

# Acids and Bases— Master Materials Guide



Materials listed below are recommended  
for a class of 30 students working in pairs.

## Experiments and Demonstrations

Chemicals	Flinn Scientific Catalog No.	Properties of Acids and Bases	Natural Indicators	Measuring Acid Strength	Classic Titration	Microscale Titration	Buffers: Keep the Balance	Indicator-Sponge	The Rainbow Tube	Upset Tummy? MOM to the Rescue!	Strong vs. Weak Acids	Buffer Balancing Acts
Acetic acid, 0.1 M	A0096	100 mL	100 mL									
Acetic acid, 1 M	A0095									400 mL		
Alka-Seltzer tablets	A0111											2
Ammonium hydroxide solution, 0.1 M	A0098	75 mL	100 mL									
Ammonium nitrate solution, 0.1 M*	A0290		100 mL									
Bromthymol blue indicator solution, 0.04%	B0047		100 mL				75 mL					5 mL
Buffer capsules, pH 2–12 set	B0227		1 set									
Buffer solution, pH 4	B0089			100 mL								
Buffer solution, pH 7	B0092			100 mL								
Calcium carbonate	C0347										40 g	
Congo red indicator	C0120						1 g					
Hydrochloric acid, 0.1 M	H0014	100 mL			600 mL	150 mL		25 mL				
Hydrochloric acid, 1 M	H0013						100 mL				400 mL	50 mL
Hydrochloric acid, 3 M	H0034										20 mL	
Isopropyl ("rubbing") alcohol, 70%	I0021		750 mL									
Magnesium hydroxide solution, saturated (Milk of Magnesia)	M0122								20 mL			
Magnesium ribbon or turnings	M0139 or M0112	6 g										
Methyl orange indicator solution, 0.1%	M0078		100 mL									
Phenolphthalein indicator solution, 0.5%	P0115	50 mL		25 mL	25 mL	25 mL <sup>†</sup>						
Phosphoric acid, 14.8 M	P0201		10 mL <sup>§</sup>									
Potassium bisulfate (potassium hydrogen sulfate)	P0134			3 g								
Potassium bitartrate (potassium hydrogen tartrate)	P0135			3 g								
Potassium hydrogen phthalate	P0056			3 g								
Potassium phosphate monobasic (potassium dihydrogen phosphate)	P0141			3 g								
Rainbow acid universal indicator	U0012										5 mL	
Sodium acetate	S0344										16 g	
Sodium bicarbonate solution, 0.1 M*	S0385		100 mL				150 mL					
Sodium carbonate solution, saturated	S0233							6 mL				

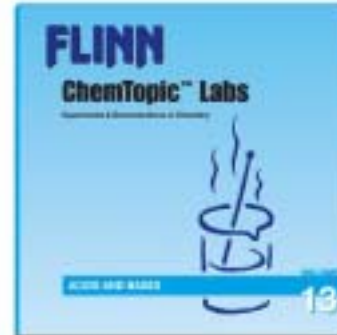
\*Gramolpak is a unique product for the preparation of 1 L of solution of known molarity.

<sup>†</sup>Dilute to 0.05% for microscale applications.

<sup>§</sup>Dilute to 0.1 M

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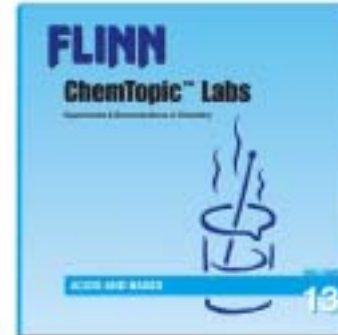
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<b>Chemicals, continued</b>												
Sodium chloride	S0063										12 g	
Sodium hydroxide pellets	S0074			5 g	10 g							
Sodium hydroxide solution, 0.1 M	S0149	150 mL		300 mL	1 L		150 mL					
Sodium hydroxide solution, 1 M	S0148							100 mL				50 mL
Sodium phosphate dibasic solution, 0.1 M*	S0398						250 mL					200 mL
Sodium phosphate monobasic solution, 0.1 M	S0371		100 mL				350 mL					200 mL
Thymol blue indicator solution, 0.04%	T0045		100 mL									
Universal indicator solution	U0002	25 mL					100 mL		3 mL	5 mL		5 mL
Vinegar	V0001					150 mL						
Zinc nitrate solution, 0.1 M	Z0026		100 mL									
<b>Glassware</b>												
Beakers												
50-mL	GP1005					30	30					
100-mL	GP1010		15									
150-mL	GP1015		15	15								
250-mL	GP1020				30							
400-mL	GP1025											4
1-L	GP1040							2		1		
Buret, 50-mL	GP1090				15							
Erlenmeyer flasks												
125-mL	GP3040			15	15							
250-mL	GP3045											
Graduated cylinders												
10-mL	GP2005						30					1
25-mL	GP2010					15			1	1		
100-mL	GP2020			15								
250-mL	GP2025										1	1
Hydrometer cylinder, 600 mL	AP8599										4	
Pipet, volumetric, 10-mL	GP7030				15							
Test tubes												
16 × 150 mm	GP6066						90		1			
Stirring rods	GP5075	15		15			15					1

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<b>General Equipment and Miscellaneous</b>												
Balance, centigram (0.01-g precision)	OB2059		3	3		3		1			1	
Cellulose sponge	AP1343							1				
Color pencils, assorted	FB0643		15									
Conductivity meter	AP1493	5										
Demonstration tray, large	AP5429										1	
Filter paper	AP3104		15									
Food coloring	V0003							2 mL				
Forceps	AP8328	15										
Funnel	AP3200		15									
Gloves, nitrile, acid-resistant	AP3258							1				
Hot plate	AP4674		optional									
Laboratory Techniques Guide, pkg. of 30*	AP6248		1		1							
LabPro Interface system	TC1500				15							
Litmus paper, neutral	AP7934	1 vial										
LoggerPro Software	TC1421				15							
Magnetic stirrer (optional)	AP6067				15					1		
Mortar and pestle	AP6066		15									
pH meters	AP8673			15								
pH sensor	TC1503				15							
pH Test paper, narrow-range, 6.0–8.0	AP335							1 roll				
pH Test strips, 1–12	AP1107	1 vial										
Pipet filler	AP1887				15							
Pipets, Beral-type, graduated	AP1721	75	75	30			105		2	2		2
Pipets, Beral-type, micro-tip	AP1719					45						
Reaction plate, microscale, 24-well	AP1447	15	15			15	15					
Stirring bars (optional)	AP1090				15					1		
Test tube rack	AP1319						15		1			
Tongs	AP8266							1				
Universal indicator overhead color chart	AP5367						1					
Wash bottle	AP1668	15	15	15	15	15						
Water, distilled or deionized	W0007, W0001	✓	✓	✓	✓	✓	✓			✓	✓	✓
Weighing dishes	AP1278			30								6

\*The Laboratory Techniques Guide provides convenient illustrations and explanations of filtration, titration, and 16 other common lab techniques.