

# AGAROSE MANUAL

## D-5

D-5 Agarose is a linear polymer with a very high molecular weight, giving gel structures unlike those of traditional agaroses. This characteristic, added to the very low sulfate content, produces an strong intercatenary interaction, yielding a gel with very high gel strength and higher exclusion limit.

### Features

- Extremely high gel strength allowing for lower gel concentrations (0.3%), enabling it to be used not only with high molecular weight nucleic acids, including chromosomes, but also with large sized particles like viruses and ribosomes.
- High electrophoretic mobility. DNA mobility is greater when compared with D-1LE. Electrophoresis times are reduced depending upon buffer and agarose concentration used.
- Easy preparation of the gel by simple dissolution in aqueous buffers either by standard boiling or microwaving.
- Greater thermal stability due to high hysteresis (difference between gelling and melting temperatures).
- Exceptionally low absorption of staining agents.
- Absence of toxicity (the alternative is polyacrylamide which can be toxic).

### Applications

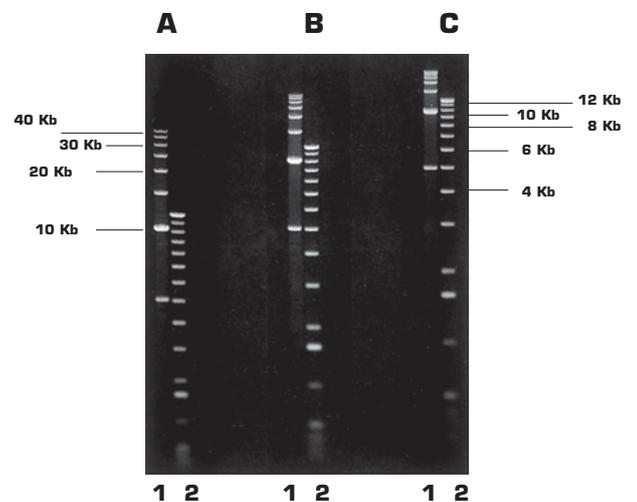
- Conventional Electrophoresis: can be used in a wide range of concentrations.
- Pulsed Field Gel Electrophoresis: because of its higher exclusion limit, larger molecules can be separated.
- Blotting.
- Agarose Beads preparation.
- Cell and enzyme immobilization.

### Specifications and Functional Tests

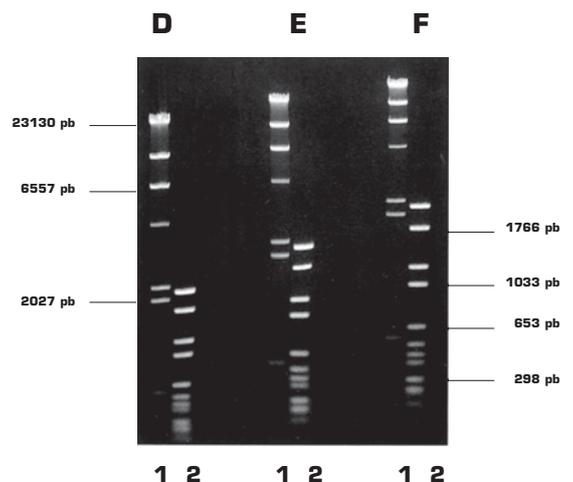
	D-5
Moisture	≤ 7%
Ash	≤ 0.25%
EEO*	≤ 0.12
Sulfate	≤ 0.12%
Clarity 1.5% (NTU)	≤ 4
Gel Strength 1% (g/cm <sup>2</sup> )	≥ 1800
Gel Strength 1.5% (g/cm <sup>2</sup> )	≥ 3200
Gelling Temperature 1.5% (°C)	36±1.5
Melting Temperature 1.5% (°C)	88±1.5
DNAse/RNAse activity	None detected
DNA resolution ≥1000 bp	Finely resolved
Gel background	Very low

\*EEO (electroendosmosis)

As we can see in the following photographs, D-5 Agarose is suitable for a wide variety of ranges, just by modifying its concentration.



D-5 Agarose gels in 1 X TAE. A-0.3%, B-0.5%, C-0.8%. Markers: lane 1-5 kb, lane 2-1 kb ladder. Electrophoresis conditions: submarine gel, 16 hours, 1 V/cm. in 1XTAE buffer.



D-5 Agarose gels in 1 X TAE. D-0.5%, E-1%, F-1.5%. Markers: lane 1-Lambda DNA. HindIII, lane-2-pBR328DNA. BglII+pBR328DNA. HindII. Electrophoresis conditions: submarine gel, 2 hours, 4.5 V/cm. in 1XTAE buffer.