

# Product Information

## PAGE GelRed™ Nucleic Acid Gel Stain, 1X in water

**Catalog Number:** 41014

**Unit Size:** 4 L

**Concentration:** 1X in water

### Storage and Handling

Store at room temperature, protected from light. Product is stable for at least 12 months from date of receipt when stored as recommended. While PAGE GelRed™ has been shown in laboratory tests to be non-mutagenic and non-hazardous for waste disposal, we recommend using universal safety precautions when working in the laboratory.

### Spectral Properties

Excitation/Emission: 308, 551/625 nm (with dsDNA) (Figure 1).

### Product Description

PAGE GelRed™ is a non-toxic, non-mutagenic red DNA gel stain specifically designed to stain DNA in polyacrylamide gels (Figure 2). PAGE GelRed™ can be imaged using a 254 nm UV transilluminator with an ethidium bromide filter or with gel readers with visible light excitation. While PAGE GelRed™ also can be used to stain DNA in agarose gels, Biotium's original GelRed™ nucleic acid gel stain (catalog number 41003) is more sensitive for agarose gel applications. PAGE GelRed™ can be removed from DNA after agarose gel staining using commonly available gel extraction kits. PAGE GelRed™ is 6-8 times more sensitive for dsDNA over RNA.

PAGE GelRed™ was subjected to a series of tests at Biotium and two independent laboratories to assess the dye's safety for routine handling and disposal. Laboratory tests show that the dye is impenetrable to latex or nitrile gloves and cell membranes. Unlike the highly mutagenic EtBr and the reportedly mutation-enhancing SYBR® Green I (1), PAGE GelRed™ is non-toxic and non-mutagenic in bacterial AMES tests at concentrations well above the working concentrations used in gel staining. PAGE GelRed™ successfully passed environmental safety tests in compliance with CCR Title 22 Hazardous Waste Characterization, under which it is classified as non-hazardous waste. A complete safety report is available at www.biotium.com.

Figure 1. Absorbance (left) and emission (right) spectra of PAGE GelRed™ bound to dsDNA in water.

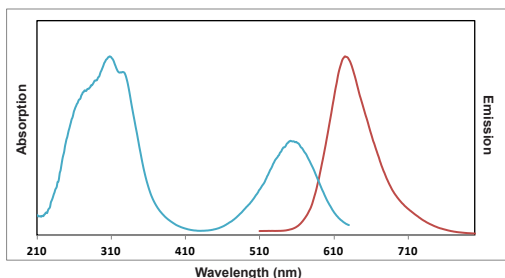
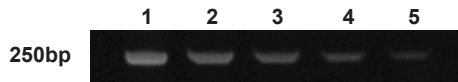


Figure 2. A 10% polyacrylamide gel was post-stained with 1X PAGE GelRed™. The 250bp band of 1kb DNA Ladder (Biotium) is shown. From left to right: 45ng, 18ng, 9ng, 4.5ng, and 2.25ng. Gel was imaged using a 254nm UV transilluminator and ethidium bromide emission filter.



### PAGE GelRed™ staining of DNA in polyacrylamide gels

1. Run gels as usual according to your standard protocol.
2. Carefully place the gel in a suitable polypropylene container. Gently add a sufficient amount of the 1X staining solution to submerge the gel.
3. Agitate the gel gently at room temperature for ~30 minutes, protected from light.
4. Image the stained gel with a 254 nm transilluminator and ethidium bromide emission filter.

### PAGE GelRed™ staining of DNA in agarose gels

While PAGE GelRed™ was specifically designed as a safe alternative for staining DNA in polyacrylamide gels, it also can be used to stain DNA in agarose gels using the staining protocol described above. Note that Biotium's original GelRed™ nucleic acid gel stain (catalog number 41003) is more sensitive than PAGE GelRed™ for staining DNA in agarose gels. PAGE GelRed™ Nucleic Acid Gel Stain, 1X in water **cannot** be used to generate PAGE GelRed™ pre-cast gels, nor for pre-staining of DNA by adding dye directly to DNA samples before gel loading.

### References

1. Ohta et al. (2001) Mutation Research 492, 91.

### Related Products

| Catalog number | Product  |
|----------------|--|
| 41008-T        | PAGE GelRed™ Nucleic Acid Gel Stain, 10,000X in water (100 uL) |
| 31021          | 1 kb DNA Ladder (100ng/uL), 300 ug/300 uL                      |
| 31022          | Ready-to-Use 1 kb DNA Ladder, 150 applications (1.5 mL)        |
| 31031          | 100 bp DNA Ladder, 30 ug/300 uL                                |
| 31032          | Ready-to-Use 100 bp DNA Ladder, 150 applications (1.5 mL)      |
| 41003          | GelRed™ Nucleic Acid Gel Stain, 10,000X in water, 0.5 mL       |
| 41001          | GelRed™ Nucleic Acid Gel Stain, 3X in water, 4.0 L             |
| 41006          | TBE Buffer, 5X, 4 L  |
| 31000-T        | EvaGreen® Dye, 20X in water (trial size), 1 mL                 |
| 31003-T        | Fast EvaGreen® qPCR Master Mix (trial size, 100 rxn), 1 x 1 mL |

Please visit our website at [www.biotium.com](http://www.biotium.com) for information on our life science research products, including environmentally friendly EvaGreen® qPCR master mixes, fluorescent CF™ dye antibody conjugates and reactive dyes, apoptosis reagents, fluorescent probes, and kits for cell biology research.

PAGE GelRed™ and its uses are covered under pending US patents. GelRed™ and its uses are covered by US patent numbers 7960498, 7803943, and 8232050.

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