

Application Note

SERVA GeTMN Native Gel Starter Kit Starter Kit for *Blue* and *Clear Native PAGE*

1. Introduction

1.1. Native gel electrophoresis

The analysis of protein mixtures is routinely performed using SDS-PAGE. Because of the denaturing method, the analysis of multi protein complexes is not possible. Protein separation and analysis using native/non-denaturing conditions can be performed by using different methods, e.g. *Blue Native* or *Clear Native* electrophoresis.

1.2. *Blue Native* gel electrophoresis

Performing *Blue Native* gel electrophoresis, the detergent SDS is substituted by Coomassie Brilliant Blue G250/SERVA Blue G. This dye is also negatively charged. Dye-binding to proteins leads to negatively charged protein dye complexes. The native structure of the proteins is preserved because the dye does not act as a detergent. At physiological pH, the protein-dye-complexes migrate pI-independently towards the anode. The repulsion between the negatively charged protein dye complexes leads to a high selectivity.

1.3. *Clear Native* gel electrophoresis

The *Clear Native* gel electrophoresis works without using an anionic dye. Therefore, this method can be used for separation of proteins with pI<7 at physiological pH when dyes may interfere with further analytical methods.

2. General Information

The SERVA GeTMN Native Gels are ready-to-use native vertical gels for *Blue* and *Clear Native* electrophoresis.

These gels are also included in the SERVA GeTMN Native Gel Starter Kit. This kit contains also electrophoresis cathode and anode buffer as well as two different sample buffers to perform *Blue Native* (BN) and *Clear Native* (CN) gel electrophoresis.

2.1. Benefits for the user:

- simple, fast handling
- high resolution, sharp bands, best reproducibility
- made from top-quality chemicals
- gels prepared in unbreakable, leakage-free plastic cassettes
- long separation distance, cm-scale at front of cassette allows reproducible runs
- marking of anode and cathode for error-free assignment
- extra tool provided for easy and safe opening of cassette at the end of run
- compatible with many commercially available electrophoresis tanks (e.g. Hoefer Mighty SmallTM SE 260, Hoefer miniVETM, etc.)

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2.2. Kit Components

SERVA Ge TM N 3-12, Vertical Native Gel 3-12%	2 pieces
SERVA Ge TM N 4-16, Vertical Native Gel 4-16%	2 pieces
Tool for gel cassette opening	1 piece
10x Native Anode Buffer for BN/CN	250 ml
10x Native Cathode Buffer for BN/CN	250 ml
SERVA Native Marker Liquid Mix for BN/CN	50 µl
2x Sample Buffer Blue Native	2 ml
2x Sample Buffer Clear Native	2 ml
1% SERVA Blue G solution for BN	5 ml

The precast gels are manufactured according to proprietary methods developed by SERVA Electrophoresis GmbH and subject to strict quality control. Each production batch has assigned a unique lot number. In the event of queries, please quote this lot number along with the catalogue number.

Please note:

Reagents for gel staining are not included. These products have to be ordered separately.

2.3. Gel Cassette

Outer dimensions	: 10 cm x 10 cm
Number of sample wells	: 10
Volume per well	: 50

2.4. Gel

Material	: Acrylamide : N,N'-Methylenbisacrylamide
Thickness of gel layer	: 1 mm

2.5. Composition of gels

Acrylamide concentration (T): 3-12 % / 4-16 %
Cross linker concentration (C): 2.6 %

Storage Conditions:

Kit component	Storage temperature
10x Native Anode and Cathode Buffer for BN/CN	+15 °C - +30 °C
SERVA Ge TM N Native Gele	2 – 8 °C
2x Sample Buffer Blue Native	-25 °C - -15 °C
2x Sample Buffer Clear Native	-25 °C - -15 °C
SERVA Native Marker Liquid Mix for BN/CN	-25 °C - -15 °C
1% SERVA Blue G solution for BN	+15 °C - +30 °C

Do **not** freeze the gels or leave them at room temperature for longer periods as this may impair their separation properties. If stored at the recommended temperature at least useable until: see expiry date on package.