

# Synthesis scale vs Guaranteed yield

The **synthesis scale** refers to the **amount of raw material** used to start the synthesis of oligonucleotides.

The **yield** corresponds to the amount of **final product**

recovered at the end of the synthesis and purification processes.

The length, the sequence, the type/number of modifications and the purification, strongly

influence the reaction yield.

Based on that, Eurogentec defined a minimum guaranteed yield in nmoles for all product categories (see table below).

The minimum guaranteed yields represent only a reference because the delivered quantities may vary.

|                         |   |        | Synthesis scale (nmol)                                  |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
|-------------------------|---|--------|---|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|-----|------|------|------|-----|------|------|------|
|                         |   |        | 10  |               | 40                 |               | 200                |               | 1000               |               | 2500               |               | 5000               |               | 10000              |               | 20000              |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
| Range                   | Product   | Length | SePOP   |               | RP-Cartridge-Gold™ |               | RP-Cartridge-Gold™ |               | RP-Cartridge-Gold™ |               | RP-Cartridge-Gold™ |               | RP-Cartridge-Gold™ |               | RP-Cartridge-Gold™ |               | RP-Cartridge-Gold™ |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
|                         |   |        | RP (or IEX)   | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) | RP (or IEX)        | HPLC (or IEX) |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
| Custom Oligonucleotides | Non-Modified (DNA only)   | 5-9    | -   | -             | -                  | -             | -                  | -             | 60                 | 50            | 30                 | 20            | 15                 | -             | 180                | 100           | 80                 | 40            | 40         | -   | 450 | 200 | 100 | 100 | 900 | 400 | 200 | 200 | 1800 | 800  | 400  | 400  | -   | -    | -    |      |     |      |      |      |
|                         |   | 10-19  | 5   | 4             | -                  | -             | -                  | -             | 20                 | 16            | 10                 | 4             | 3                  | 70            | 60                 | 45            | 30                 | 23            | 15         | 200 | 140 | 100 | 70  | 50  | 30  | 500 | 250 | 125 | 125  | 2000 | 1000 | 500  | 500 | 4200 | 2100 | 1050 |     |      |      |      |
|                         |   | 20-39  | 5   | 4             | -                  | -             | -                  | -             | 20                 | 16            | 10                 | 4             | 2                  | 60            | 50                 | 30            | 20                 | 15            | 10         | 190 | 120 | 90  | 40  | 45  | 20  | 475 | 225 | 115 | 115  | 1000 | 500  | 250  | 250 | 2000 | 1000 | 500  | 500 | 4200 | 2100 | 1050 |
|                         |   | 40-59  | 3   | 2             | -                  | -             | -                  | -             | 10                 | 8             | 5                  | 2             | 1                  | 30            | 25                 | 15            | 12                 | 7             | 6          | 115 | 60  | 45  | 20  | 20  | 12  | 285 | 110 | 55  | 55   | 600  | 230  | 115  | 115 | 1200 | 460  | 230  | 230 | 2500 | 1000 | 500  |
|                         |   | 60-79  | 2   | 2             | -                  | -             | -                  | -             | 8                  | 6             | -                  | 2             | -                  | 20            | 18                 | -             | 8                  | -             | 4          | 75  | 40  | -   | 14  | -   | 8   | 185 | -   | -   | 40   | 350  | -    | -    | 90  | 750  | -    | -    | 180 | 1500 | -    | -    |
|                         |   | 80-99  | -   | -             | -                  | -             | -                  | -             | -                  | -             | -                  | 1             | -                  | -             | -                  | -             | -                  | 3             | -          | 2   | -   | -   | -   | 5   | -   | 3   | -   | -   | -    | -    | -    | 40   | -   | -    | -    | 80   | -   | -    | -    |      |
|                         | 100-139   | -      | -   | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | 2                  | -             | 1          | -   | -   | -   | 3   | -   | 2   | -   | -   | -   | 10   | -    | -    | -    | 20  | -    | -    | -    | 40  | -    | -    | -    |
|                         | (including DNA, RNA, 2' O-Me RNA, LNA* and phosphorothioate linkages) | 10-19  | -   | -             | -                  | -             | 3                  | -             | -                  | -             | -                  | 12            | -                  | 6             | -                  | -             | -                  | 25            | -          | 12  | -   | -   | 60  | 30  | 30  | -   | 125 | 60  | 60   | -    | 250  | 125  | 125 | -    | -    | -    | -   |      |      |      |
|                         |   | 20-59  | -   | -             | -                  | -             | 8                  | 5             | 4                  | 3             | 1                  | 35            | 20                 | 17            | 15                 | 8             | -                  | 70            | 40         | 35  | 30  | 15  | -   | 175 | 90  | 45  | 45  | 500 | 190  | 95   | 95   | 1000 | 380 | 190  | 190  | 2000 | 760 | 380  |      |      |
|                         |   | 60-139 | -   | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -          | -   | -   | -   | -   | -   | 15  | -   | -   | -   | 30   | -    | -    | -    | 60  | -    | -    | -    | 60  | -    | -    | -    |
| Real-Time qPCR Probes   | Double-Dye probes (2)   | 8-45   | -   | -             | <2(4)              | -             | -                  | 4             | -                  | -             | -                  | -             | 12                 | -             | -                  | -             | -                  | -             | -          | 25  | -   | -   | -   | -   | 65  | -   | -   | -   | 135  | -    | -    | -    | 275 | -    | -    | -    | 600 | -    | -    |      |
|                         | Molecular Beacons   | 28-50  | -   | -             | -                  | -             | -                  | 1             | -                  | -             | -                  | -             | -                  | 4             | -                  | -             | -                  | -             | -          | -   | 12  | -   | -   | -   | -   | 30  | -   | -   | -    | 65   | -    | -    | -   | 130  | -    | -    | -   | 275  | -    | -    |
|                         | MGB Taqman Probes   | 8-30   | Delivered quantity: 6, 20 or 50 nmol                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
|                         |   |        | Delivered Quantity (nmol)                               |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               | On Request |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
| RNAi Oligonucleotides   | siRNA Duplexes Non-Modified (5)                                       | 21-27  | 7   | -             | 3                  | 22            | -                  | 12            | -                  | -             | 60                 | -             | 40                 | -             | -                  | 200           | -                  | 80            | -          | -   | -   | -   | -   | -   | -   | -   | -   | -   | -    | -    | -    | -    | -   | -    | -    | -    | -   | -    |      |      |
|                         | siRNA Duplexes Modified (1)   | 21-27  | 7   | -             | 3                  | 22            | -                  | 12            | -                  | -             | 60                 | -             | 40                 | -             | -                  | 200           | -                  | 80            | -          | -   | -   | -   | -   | -   | -   | -   | -   | -   | -    | -    | -    | -    | -   | -    | -    | -    | -   | -    |      |      |
| NGS Oligonucleotides    | RP-Cartridge purified   | 20-85  | Minimum delivered quantity: 10 nmol                     |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
|                         | RP-HPLC purified  |        |   |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |
| Universal Primers       | -   | 15-38  | -   | -             | -                  | 5             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -                  | -             | -          | -   | -   | -   | -   | -   | -   | -   | -   | -   | -    | -    | -    | -    | -   | -    | -    | -    | -   |      |      |      |
| Unique Oligonucleotides | -   | 2-225  | On request - please contact us at unique@eurogentec.com |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |                    |               |            |     |     |     |     |     |     |     |     |     |      |      |      |      |     |      |      |      |     |      |      |      |

