SAVING LIVES WITH HEMOGLOBINOPATHY DETECTION

Migele™ Gel Electrophoresis Unit
for Hemoglobinpathy Detection

PerkinElmer®
For the Better

Migele Gel Electrophoresis Unit: Part of a Complete Solution Workflow

Sample Collection	Sample Preparation	Analytes	Sample Processing and Measuring	Data Processing and Reporting

DETECTION OF HEMOGLOBINOPATHIES IN NEWBORNS

In the newborn period, transition occurs within six months to one year after birth. This transition temporarily masks symptoms of disease. As a result, diseases associated with red blood cell sickling, for example Hb S, C, S/C, S/O, and S/D diseases, usually present during the first or second year of life. Each of these variants in their homozygous state produces clinically significant effects. Thalassemias present with a wide clinical diversity depending upon the degree to which the alpha or beta chains are being synthesized. These blood diseases can affect a child's growth and cause repeated infection in infancy, painful dactylitis, and pallor.

Our **Migele™ Gel Electrophoresis Unit** works with the **RESOLVE™ hemoglobin kit** to detect hemoglobinopathies in newborns and adults, including sickle cell disease and other hemoglobin variants and thalassemias. Now, blood screening labs all over the globe can conduct these crucial, lifesaving screenings with our easy-to-use, cost-efficient, scalable solution.

About Sickle Cell Disease

Sickle cell disease was the first hemoglobinopathy to be linked to an inherited structural defect in the beta globin gene, and the first in which the point mutation resulting in the defect was identified and characterized. The scope of newborn screening for sickle cell disease, which began over 30 years ago, has evolved to include other hemoglobin diseases.

Inherited hemoglobin disorders are some of the most common genetic disorders in the world. Because so many different ones coexist in many populations and because individuals may inherit more than one type, hemoglobin disorders present a complex series of clinical phenotypes.

DETECTING HEMOGLOBINOPATHIES, FROM SAMPLES TO RESULTS

How can you screen for hemoglobinopathies quickly *and* accurately? It's possible when you use isoelectric focusing (IEF), a proven method trusted for more than 20 years. We've taken steps to ensure our technology meets the highest standards for detecting hemoglobinopathies, so you can leap from blood sample to precise results in no time.

The unit works with a water bath and a power supply to run the IEF gel. The recirculating water bath stabilizes the temperature of the gel during the IEF process, while the programmable power supply provides high voltage to the electrophoresis unit.

When the gel is positioned in the unit and an electrical current is applied to the gel, the hemoglobin variant possessing an individual isoelectric point (pI) migrates through the gel. When an individual variant's pI equals the pH in the gel, it stops migrating and forms a discrete band. When all hemoglobin bands have been focused, the gel is fixed in trichloroacetic acid. To ensure band visibility, we recommend that newborn blood spot samples be stained with our **JB-2 staining system**.

It's a simple process that delivers important results. Additional benefits of our process and instrumentation include:

Outstanding Performance

The IEF technique combined with the specially formulated gels results in excellent separation of differing hemoglobin bands, allowing you to achieve identifiable results.

Time Efficient

The **RESOLVE kit** lets you to complete the run within 60 minutes (small gel FR-9120) to 90 minutes (big gel FR-9400/ FR-9360), excluding sample preparation. Multiple electrophoresis units can be run at the same time to produce more results within the same time frame.

Scalable

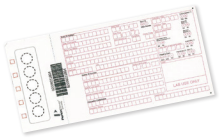
A typical setup includes two to four electrophoresis units on one circulating water bath. Expansion of the system is possible with minimal cost.

Flexible

We offer you two different size gels; each size can be used on the electrophoresis unit to evaluate cord blood, dried blood spots, or whole blood samples.

Multiple Evaluation Methods

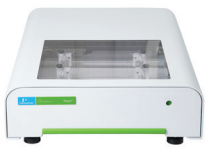
You can evaluate hemoglobin gels with or without stain. In newborn screening applications, staining is recommended. For this purpose, we offer the **JB-2 staining system** as well as trays and rocking systems to fix, rinse, and/or stain the gels.



