

FlashGel® System Quick Start Guide

For standard FlashGel® Cassettes (Cat. no. 57023, 57029, 57031, 57032, 57027, 57028)

Guidelines and instructions for use

For complete safety information, please refer to the FlashGel® System Manual – Your guide to setup and usage of the FlashGel® System.

Important points

- Do not exceed 5 µL sample volume per lane for 12 + 1 well and 16 + 1 well cassettes; or 12 µL sample volume per lane for 8 + 1 well cassettes.
- Optimal sample concentrations are approximately 1/5 the typical per-band concentration of an ethidium bromide gel.
- Flood sample wells with water prior to loading, then load samples into wells filled with water.
- For best results, use FlashGel® Loading Dye and FlashGel® Markers. For sample recovery, use FlashGel® Recovery Buffer.
- Use the FlashGel® Mask when running double-tier cassettes.
- Use the FlashGel® Visualization Glasses when recovering samples.

Instructions

1. Refer to Table 1 for recommended sample preparation and run conditions.
2. Remove white well seals and tear-off vent seals from cassette. Do not remove the black tips of vent seals remaining on the cassette.
3. Flood sample wells with distilled or deionized water. Tilt cassette to move excess fluid to the edge and blot off with a lint-free wipe. Do not blot wells directly. Leave wells filled with water for sample loading.
4. Insert cassette into dock. Insert FlashGel® Mask under the central tier of sample wells if using double-tier or recovery cassettes.
5. Load samples. Samples to be recovered should be loaded in upper tier sample wells.
6. Plug in high voltage cables, turn on power supply and set to recommended voltage.
7. Plug in low voltage power supply and turn on light as needed during the run.
8. **A) If using standard FlashGel® DNA and RNA cassettes:** run for recommended time or until separation of desired fragments is complete. **Proceed directly to step 13.**
B) For FlashGel® Recovery Cassettes: run and observe migration of sample. Immediately prior to desired sample reaching recovery wells (2nd-tier), stop the run and disconnect the high voltage cables. **See complete details in steps 9 to 13.**
9. Blot excess buffer from the recovery well(s) and add 20 µL of FlashGel® Recovery Buffer.
10. Remove FlashGel® Mask, reconnect voltage cables, and restart power. Use FlashGel® Visualization Glasses to observe band migration.
11. When the band of interest has migrated to the center of the recovery well, turn off power supply and disconnect voltage cables. Use a pipette to carefully remove the recovery buffer (containing the DNA) from the recovery well.
12. If necessary, steps 9 to 11 (addition of recovery buffer, electrophoresis, and recovery) may be repeated to increase recovery of higher DNA loads.
13. Photograph using FlashGel® Camera, or other standard camera and transilluminator.

Table 1. Recommended sample preparation and run conditions

	DNA Cassettes	RNA Cassettes	Recovery Cassettes
Sample volume	5 µL	5 µL	12 µL
Optimal sample concentrations	Optimal DNA load levels are 5 – 20 ng/band in a 5 µL load. For best results, do not exceed 20 ng/band.	Optimal RNA load levels will vary depending upon RNA sample. For best results, do not exceed 200 ng/band in a 5 µL load.	Optimal DNA load levels are 50 – 500 ng/band in load volumes up to 12 µL.
Sample preparation	For best results, dilute DNA samples in 1X FlashGel® Loading Dye. Dilute to optimal DNA load levels as described above.	Denatured RNA samples: prepare samples in 50% formaldehyde sample buffer and RNase-free water. Denature for 5 minutes at 65°C. Native RNA samples: Use FlashGel® Loading Dye.	For best results, dilute DNA samples in 1X FlashGel® Loading Dye. Dilute to optimal DNA load levels as described above.
Voltage and run time	Single-tier: 275 V for 2 – 7 minutes Double-tier: 275 V for 2 – 5 minutes	Single-tier: 225 V for 4 – 8 minutes Double-tier: 225 V for 3 – 5 minutes	275 V for time needed to electrophorese bands to recovery wells. Varies by fragment size from 3+ minutes to 12 – 14 minutes.
Recovered concentration and volume	N/A	N/A	Sample recoveries are typically 80 – 90%, depending upon fragment. Recovery volumes are typically 15 – 50 µL.
Separation range	1.2%: 50 bp – 10 kb 2.2%: 10 bp – 1 kb Separation of fragments > 4 kb will be improved by running longer at lower voltage.	1.2%: 0.5 kb – 9 kb	1.2%: 50 bp – 10 kb 2.2%: 10 bp – 1 kb Separation of fragments > 4 kb will be improved by running longer at lower voltage.
Recommended markers	1.2%: FlashGel® DNA Marker 100 bp – 4 kb 2.2%: FlashGel® DNA Marker 50 bp – 1.5 kb Double-tier cassettes: FlashGel® DNA Marker 100 bp – 3 kb	FlashGel® RNA Marker 0.5 kb – 9 kb	FlashGel® DNA Marker 100 bp – 3 kb FlashGel® QuantLadder 100 bp – 3 kb 2.2%: FlashGel® DNA Marker 50 bp – 1.5 kb

Ordering information

FlashGel® System — FlashGel® DNA Cassette format

Cat. no.	Product name	Size/format
57023	FlashGel® DNA Cassettes	1.2% agarose, 12+1 well single-tier format, 9 pk
57029	FlashGel® DNA Cassettes	1.2% agarose, 16+1, 34-well double-tier format, 9 pk
57031	FlashGel® DNA Cassettes	2.2% agarose, 12+1 well single-tier format, 9 pk
57032	FlashGel® DNA Cassettes	2.2% agarose, 16+1 34-well double-tier format, 9 pk
50462	FlashGel® Loading Dye	5 x 1 mL vials, 5X concentration
50473	FlashGel® DNA Marker, 100 bp – 4 kb	500 µL ready-to-load, recommended for 1.2% cassettes Band sizes: 100/200/300/ 500/800/1250/2000/4000 bp
57033	FlashGel® DNA Marker, 50 bp – 1.5 kb	500 µL ready-to-load, recommended for 2.2% cassettes Band sizes: 50/100/150/200/ 300/500/800/1500 bp
57034	FlashGel® DNA Marker, 100 bp – 3 kb	500 µL ready-to-load, recommended for double-tier cassettes Band sizes: 100/300/500/ 800/1500/3000 bp
50475	FlashGel® QuantLadder	250 µL ready-to-load Band sizes: 100/250/400/ 800/1500 bp

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FlashGel® System — FlashGel® RNA Cassette format

Cat. no.	Product name	Size/format
57027	FlashGel® RNA Cassettes	1.2% agarose, 12+1 well single-tier format, 9 pk
57028	FlashGel® RNA Cassettes	1.2% agarose, 16+1 well double-tier format, 9 pk
50571	Formaldehyde Sample Buffer	RNA denaturing sample buffer, contains bromophenol blue and xylene cyanol, 5 x 1 mL
50462	FlashGel® Loading Dye	RNA native sample buffer, 5 x 1 mL vials, 5X concentration
50577	FlashGel® RNA Marker	0.5 bp – 9 kb, 50 µg (1 µg/mL)
51200	AccuGENE® Molecular Biology Water (DNase/RNase free)	For flooding sample wells and diluting RNA, 1 L

FlashGel® System — FlashGel® Recovery Cassette format

Cat. no.	Product name	Size/format
57051	FlashGel® Recovery Cassettes	1.2% agarose, 8+1 double-tier format, 9 pk
57022	FlashGel® Recovery Cassettes	2.2% agarose, 8+1 double-tier format, 9 pk
50060	FlashGel® Recovery Buffer	2 x 500 µL vials

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