

Run Agarose DNA Gels in Under 20 Minutes

Bio-Rad's BioEducation R&D team has developed a new electrophoresis buffer formula. Using a reduced concentration of running buffer (0.25x TAE), and higher voltage (200 V), any agarose gel can be run 33% faster. Advantages of this new formula include:

- Excellent gel resolution
- Minimize run time
- Fast separation of DNA in gels of any agarose gel concentration (0.8 to 4.0%)
- Compatibility with all Bio-Rad Biotechnology Explorer program kits

TAE buffer is provided as a 50x concentrate that can be mixed with distilled water to yield the necessary concentrations for making agarose gels and electrophoresis running buffer.

Use 1x TAE to make agarose gels:

Half a liter of 1x TAE is sufficient to pour eight 7 x 10 cm agarose gels. To make 500 ml of 1x TAE from a 50x TAE concentrate, add 10 ml of concentrate to 490 ml of distilled water. Detailed instructions for making agarose gels can be found in individual kit instruction manuals.

- Use 1x TAE to make 1% agarose gels for the forensic DNA fingerprinting, analysis of pre-cut lambda DNA, restriction digestion and analysis of lambda DNA, and PV92 PCR informatics kits
 - With the small DNA electrophoresis pack, dissolve 25 g of agarose in 2,500 ml of 1x TAE buffer, boil, and pour 50 ml per gel to make 50 handcast 1% agarose gels. Gels can be stored submerged in buffer for several weeks at 4°C
 - For added convenience, precast 1% agarose gels made with 1x TAE are available from Bio-Rad (catalog #161-3057EDU)
- Use 1x TAE to make 3% agarose gels for the Crime Scene Investigator™ and GMO Investigator™ kits
 - With the small DNA electrophoresis pack, dissolve 25 g of agarose in 833 ml of 1x TAE buffer, boil, and pour 50 ml per gel to make 16 handcast 3% agarose gels. Gels can be stored submerged in buffer for several weeks at 4°C
 - For added convenience, precast 3% agarose gels made with 1x TAE are available from Bio-Rad; each gel includes two 8-well combs (catalog #161-3017EDU)

Use 0.25x TAE to make electrophoresis running buffer:

A 2.5 L volume of 0.25x TAE buffer is required to run eight 7 x 10 cm agarose gels. To make 2.5 L of 0.25x TAE from a 50x TAE concentrate, add 12.5 ml of concentrate to 2.49 L of distilled water. To make 2.5 L of 0.25x TAE from a 1x TAE solution, add 625 ml of 1x TAE to 1,875 ml of distilled water.

Note: Do not use 0.25x TAE to make agarose gels; doing so can lead to a loss of DNA resolution.

To run gels:

Place the gel in an electrophoresis chamber and cover it with 0.25x TAE; ensure the gel is submerged. Run gels at 200 V for no more than 20 min. Monitor gel loading dye progress to get a relative idea of electrophoresis progress.



**Bio-Rad
Laboratories, Inc.**

*Life Science
Group*

Web site www.bio-rad.com **USA** (800) 4BIORAD **Australia** 02 9914 2800 **Austria** (01)-877 89 01 **Belgium** 09-385 55 11 **Brazil** 55 21 2527 3454
Canada (905) 712-2771 **China** (86 21) 6426 0808 **Czech Republic** + 420 2 41 43 05 32 **Denmark** 44 52 10 00 **Finland** 09 804 22 00
France 01 47 95 69 65 **Germany** 089 318 84-0 **Greece** 30 210 777 4396 **Hong Kong** (852) 2789 3300 **Hungary** 36 1 455 8800
India (91-124)-2398112/3/4, 5018111, 6450092/93 **Israel** 03 951 4127 **Italy** 39 02 216091 **Japan** 03-5811-6270 **Korea** 82-2-3473-4460
Latin America 305-894-5950 **Mexico** 55-52-00-05-20 **The Netherlands** 0318-540666 **New Zealand** 64 9 415 2280 **Norway** 23 38 41 30
Poland + 48 22 331 99 99 **Portugal** 351-21-472-7700 **Russia** 7 095 721 1404 **Singapore** 65-64153188 **South Africa** 00 27 11 4428508
Spain 34 91 590 52 00 **Sweden** 08 555 12700 **Switzerland** 061 717 95 55 **Taiwan** (886 2) 2578 7189/2578 7241 **United Kingdom** 020 8328 2000