Sample Collection Card

Panthera-Puncher™ 9

DBS Puncher



Migele Gel Electrophoresis Unit

JB-2 Staining System

Specimen Gate® Software

Samples Arrive

Sample Preparation

Involves punching and elution

IEF Process

Gel Washing and Staining

The first read can be made when the gel is wet

Gel Reading and Reporting

Results can be manually entered into the Specimen Gate software

ACHIEVE ACCURATE RESULTS EASILY

The **RESOLVE hemoglobin kit** separates whole blood, cord blood, or dried blood spot specimen for detection of normal and variant hemoglobins by isoelectric focusing. The kit can run on a flatbed electrofocusing unit. This assay is intended for use as an aid in the diagnosis of neonatal and adult hemoglobinopathies.

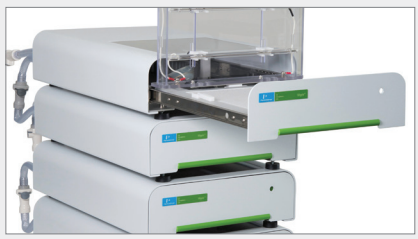
How it works

RESOLVE kits separate hemoglobins by IEF on a thin agarose gel. The clean separation of Hb F from Hb A permits differentiation of sickle cell anemia (Hb SS) from sickle cell trait (Hb AS). Due to the specificity and sensitivity of the gels we produce, separation of Hb C from Hb A_2 and Hb E, as well as Hb D-Punjab and Hb G-Philadelphia from Hb S, is achieved. Hemoglobinopathies are clearly detected. The hemoglobin kit is available for both neonatal and adult testing.

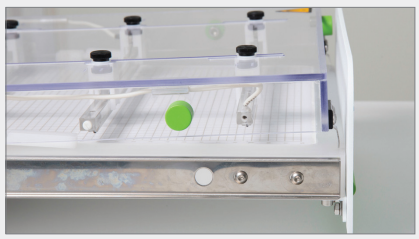
Benefits Beyond Saving Lives

We've developed our technology to work with your lab to maximize productivity and minimize downtime. Our robust system is simple to use and easy to maintain, so you can focus on what matters most – detecting hemoglobinopathies.

Monitor the run from the top window.



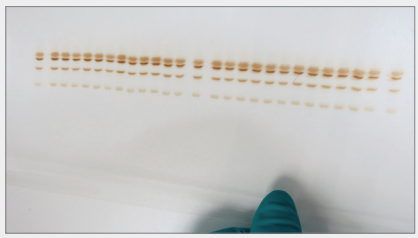
Save space by stacking the units on top of each other.



The space for the anode electrodes is adjustable, allowing different gels to be run in the same instrument.

Level the instrument with leveling tools.

The green, circular feaure on the front panel allows you to identify whether or not the lid is in run mode.



Results are visual and easily identifiable.

DISCOVERY IS IN THE DETAILS

Operating Environment:
Four units can be connected to one water bath in a temperature range of +18°C to +30°C and with relative humidity of 20% - 80%.

Chemical Resistance:
The parts are resistant to solvents used in our kits. If other manufacturers' chemicals are used, the customer is responsible for testing them.

Maximum Gel Size:
240 × 203 mm (FR-9400, FR-9360) and 203 × 127 mm (FR-9120)

Cooling Plate Max Pressure: 0.5 bar

Coolant Temperature:
+10 °C to +15 °C

Electrical safety requirements:
- Safety standards EN 61010-1, 61010-2-101
- Maximum voltage: 2000 V
- Maximum power: 100 W

