OTHER THAN RESEARCH USE, (3) PRODUCTS WHICH HAVE BEEN IMPROPERLY TRANSPORTED, INSTALLED OR USED, STORED, ALTERED, MODIFIED, REPAIRED OR SERVICED IN ANY RESPECT, EXCEPT BY CHIRAL OR ITS REPRESENTATIVES, (4) PRODUCTS WHERE SERIAL NUMBERS HAVE BEEN REMOVED OR ALTERED, (5) PRODUCTS USED BY ANY PERSON OR ENTITY OTHER THAN CUSTOMER, OR (6) PRODUCTS THE INVOICE FOR WHICH HAS NOT BEEN PAID IN FULL IN ACCORDANCE WITH THE PAYMENT TERMS. NO ACTION BY CUSTOMER ARISING UNDER SECTION 7.A ABOVE OR OTHERWISE IN CONNECTION WITH THE SALE OF THE PRODUCTS MAY BE BROUGHT MORE THAN ONE (1) YEAR AFTER THE CAUSE OF ACTION FIRST ARISES.

**D. DISCLAIMER.** THE EXPRESS WARRANTIES OF CHIRAL STATED IN SECTION 7.A ABOVE ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS. THE EXPRESS OBLIGATIONS OF CHIRAL STATED IN SECTION 7.A ABOVE ARE IN LIEU OF ANY OTHER LIABILITY OR OBLIGATION OF CHIRAL, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY OR OBLIGATION FOR DAMAGE, LOSS OR INJURY (WHETHER DIRECT, INDIRECT, EXEMPLARY, SPECIAL, CONSEQUENTIAL OR INCIDENTAL) ARISING OUT OF OR IN CONNECTION WITH THE DELIVERY, USE OR PERFORMANCE OF THE PRODUCTS.

**SECTION 8. LIMITATION OF LIABILITY.** NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THESE TERMS AND CONDITIONS, CHIRAL SHALL NOT BE LIABLE FOR ANY EXEMPLARY, SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND (INCLUDING, WITHOUT LIMITATION, LOST PROFITS), EVEN IF CHIRAL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING STATES THE ENTIRE LIABILITY OF CHIRAL WITH REGARD TO THESE TERMS AND CONDITIONS AND THE PRODUCTS. THE LIMITATIONS OF LIABILITY CONTAINED IN SECTION 7 AND THIS SECTION 8 ARE A FUNDAMENTAL PART OF THE BASIS OF CHIRAL'S BARGAIN HEREUNDER, AND CHIRAL WOULD NOT SELL THE PRODUCTS ABSENT SUCH LIMITATIONS.

### SECTION 9. GENERAL.

**A. ENTIRE AGREEMENT.** These Terms and Conditions constitute the final, complete and exclusive agreement between the Parties relating to the subject matter hereof, and supersede all prior or contemporaneous proposals, understandings, representations, warranties, promises and other communications, whether oral or written, relating to such subject matter (including, without limitation, any prior "Standard Terms and Conditions" published by CHIRAL). Except for agreements of the Parties set forth in writing and signed by an authorized representative of CHIRAL relating to the type, quantity, quality/specifications, delivery, forecasting schedule and pricing of any Product, any term or condition in any purchase order, confirmation or other document furnished by CUSTOMER at any time which is in any way inconsistent with or in addition to the terms and conditions set forth herein is hereby expressly rejected, and CHIRAL's acceptance of any purchase order of CUSTOMER is expressly made in reliance on CUSTOMER'S assent to all terms and conditions hereof. No deviation from these Terms and Conditions shall be valid unless confirmed in writing by an authorized representative of CHIRAL.

**B. GOVERNING LAW.** These Terms and Conditions shall for all purposes be governed by and interpreted in accordance with the laws of the State of Pennsylvania without regard to any choice of law provision that would result in the application of the laws of any jurisdiction other than the internal laws of the State of Pennsylvania to these Terms and Conditions. The Parties expressly exclude application of the United Nations Convention on Contracts for the International Sale of Goods.

