

ClearBand Laemmli Sample Buffer (4x)

Troubleshooting Guide

10 ml

Cat No: LSB-4x

Use this guide for common sample-preparation problems with ClearBand Laemmli Sample Buffer 4x. The premixed buffer is supplied as a 4x concentrate for protein preparation before SDS-PAGE.

Before You Start - Quick Checks

1. Store at room temperature.
2. Add beta-mercaptoethanol to the concentrate immediately according to the product-specific formulation before use.
3. Prepare samples using the specified 3:1 sample:buffer ratio.
4. Heat the final sample-buffer mixture for 5 minutes in boiling water before loading.

Problem	Most likely cause	Recommended action
Sample has the wrong final buffer strength	The sample-to-buffer ratio may not match the 4x concentrate.	Use the specified 3:1 sample:buffer ratio so the final mixture has the intended working strength.
Protein reduction is incomplete	Beta-mercaptoethanol may have been omitted or added at the wrong amount.	Prepare the buffer with 100 µL beta-mercaptoethanol per 900 µL buffer before mixing it with the protein sample.
Bands are inconsistent between samples	Different sample-to-buffer ratios may have been used.	Standardize the 3:1 sample:buffer mixing ratio for all samples in the same experiment.
Unexpected migration after sample preparation	The wrong Laemmli concentration variant may have been used with a ratio intended for another stock.	Confirm that the bottle is 4x and use only the ratio specified for this concentration.
Sample was loaded without boiling	Denaturation may be incomplete compared with the supplied protocol.	Heat the final sample-buffer mixture for 5 minutes in boiling water before loading the gel.
Too much concentrate was added	Using a ratio intended for a less concentrated Laemmli stock changes the final sample composition.	Reprepare the sample using the 3:1 sample:buffer ratio for the 4x stock.
Reducing-agent preparation is inconsistent	The beta-mercaptoethanol addition may vary between aliquots.	Prepare the reducing buffer using the stated amount (100 µL beta-mercaptoethanol per 900 µL buffer) and use the same preparation method across samples.
SDS-PAGE result changes after switching Laemmli products	2x, 4x, and 10x products require different mixing ratios and beta-mercaptoethanol additions.	Use the formulation specific to the labeled concentrate rather than carrying over the previous product ratio.

Still having trouble? Recheck the labeled 4x concentration, beta-mercaptoethanol addition, 3:1 sample:buffer mixing ratio, and 5-minute boiling step before changing electrophoresis conditions.