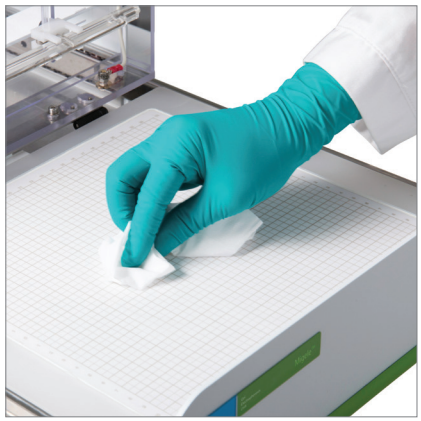
Weight:
Approx. 12.5 kg

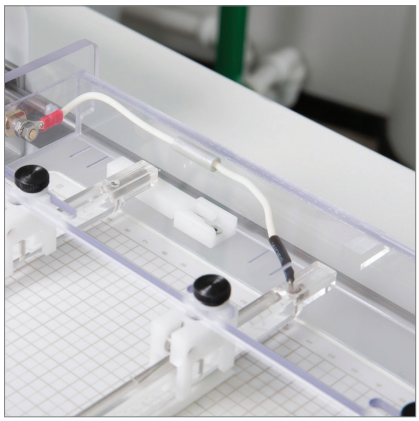
Dimensions:
351 mm x 520 mm x 125 mm-135 mm (W x L x H)

PROVEN PERFORMANCE

The **Migele Gel Electrophoresis Unit** demonstrates remarkable performance, much like our former model, the Multiphor II. The difference is that it features even more benefits that support lab productivity, for example:

- The ability to stack four units on top of each other to save space
- Robust electrodes that measure 1.5 mm thick
- A cooling plate grid that ensures the correct positioning of the gel
- The dampener in the lid that ensures it won't drop too quickly
- One lid with electrodes – no need to position glass plates and lids separately





ORDER DETAILS

PART NUMBER	DESCRIPTION
TESTING EQUIPMENT	
2118-0010	Gel Electrophoresis Unit (IVD) Installation Kit (with necessary cables) User Manual: English (printed copy), French, Spanish, German, Italian, Portuguese (Brazilian)
CWP-2000	Programmable Power Supply
1023-0050	Bio-Rad Power Supply (Purchase only together with 2118-0010)
1023-0010	Circulating water bath (240V)
1023-0020	Circulating water bath (120V)
1023-0030	Rocking platform (230V)
1023-0040	Rocking platform (120V)
OPTIONAL EQUIPMENT	
FR-9002	Stain and Rise Tray Set 3/pkg
12-18E	Glow Box
61012265	Electrode Cover Gel Electrophoresis Unit
6102727	Installation Kit (extra one)
61013000	Insulation Package (in development)
RESOLVE HEMOGLOBIN KITS:	
FR-9400	RESOLVE Hb Neo, 360-440 Tests, 5 gels/pkg
FR-9360	RESOLVE Hb Neo, 3600-4400 Tests, 50 gels/pkg
FR-9120	RESOLVE Hb, 135 Tests, 5 gels/pkg
PART NUMBER	**DESCRIPTION**
FR-9360/FR-9400 SAMPLE APPLICATION TEMPLATES ***(FR-9120 contains template)***	
FR-9436	36-Well Templates 10/pkg
FR-9472	36-Well Templates 2/pkg
FR-9848	44-Well Templates 100/pkg
ACCESSORIES AND CONSUMABLES:	
FR-9473	Gel Blotting Paper 205x245mm 60/pkg
FR-9081	Electrode Wicks 10x232 mm 80/pkg
3024-0010	Hb Elution Solution 1 x 240 ml
3025-0010	Hb Elution Solution 8 x 240 ml
FR-9367	JB-2 Staining System*
3033-0010	Clear Microplates
Hb610	extendSURE™ FASC Control 4 vials/pkg
START PACKAGE REQUIRED FOR IQ/OQ:	
1x FR-9400 or 1x FR-9360 or 1xFR-9120 1x Hb610 If FR-9400/FR-9360 the order also FR-9472 or FR-9848	

For more information and to order, visit newbornscreening.perkinelmer.com.

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