



Reagents for DNA Synthesis

General parameters

CPG/Supports

CPG/Supports are carriers for automated DNA synthesis. Usually, derivatised Controlled Pore Glass (CPG) is used. The 500 Å supports are suitable for almost all applications. In order to avoid steric obstacles between the growing oligonucleotide chains and thus obtain the highest possible yield of full-length chains, a long-chain alkyl-amine "spacer arm" is used.

CPG loading for 500 Å Supports is 30-40 µmol/g

BCE-Phosphoramidite

For the chemical synthesis of oligonucleotides, phosphoramidites are used as nucleotide analogs. In order to prevent side reactions at other reactive nucleophilic groups (e.g. hydroxyl or amino groups), protective groups are added to these nucleophilic groups. Two nucleophilic groups (usually two hydroxy groups) remain unprotected, and are used for the generation of the phosphoramidite.

Our BCE-phosphoramidites are suitable for PerSeptive Expedite™ of the series 89xx and PolyGen® Synthesizer.

DMT removal reagents

Dimethoxytrityl is a protective group for hydroxyl groups. It is used to protect the 5' OH group of individual nucleotides during DNA synthesis. The protective group is acid-labile, and is removed during the synthesis reaction by the addition of trifluoroacetic acid (de-protection), to enable coupling of the subsequent nucleotide.

The DMT removal reagents we provide are dichloroethane (K060) and dichloromethane (2257). DMT in DCE is used for synthesizers that draw up the solution from bottles via vacuum pumps and push it through the reaction column. These vacuum pumps exert a significant force, thus the DCE with its high boiling pressure is well suited, as it can be drawn up without the generation of air bubbles that may be introduced into the reaction. The use of DMT in DCM could interfere with the reaction by the development of air bubbles.

Solvents for DNA synthesis

- Every reagent is specially purified for the DNA synthesis reaction
- Every Lot is tested for maximum yield on the synthesiser
- Care taken during production, examination and packing guarantees compliance with the quality standards DNA Synthesis Grade.





Well advised with Roth.

Technical Info

Starter Kit

The following compilation enables the DNA synthesis of 100 30mers.

PerSeptive Expedite™ instruments of the series 89xx require bottles with a thread diameter of 27 to 28 mm. ABI™ instruments of the series 39xx require a diameter of 23,5 mm and can therefore no longer be fitted with our reagent bottles.

Polygen® instruments offer both connection options for ‚27/28 mm‘ and ‚19/20 mm‘.

Product	PU	Art.-Nr.	RO ¹	Thread size
Adenosine-CPG-Support (500 Å)	1 g	2318.3	1	-
Cytidine-CPG-Support (500 Å)	1 g	2319.3	1	-
Guanosine-CPG-Support (500 Å)	1 g	2320.3	1	-
Thymidine-CPG-Support (500 Å)	1 g	2321.3	1	-
Adenosine-BCE-phosphoramidit	1 g	K921.1	5	19 mm ³
Cytidine-BCE-phosphoramidit	1 g	K922.1	5	19 mm ³
Guanosine-BCE-phosphoramidit	1 g	K923.1	5	19 mm ³
Thymidine-BCE-phosphoramidit	1 g	K924.1	5	19 mm ³
Activation Reagent	200 ml	2253.1	2	27 mm ⁴
	450 ml	2253.2	1	27 mm ⁴
Oxidation Reagent ²	200 ml	2254.1	2	27 mm ⁴
	450 ml	2254.2	1	27 mm ⁴
Capping Reagent I ²	200 ml	2255.1	4	27 mm ⁴
	450 ml	2255.2	2	27 mm ⁴
Capping Reagent II ²	200 ml	2256.1	2	27 mm ⁴
	450 ml	2256.2	1	27 mm ⁴
DMT-Removal-DCE (3% TCA in DCE) ² , recommended for Polygen ® Synthesiser	450 ml	K060.1	1	27 mm ⁴
Acetonitrile (water content ≤10 ppm)	2,5 l	8824.2	2	-
Molecular sieve 3 Å (activated)	100 ml	N893.1	5	27 mm ⁴
Ammonia solution 32 %	200 ml	A990.1	1	27 mm ⁴
Acetonitrile (water content ≤30 ppm)	100 ml	3620.1	5	Septum
Single use syringes, with Luer lock, 20 ml	100 Stck	0059.1	1	-
Single use cannula Sterican®, long cut	100 Stck	C721.1	1	-
PCR-tubes (0,2 ml)	1000 Stck	XT87.1	1	-

¹) RO = recommended ordering quantity.

²) Larger bottles (e.g.. 2,5 L) are available and can generally be used with all instruments.

³),19 mm⁴ is suited for all device connections with an internal thread of 19-20 mm.

⁴),27 mm⁴ is suited for all device connections with an internal thread of 27-28 mm. These bottles can be used with Polygen® and some Expedite™ devices.

Further product information and safety advice is available in our catalogue or webshop in the chapter Chemicals A-Z and Organic & Bioorganic Chemicals / DNA Synthesis.

gh 05/2020