

# H.M.S. Beagle

## Master Chemistry Set

This is the chemistry set every child wants to own and the set that every adult wanted to own. It not only includes over 80 BenchMark™ chemicals (including all the chemicals found in the BenchMark™ Legacy Chemicals Kit™), but it includes a chemistry book, *All Lab, No Lecture; Illustrated Guide to Home Chemistry Experiments*, and a CR-ROM with the 1936 edition of *Chemistry for Boys* and the 1960 edition of *The Golden Book of Chemistry Experiments* in Adobe PDFs. Also on the CD-ROM are additional PDFs of more experiments and demonstrations and the Material Safety Date Sheets (MSDSs) for the chemicals in the set. With these books, chemicals and equipment one can do thousands of experiments, demonstrations and serious scientific research; one is only limited by one's imagination.

The glassware and equipment is all professional quality and is exactly like one would find in any college or industrial chemistry laboratory. The laboratory notebook is a standard item we sell in the Beagle, and users will always be able to purchase additional books.

The BenchMark™ chemicals are all packaged by H.M.S. Beagle and are standard items in our store. Additionally, these chemicals and nearly 600 more can be purchased in-store and on-line (with applicable shipping restrictions). We are always adding new chemicals to our line. Additional or replacement glassware and equipment are also sold both in our store and on-line.

The staff at the Beagle are always willing to assist amateur scientists. We can be contacted by e-mail: [jfk@hms-beagle.com](mailto:jfk@hms-beagle.com), phone: 816.587.9998, or by fax: 816-587-9997. Our on-line store can be found at [www.hms-beagle.com](http://www.hms-beagle.com). Use the following check list as you unpack the boxes; inform us of any missing items.

### Components (Check List):

#### One each of the following chemicals:

- 1152 CHEM-019 1,2,3-Propanetriol (glycerin), 25 g
- 1135 CHEM-009 1,7,7,-Trimethylbicyclo [2,2,1]-heptan-2-one (camphor gum), 15 g
- 1190 CHEM-051 2-Hydroxy-1,2,3-propanetricarboxylic Acid (citric acid), 15 g
- 1192 CHEM-052 2-Hydroxybenzoic Acid (salicylic acid), 15 g
- 1257 CHEM-103 2-Propanone (acetone), 25 mL
- 1308 CHEM-146 2,3-Dihydroxybutanoic Acid (tartaric acid), 15 g
- 1161 CHEM-025 3,3-Bis (4-hydroxyphenyl)-1-1(3H)-isobenzofuranone solution (phenolphthalein solution), 1% in alcohol, 25 ml
- 1149 CHEM-018 Acacia (gum Arabic), powder, 15 g
- 1125 CHEM-001 Aluminum Sulfate Octadecahydrate, 25 g
- 1288 CHEM-129 Aluminum, powder, 2.698 g
- 1127 CHEM-002 Ammonium Chloride, 15 g
- 3030 CHEM-062 Ammonium Dichromate, 25 g
- 1187 CHEM-049 Ammonium Hydroxide, 1.0 M, 25 ml
- 1146 CHEM-016 Ammonium Iron (II) Sulfate Hexahydrate (ferrous ammonium sulfate), 15 g
- 1148 CHEM-017 Ammonium Iron (III) Sulfate Dodecahydrate (ferric ammonium sulfate), 15 g
- 1159 CHEM-024 Ammonium Nickel (II) Sulfate Hexahydrate (nickel ammonium sulfate), 15 g
- 1128 CHEM-003 Ammonium Nitrate, 15 g
- 1201 CHEM-060 Barium Nitrate, 25 g
- 1317 CHEM-165 Benzenecarboxylic Acid (benzoic acid), 15 g