Minimum Guaranteed Yield

## Post-synthesis modifications may yield 50% less than the above stated values.

Table: (1) Between 5 and 59 bases length single-modified Oligonucleotides. Eurogentec does not provide minimum guaranteed yield for modified oligonucleotides greater than 59 bases. Post-synthesis modifications are not compatible with SePOP and RP-Cartridge-Gold™ purification. A lower yield may result from poly-modifications and/or strong secondary structures.

(2) Double-Dye probes only result from the combination of a 5' fluorescent dye and a 3' quencher.

(3) Except for oligonucleotides with GC-rich regions.

(4) Only available for Double-Dye FAM-TAMRA 10 nmol and FAM-BHQ1 10 nmol.

(5) Non-modified siRNA's only include 3' dTdT overhang.

(6) Please be aware that all purifications containing an IEX-HPLC are limited to a length up to 39 bases.

### List of the post-synthesis modifications

- > 5' Alexa Fluor® (350, 430, 488, 500, 514, 532, 546, 555, 568, 594, 610, 633, 647, 660, 680, 700 and 750)
- > 5' ATTO (390, 425, 465, 488, 495, 520, 532, 550, 565, 590, 594, 610, 620, 633, 635, 647N, 655, 680, 700, 725 and 740)
- > 5' BODIPY® (530/550, FL and TR)
- > 3', 5' and dT Cascade Blue®
- > 3' and dT Cy® (3, 3.5, 5 and 5.5)
- > 3', 5', dR and dT Digoxigenin
- > 5' Dragonfly Orange®
- > 5' DY-(681, 781 and 782)
- > dR 6-FAM
- > dR and dT HEX
- > 5' Hilyte™ Fluor (405, 488, 555, 594, 647, 680 and 750)
- > 3', dR and dT JOE
- > 5' Marina Blue®
- > 5' Oregon Green® (488 and 488 X)
- > 5' Pacific Blue™
- > 3' QXL®
- > 3', 5', dR and dT Rhodamine 6G
- > 3', 5', dR and dT ROX
- > 5' TAMRA
- > dR and dT TET
- > 3', 5', dR and dT Texas Red®

