WSE-7066

# EzRun MOPS non-SDS

## Operating instructions

Aug 13, 2025 2nd edition

## 1. Precautions for safe use of this product

To use this product safely, please read this instruction manual carefully first. Please refrain from operating the product until you fully understand the contents of this instruction manual. This instruction manual describes only how to use this product for the specified purpose. Please refrain from using the product for purposes or in ways not described in this instruction manual. If you use the product for purposes or in ways not described in this instruction manual, you are solely responsible for all necessary safety measures and unforeseen circumstances. Also, please carefully read and understand the instruction manuals of any devices you will be using at the same time.

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## 1. Purpose of use

This product is a gel preparation and running buffer primarily used in agarose gel electrophoresis to separate nucleic acids such as DNA. It can also be used as a running buffer for native polyacrylamide gel electrophoresis of DNA and proteins. For Blue Native PAGE of proteins, use it together with **WSE-7067 EzBlueNative Additive**.

## 2. Product configuration

| Name | Volume | Quantity |
|---|---|---|
| **EzRun MOPS non-SDS** | 250 mL | 1 |

## 3. composition

| Name | Main component |
|---|---|
| **EzRun MOPS Non- SDS** | Tris, MOPS, EDTA |

This Product does not contain any poisonous or deleterious substances under the Poisonous and Deleterious Substances Control Law, or any substances subject to notification that exceed the exemption amounts stipulated under the Industrial Safety and Health Law or the PRTR Law. For details, please download the SDS for this product from the ATTO website (https://www.atto.co.jp/).

## 4. Storage

- **EzRun MOPS non-SDS** should be stored at room temperature (15-30℃), protected from light. It is stable unopened until the expiration date.
- **EzRun MOPS non-SDS** diluted solution can be stored at room temperature (15-30℃) in the dark.
- Buffers once used for electrophoresis cannot be reused.

## 5. Disposal method

- Dispose of each reagent in accordance with the disposal method of your institution.
- Bottle material: Body and lid: Polypropylene.

## 6. Items required other than this product

- Magnetic stirrer
- Stir bar
- Beaker
- Measuring cylinder
- Containers
- Distilled water
- Electrophoresis tank
- Power supply
- Agarose
- Acrylamide
- Ammonium persulfate solution
- TEMED
- **WSE-7011 EzApply Native**: Electrophoresis sample preparation solution for Protein Native PAGE
- **WSE-7040 EzApply DNA:** Electrophoresis sample preparation solution for DNA-PAGE

## 7. Precautions for use

- This product is a 20x stock solution. When using, dilute according to the instructions.
- **EzRun MOPS non-SDS** is sterilized but does not contain preservatives. Please note that after opening, the sterility may be compromised due to the contamination of bacteria, etc.
- Please note that **EzRun MOPS non-SDS** cannot be used as a gel preparation buffer for polyacrylamide gels. Use it as an electrophoresis buffer for polyacrylamide gel electrophoresis. It can be used as a gel preparation buffer for agarose gel preparation.
- **EzRun MOPS non-SDS** may discolor when exposed to light or heat, so store it at room temperature in a dark place.

## 8. How to use

**Agarose gel electrophoresis**

Prepare the agarose gel and electrophoresis buffer using **EzRun MOPS non-SDS**.

A. Preparation for agarose gel

1. Dilute **EzRun MOPS non-SDS** 20-fold with distilled water. To prepare a 50 mL agarose gel solution, add 2.5 mL of **EzRun MOPS non-SDS** to 47.5 mL of distilled water and mix.
2. Refer to Table 1 and weigh out the agarose to achieve the desired concentration, then add the required amount of 20-fold diluted **EzRun MOPS non-SDS.**

| DNA size (bp) | Agarose gel concentration (w/v) |
|---|---|
| 1,000-20,000 | 0.6% |
| 800-10,000 | 0.7% |
| 500-7,000 | 1.0% |
| 400-6,000 | 1.2% |
| 200-3,000 | 1.5% |
| 100-2,000 | 2.0% |

Table 1. DNA size and agarose concentration

3. Dissolve the agarose by heating in a microwave or hot water.

Caution

After dissolving, the agarose will be extremely hot and may boil over. Wear heat-resistant gloves or other protective gear when handling.

4. Pour the agarose solution into the gel maker and allow it to se

B. Agarose Gel Running Buffer

Dilute **EzRun MOPS non-SDS** 20-fold with distilled water. To prepare 500 mL of running buffer, add 25 mL of **EzRun MOPS non-SDS** to 475 mL of distilled water and mix.

C. Electrophoresis

When using the **WSE-1710 Submerge Mini** or **WSE-1720 Submerge Multi** electrophoresis system, run the gel at 50 V for 60 minutes or 100 V for 30 minutes.

