

## ND-1000 Homogeneity Study

### Introduction

When sampling either large molecules such as lambda and genomic DNA or very concentrated samples, it is common to see poor reproducibility due to sample concentration stratification.

A study was done comparing the reproducibility of measuring lambda DNA heated to 37°C without vortexing and then again after heating to 63°C with vortexing. The standard deviations in the first data set ranged from 3.2-11.1% (% CV's,) while the after-mixing and heating to 63°C standard deviations were all <2.5%.

**Lambda DNA, Worthington Biochemicals, labeled as 754ug/ml**  
 Thawed, heated @ 37°C -15 minutes, stored as 0.1ml aliquots & measured at 260 nm

Sample	Original Vial	Vial 1	Vial 2	Vial 3	Vial 4	Vial 5
(ng/ul)	601.50	1110.75	638.29	637.49	581.30	644.39
	609.87	1021.34	647.95	598.91	619.93	756.65
	567.53	927.78	584.34	576.63	622.86	680.40
	566.16	913.84	558.53	654.87	664.66	655.85
	575.33	960.61	585.29	762.54	685.34	839.94
	572.48					743.60
						800.79
						763.67
<b>Mean</b>	<b>582.15</b>	<b>986.86</b>	<b>602.88</b>	<b>646.09</b>	<b>634.82</b>	<b>735.66</b>
<b>SD</b>	<b>18.72</b>	<b>80.70</b>	<b>38.42</b>	<b>72.05</b>	<b>40.84</b>	<b>69.85</b>
<b>% CV</b>	<b>3.2%</b>	<b>8.2%</b>	<b>6.4%</b>	<b>11.2%</b>	<b>6.4%</b>	<b>9.5%</b>

(2 ul)  
(2 ul)

**Lambda DNA, Worthington Biochemicals, labeled as 754ug/ml**  
 The 0.1 ul aliquots were heated @ 63°C -15 minutes, vortexed & measured at 260 nm

Sample	Original Vial	Vial 1	Vial 2	Vial 3	Vial 4
(ng/ul)	761.00	755.20	754.66	770.90	761.14
	737.99	768.29	784.96	803.15	760.93
	753.26	760.81	753.33	769.09	765.19
<b>Mean</b>	<b>750.75</b>	<b>761.43</b>	<b>764.32</b>	<b>781.05</b>	<b>762.42</b>
<b>SD</b>	<b>11.71</b>	<b>6.57</b>	<b>17.89</b>	<b>19.16</b>	<b>2.40</b>
<b>% CV</b>	<b>1.6%</b>	<b>0.9%</b>	<b>2.3%</b>	<b>2.5%</b>	<b>0.3%</b>