**C. ARBITRATION.** If a dispute arises related to the purchase and sale of the Products and the Parties have not resolved such dispute through negotiation, the Parties agree to submit the dispute to arbitration. Any arbitration proceeding relating to the Agreement shall be presided over by one arbitrator who shall be agreed to by the Parties, provided that if the Parties are unable to agree on an arbitrator, then each Party shall name one arbitrator and the two arbitrators will together designate a third arbitrator, and the three arbitrators so chosen shall preside over the arbitration proceeding. The arbitration shall be held in Pennsylvania in accordance with the rules of the American Arbitration Association. Arbitration proceedings shall be conducted in the English language. Each Party agrees that the final determination/decision of the arbitrators presiding over the proceeding shall be binding on it. Notwithstanding the foregoing, the Parties may apply to any court of competent jurisdiction for preliminary or interim equitable relief, without breach of this arbitration provision. The prevailing Party in any dispute related hereto, whether in a court of law or in arbitration, shall have its reasonable costs and expenses related to such dispute reimbursed by the non-prevailing Party.

**D. SEVERABILITY.** If any provision of these Terms and Conditions is held by a court of competent jurisdiction to be unenforceable for any reason, the remaining provisions hereof shall be unaffected and remain in full force and effect.

**E. MODIFICATIONS.** Neither Party may modify, amend, supplement or otherwise change these Terms and Conditions without the prior written consent of the other Party. Any such future modification, amendment, supplement or other change (a "Change") shall apply only with respect to orders accepted after the effective date of such Change. All waivers must be in writing.

**F. ASSIGNMENTS.** No right of either Party under these Terms and Conditions shall be assigned or otherwise transferred without the prior express written consent of the other Party, and any attempt to assign or otherwise transfer any rights hereunder, without such consent, shall be void. Subject to the preceding sentence, these Terms and Conditions shall bind the Parties hereto and their permitted successors and assigns.

**G. MISCELLANEOUS.** These Terms and Conditions are not intended to provide any rights or remedies to any person or entity other than CHIRAL and CUSTOMER and their respective permitted successors and assigns (if any).

**H. FORCE MAJEURE.** CHIRAL shall not be responsible for any failure to fulfill its obligations hereunder due to causes beyond its reasonable control, including, without limitation, as a result of fire, explosion, earthquake, storm, flood or other weather, unavailability of necessary utilities or raw materials, strike, lockout, unavailability of components, activities of a combination of workmen or other labor difficulties, war, insurrection, riot, act of God or the public enemy, law, act, order, omission, export control regulation, proclamation, decree, regulation, ordinance, or instructions of Government or other public authorities, or judgment or decree of a court of competent jurisdiction. If any such contingency occurs, CHIRAL may elect to either (a) suspend its obligations for the duration of the delaying cause, or (b) extend the time period to complete its obligations by the length of time the contingency endures. In the event of CHIRAL'S inability to supply any or all of the Products due to any of the above circumstances, CHIRAL will have the right to allocate its available supply among its CUSTOMERS, or any of them, as CHIRAL, in its sole discretion, elects without liability to CUSTOMER for any failure of performance that may result therefrom. To the extent that no allocation is made to CUSTOMER, either CUSTOMER or CHIRAL will have the right to terminate any affected purchase orders by prompt written notice to the other.

**I. CONSTRUCTION AND SURVIVAL.** Notwithstanding anything to the contrary contained in herein, these Terms and Conditions shall survive the purchase and sale of the Products hereunder.



**CHIRAL TECHNOLOGIES, INC.**

800 North Five Points Road  
West Chester, PA 19380

Tel: +1-610-594-2100

Fax: +1-610-594-2325

Email: [chiral@chiraltech.com](mailto:chiral@chiraltech.com)

[WWW.CHIRALTECH.COM](http://WWW.CHIRALTECH.COM)

CHIRALPAK, CHIRALCEL,  
and CROWNPAK are registered  
trademarks of DAICEL CORPORATION.  
© 2018 CHIRAL TECHNOLOGIES, INC.