

Polymers— Master Materials Guide



(for a class of 30 students working in pairs)

Experiments and Demonstrations

Chemicals	Flinn Scientific Catalog No.	Let's Make Slime	Structures and Properties of Polymers	Properties of a Natural Polymer	Sorting Plastics by Density	Small-Scale Synthesis of Polymers	Designer Gluep	Preparation of Nylon	Polyurethane Foam	Properties of a Super-absorbent Polymer	Oh, the Memories!	Polyethyl Methacrylate
Acetone	A0009							optional				
Adipoyl chloride solution, 0.25 M, in hexane	A0185							10 mL				
Aluminum oxide	A0161				1 g							
Benzoyl peroxide	B0158				1 g							1 g
Boiling stones	B0136				3 g					3	1	
Calcium chloride, dihydrate	C0196	7 g										
Copper shot	C0083											1 piece
Copper wire, 16-gauge	C0146				8 cm							15 cm
Copper(II) chloride, dihydrate	C0212	4 g										
Corn oil	C0090			500 mL								
Ethyl alcohol	E0007			150 mL	optional							
Ethylene glycol	E0020				6 mL							
Food dye set	V0003	optional						optional	optional			
Glue, white "household"-type	G0049						1 L					
Glycerin	G0007			500 mL								
Hexamethylenediamine solution, 0.5 M in 0.5 M aqueous sodium hydroxide	H0032							10 mL				
Methyl methacrylate	M0118											5 mL
Phthalic anhydride	P0132				10 g							
PolySnow™	P0283									3 g		
Polyurethane Foam System	C0335							1				
Polyvinyl alcohol	P0154	750 mL										
Sodium acetate	S0036				1 g							
Sodium alginate	S0445		2 g									
Sodium borate	S0334	4 g					40 g					
Sodium chloride	S0061				50 g					1 g		
Sodium chloride solution, saturated	S0236		500 mL									
Sodium polyacrylate	W0012									1 g		
Styrene, monomer	S0338				6 mL							

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Glassware												
Beakers												
50-mL	GP1005							1				
100-mL	GP1010		6									
150-mL	GP1015				25							
250-mL	GP1020		4			3			1			
400-mL	GP1025				10							1
1-L, Pyrex®	GP1040		4							1		
Graduated cylinders												
10-mL	GP2005	15					15					1
25-mL	GP2010									1		
50-mL	GP2015	15										
Pasteur pipets	GP7042					30		1				1
Stirring rods	GP5075							1	1			
Test tubes												
13 × 100 mm	GP6063					10						
16 × 125 mm	GP6065					10						
Watch glasses	GP8009					10						
General Equipment and Miscellaneous												
Bags, zipper-lock	AB1003	optional	1									
Balance, centigram (0.01-g precision)	OB2059					3	3		1	1	1	
Bunsen burner	AP8344					10						
Clamp, buret, plain-jaw	AP8354					10	15					
Clamp, suspension hook	AP4367			7								
Cotton balls	FB0680					3						
Crucible tongs	AP8266									2		
Cups, paper	AP9158					10						
Cups, plastic, 10 oz.	AP6542	15					90	2	2			
Forceps	AP8328		4		10					1		
Hooked weight set	OB2066			7								
Hot plate	AP4674					3				1	1	
Marking pens, fine-point	AP8467	15		7								
Marking pens, permanent	AP1297		2									

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General Equipment and Miscellaneous, continued												
Metric rulers	AP4684		2	7	10		15					
Micrometer	AP5373			1								
Microspatulas	AP9015					10						
Overflow can	AP4627									optional		
Pasteur pipet bulbs	AP9150					30		1				1
Pencils, 24-color set	AP6400		2									
Petri dishes, disposable	AP8170		7									
Pipets, Beral-type, graduated	AP1721		10									
Polarizing film	AP8913		4									
Reaction vial, large	AP9106											1
Scissors, heavy-duty	AP8949				10					optional		
Scissors, student	AP5394		2									
Spatula	AP8338					10						1
Support stand	AP8226			7		10	15					
Test tube clamp	AP8217					10						
Test tube rack	AP1319											
Thermometer, digital	AP6049		4									
Tongue depressors	AP4412	15	8				90					
Wash bottle	AP1668		4		10							
Water, distilled or deionized	W0007, W0001	✓	✓		✓		✓	✓		✓	✓	
Weighing dishes, small	AP1277					10				1		