

Materials Guide

Flame Test Methanol Solutions (0.5 L solutions in methanol)

Solution	Molecular Mass (g/mol)	Calculation (mol/L)(L)(g/mol)	Grams
0.5 M LiCl	42.4	$(0.5 \text{ mol/L})(0.5 \text{ L})(42.39 \text{ g/mol})$	10.6
0.5 M SrCl ₂	158.4	$(0.5 \text{ mol/L})(0.5 \text{ L})(158.53 \text{ g/mol})$	39.6
0.5 M NaCl	58.4	$(0.5 \text{ mol/L})(0.5 \text{ L})(58.44 \text{ g/mol})$	14.6
0.5 M H ₃ BO ₃	61.8	$(0.5 \text{ mol/L})(0.5 \text{ L})(61.83 \text{ g/mol})$	15.45
0.5 M CuCl ₂	134.6	$(0.5 \text{ mol/L})(0.5 \text{ L})(134.61 \text{ g/mol})$	33.65
0.5 M KI	166.0	$(0.5 \text{ mol/L})(0.5 \text{ L})(166.0 \text{ g/mol})$	41.5

Solution Conductivity Components (8 Lab Groups)

RadioShack Components	Serial Number	Quantity	Price	Total Price
9V Battery Connector (5-Pack)	270-325	3	\$2.99	\$8.97
14.4V 100mA Incandescent Flashlight Bulb (2-Pack)	272-1127	8	\$2.19	\$17.52
E10 Vertical-mount Bulb Holder (4-Pack)	272-360	4	\$1.99	\$7.96
100-Ft. UL-Recognized Hookup Wire (22 AWG)	272-1215	1	\$7.79	\$7.79
Sparkfun Components				
Digital Multimeter	TOL-09141	10	\$13.46	\$134.60
				\$176.84

Solution Conductivity Test Solutions (0.5 L solutions)

Solution	Molecular Mass (g/mol)	Calculation (mol/L)(L)(g/mol)	Grams
1 M NaCl	58.4	$(1 \text{ mol/L})(0.5 \text{ L})(58.4 \text{ g/mol})$	29.2
1 M C ₁₂ H ₂₂ O ₁₁	342.30	$(1 \text{ mol/L})(0.5 \text{ L})(342.3 \text{ g/mol})$	171.15
5 M NaCl	58.4	$(5 \text{ mol/L})(0.5 \text{ L})(58.4 \text{ g/mol})$	146
5 M CaCl ₂	110.98	$(5 \text{ mol/L})(0.5 \text{ L})(110.98 \text{ g/mol})$	277.45
5 M NaOH	39.99	$(5 \text{ mol/L})(0.5 \text{ L})(39.99 \text{ g/mol})$	99.975
5 M CH ₃ COOH	60.05	$\frac{(5 \text{ mol/L})(0.5 \text{ L})}{(6 \text{ mol/L stock solution})}$	416 mL CH ₃ COOH + 84 mL H ₂ O