GelPilot® Small Fragment Agarose

For high-resolution separation of nucleic acids (20–800 bp fragments)

GelPilot Small Fragment Agarose is a high-quality agarose of intermediate melting temperature. It offers unique resolution capabilities and meets the stringent requirements for nucleic acid applications. It is highly suitable for electrophoretic separation and analysis of nucleic acid fragments <1000 bp in size. GelPilot Small Fragment Agarose forms a clear and highly resolving gel which can separate DNA fragments down to a 2% difference between 200 bp and 800 bp. It is easy to prepare and cast. Due to its high-resolution capabilities, GelPilot Small Fragment Agarose is suitable for separation of amplified products as well as STRs and tri- and tetranucleotide repeats. DNA binding does not occur and no DNase and RNase activity is detected.

For superior resolution of high-molecular-weight DNA fragments (>1000 bp in size), GelPilot LE Agarose (cat. no. 129814) is recommended.

Specifications

Gelling temperature (dynamic measurement in 3% solution)	<36°C
Melting temperature (3% solution)	≤75 °C
Gel strength (3% gel)	≥300 g/cm^2

Safety Information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs). These are available online in convenient and compact PDF format at www.qiagen.com/Support/MSDS.aspx where you can find, view, and print the MSDS for each QIAGEN kit and kit component.

24-hour emergency information

Emergency medical information in English, French, and German can be obtained 24 hours a day from:

Poison Information Center Mainz, Germany

Tel: +49-6131-19240

Quality Control

In accordance with QIAGEN's ISO-certified Quality Management System, each lot of GelPilot Small Fragment Agarose is tested against predetermined specifications to ensure consistent product quality.

Table 1. Suggested agarose concentrations

	Final agarose concentration (%)	
Size range (bp)	**1x TAE Buffer**	**1x TBE Buffer**
150–800	2	1.8
100–600	3	2
50–250	4	3
20–130	5	4
<80	–	5

Table 2. Migration of double-stranded DNA in relation to Xylene Cyanol (XC) and Bromophenol Blue (BPB)

1x TAE Buffer			1x TBE Buffer	
XC	**BPB**	**Agarose (%)**	**XC**	**BPB**
480	70	2	310	40
200	40	3	140	35
120	35	4	85	30
85	30	5	60	15

Protocol: Agarose preparation using a microwave or hotplate

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. Guard yourself and others against scalding solutions.

Procedure

1. **Choose a heat-resistant beaker or flask that is 2–4 times the volume of the solution.**
2. **Add chilled 1x or 0.5x electrophoresis buffer and a stir bar to the beaker/flask.**
3. **Slowly sprinkle in the agarose powder while the solution is rapidly stirred.**
4. **If using a microwave, follow steps 5 and 6 before proceeding with step 7. If using a hotplate, directly proceed with step 7.**
5. **Remove the stir bar if it is not coated with Teflon®.**
6. **Soak the agarose in the buffer for 15 min before heating.**
   This reduces the tendency of the agarose solution to foam during heating.
7. **Weigh the beaker/flask and solution before heating.**
8. **Cover the beaker/flask with plastic wrap.**
   Note: Pierce a small hole in the plastic wrap for ventilation.
9. **If using a microwave, follow these additional steps to prevent the agarose solution from foaming during melting/dissolution (for agarose concentrations >4%).**

- Heat the beaker/flask in the microwave on medium power for 1 min
- Remove the solution from the microwave
- Allow the solution to sit on the bench for 15 min

10. **If using a microwave, perform steps 11–16 before proceeding with step 18. If using a hotplate, perform step 17 before proceeding with step 18.**
11. **Heat the beaker/flask in the microwave on medium power for 2 min.**
12. **Remove the beaker/flask from the microwave.**

    IMPORTANT: Any microwaved solution may become superheated and foam over when agitated.
13. **Gently swirl the beaker/flask to resuspend any settled powder and gel pieces.**

    IMPORTANT: Swirl carefully to avoid splashing the hot solution.
14. **Reheat the beaker/flask on high power until the solution comes to a boil.**
15. **Hold at boiling point for 1 min or until all particles are dissolved.**
16. **Remove the beaker/flask from the microwave and gently swirl to thoroughly mix the agarose solution.**

    IMPORTANT: Swirl carefully to avoid splashing the hot solution.
17. **If using a hotplate, bring the solution to a boil while stirring and maintain gentle boiling until all the agarose is dissolved (approximately 10 min).**

18. **After dissolution, add sufficient hot distilled water to obtain the initial weight.**
19. **Mix thoroughly.**
20. **Cool the solution to 50–60°C prior to casting.**
21. **Once the gel is cast, allow the molten agarose to cool and gel at room temperature.**
    Note: The gel must then be placed at 4°C for 20 min to obtain optimal resolution and gel handling characteristics.

Ordering Information

Product	Contents	Cat. no.
GelPilot Small Fragment Agarose (100 g)	100 grams of high-quality agarose for separation and analysis of small fragments (20–800 bp)	129832
GelPilot Small Fragment Agarose (500 g)	500 grams of high-quality agarose for separation and analysis of small fragments (20–800 bp)	129834
Related products		
GelPilot LE Agarose (500 g)	500 grams of high-quality, molecular biology grade agarose for any DNA or RNA application (resolution range of 100 bp–23 kb)	129814

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

www.qiagen.com

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