

CHEM 210 AD

Heats of Neutralization (in kJ/mol)

| Group Number | HCl / NaOH | CH ₃ COOH / NaOH | HCl / NH ₄ OH | CH ₃ COOH / NH ₄ OH |
|--------------------|--------------|-----------------------------|--------------------------|---|
| 1 | -63.7 | -63.5 | -63.2 | -62.4 |
| 2 | -63.3 | -48.8 | -48.6 | -52.2 |
| 3 | -63.7 | -59.9 | -58.4 | -55 |
| 4 | -64.4 | -60.2 | -58.7 | -57.5 |
| 5 | -60.9 | -59.5 | -56.7 | -53.1 |
| 6 | -53.5 | -55.8 | -55.9 | -54.1 |
| 7 | -67.9 | -62.3 | -62.3 | -56.2 |
| 8 | -67.7 | -64.9 | -59.2 | -51.4 |
| 9 | -65.8 | -60.8 | -63.3 | -57.3 |
| 10 | -66.9 | -63 | -70.6 | -58.8 |
| AVERAGE | -63.7 | -59.8 | -59.8 | -55.6 |
| Standard Deviation | 4.5 | 4.9 | 6.1 | 3.5 |