*The above migration times are approximate. Please confirm the actual migration distance and determine the migration time accordingly.

**Polyacrylamide gel electrophoresis**

This section describes polyacrylamide gels compatible with **EzRun MOPS non-SDS** and Native-PAGE.

Note: The electrophoretic pattern and mobility are equivalent when using handcast gels with TBE buffer and electrophoresis buffer. Please note that the mobility differs from that of conventional precast gels using **EzRun TG** (see Figure 1).

A. Usable Polyacrylamide Gels

- Tris/Gly-Based Gels
  Pre-made Gels: **u-PAGEL, e-PAGEL HR, e-PAGEL, c-PAGEL Neo**
  Handcast Tris-Based Gels: Laemmli Method (SDS-Free)
- Bis-Tris-Based Gels
  (Handcast gels/Precast gels available)
- Imidazole-Based Gels

B. Polyacrylamide Gel Running Buffer

Dilute **EzRun MOPS non-SDS** 20-fold with distilled water.To prepare 500 mL of running buffer, add 25 mL of **EzRun MOPS non-SDS** to 475 mL of distilled water and mix.

C. Electrophoresis

Run at 150 V per gel for 60-70 minutes for mini gels and 30-40 minutes for compact gels.

D. Blue Native PAGE (Reference)

After sample application, add 1/100th the volume of **WSE-7067 EzBlueNative Additive** to the upper buffer in the upper chamber (cathode) and run. For details, refer to the **WSE-7067 EzBlueNative Additive** instruction manual.

Gel Staining

A. DNA Detection (Fluorescence)

Stain the gel using **WSE-7130 EzFluoroStain DNA** or **WSE-7135 EzPreStain DNA & RNA.**

1. First, dilute **WSE-7130 EzFluoroStain DNA** or **WSE-7135 EzPreStain DNA & RNA** 10-100 times with distilled water, then dilute 10,000 times (final concentration) with **EzRun MOPS non-SDS** (1x concentration) to prepare a staining solution.

*You can also prepare agarose gels and buffers containing pre-stained gel staining reagents using **EzRun MOPS non-SDS** and perform electrophoresis (pre-staining).

*Wear gloves and be careful not to let the staining reagent come into direct contact with your skin.

*When staining with ethidium bromide, prepare the staining solution at 0.5 µg/mL.

2. After electrophoresis, immerse the gel in the staining solution and incubate (protected from light) for 10-30 minutes.
3. Place the stained gel in a gel imaging system (fluorescence detection light source: UV or LED light source) and photograph it.

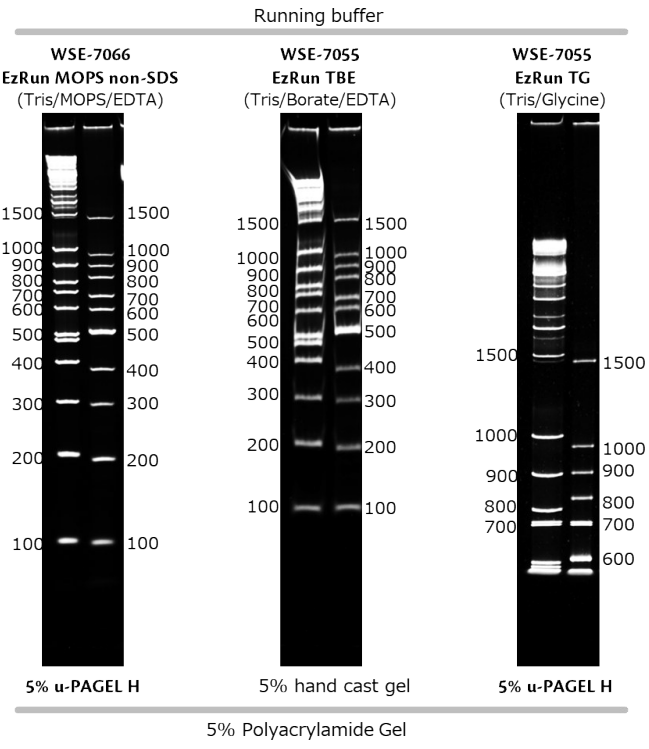
**<Imaging Conditions>**

| | |
|---|---|
| Cyan LED excitation: 480-530 nm | Filter: LPF 500-550 |
| Blue LED excitation: 440-500 nm | Filter: LPF 500-550 |
| UV excitation: 260-370 nm | Filter: LPF 500-550 |

B. Protein Detection

After electrophoresis, the gel can be stained with **AE-1340 EzStain AQua** (CBB stain) or **AE-1310 EzStain Silver** (silver stain). For staining of the gel after Blue Native PAGE, refer to the instruction manual for **WSE-7067 EzBlueNative Additive**.

[Figure 1 ] DNA polyacrylamide gel electrophoresis pattern





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