- 1130 CHEM-005 Boric Acid, 15 g
- 1205 CHEM-064 Calcium Carbide, 15 g
- 1133 CHEM-008 Calcium Carbonate (Precipitated Chalk), 15 g
- 1132 CHEM-007 Calcium Chloride Dihydrate, 15 g
- 1207 CHEM-066 Calcium Hydroxide (slaked lime), 15 g
- 1131 CHEM-006 Calcium Hypochlorite, 15 g
- 1136 CHEM-010 Calcium Oxide (lime), 15 g
- 1138 CHEM-011 Calcium Phosphate, Monobasic hydrate (monocalcium phosphate), 15 g
- 1139 CHEM-012 Calcium Sulfate Dihydrate (gypsum), 15 g
- 1165 CHEM-029 Carbon (charcoal), powder, 6.006 g
- 10953 CHEM-515 Carbon Tetrachloride, 25 mL
- 1142 CHEM-014 Chocineal, powder, 5 g
- 1188 CHEM-050 Chromium (II) Potassium Sulfate Dodecahydrate (chrome alum), 25 g
- 1140 CHEM-013 Cobalt (II) Chloride 6-hydrate (cobaltous chloride), 15 g
- 5919 CHEM-598 Collodin, 25 ml
- 1144 CHEM-015 Copper (II) Sulfate Pentahydrate (cupric sulfate), 30 g
- 1196 CHEM-055 Copper, granular, 6.355 g
- 1239 CHEM-088 Disodium Hydrogen Phosphate Heptahydrate (sodium phosphate dibasic), 15 g
- 1183 CHEM-045 Ethanoic Acid (acetic acid), 1.0 M (-6.0%), 25 ml
- 1219 CHEM-074 Ethanol (denatured alcohol), 100 ml
- 1182 CHEM-044 Gum Benzoin (benzoin resin), 15 g
- 1153 CHEM-020 Hematoxylon (logwood), 6 g
- 1185 CHEM-047 Hydrochloric Acid, 1.0 M (-5.2%), 25 ml
- 1294 CHEM-133 Hydrogen Peroxide, 3% Solution, 25 ml
- 1198 CHEM-057 Iodine, crystals, 12.690 g
- 1236 CHEM-086 Iron (II) Sulfate Heptahydrate (ferrous sulfate), 15 g
- 1164 CHEM-028 Iron (II) Sulfide (Ferrous Sulfide), 15 g
- 1166 CHEM-030 Iron, powder, 5.585 g
- 1155 CHEM-021 Magnesium Sulfate Heptahydrate (Epsom salts), 15 g
- 3827 CHEM-031A Magnesium, powder, 12.15 g
- 1157 CHEM-023 Manganese (II) Sulfate Hydrate, 15 g
- 1156 CHEM-022 Manganese (IV) Oxide (manganese dioxide), 15 g
- 1206 CHEM-065 Methanol (methyl alcohol), 20 g
- 5436 CHEM-541 Nigrosine, 5% (w/v) Solution, 25 mL
- 1186 CHEM-048 Nitric Acid, 1.0 M (-6.1%), 25 ml
- 1303 CHEM-142 Potassium Chloride, 15 g
- 1202 CHEM-061 Potassium Dichromate, 15 g
- 1222 CHEM-076 Potassium Hydrogen Tartrate (potassium bitartrate), 15 g
- 1214 CHEM-070 Potassium Iodide, 15 g
- 1162 CHEM-026 Potassium Nitrate, 25 g
- 1163 CHEM-027 Potassium Permanganate, 25 g
- 1268 CHEM-111 Potassium, lumps (under mineral oil and/or kerosene), 3.9098 g
- 9755 CHEM-392 Reagent Alcohol, 25 mL
- 5456 CHEM-542 Saunders, Red, 5 g
- 1298 CHEM-137 Sea Salt, Synthetic, 25 g
- 9740 CHEM-402 Silver Nitrate, 10% Solution, 25 mL

- 1213 CHEM-069 Sodium Bromide, 15 g
- 1173 CHEM-036 Sodium Carbonate (soda ash), 15 g
- 1216 CHEM-072 Sodium Chloride (common salt), 15 g
- 1175 CHEM-037 Sodium Hexacyanoferrate (II) Decahydrate (sodium ferrocyanide), 15 g
- 1170 CHEM-033 Sodium Hydrogen Carbonate (sodium bicarbonate), 25 g
- 1171 CHEM-034 Sodium Hydrogen Sulfate Monohydrate (sodium bisulfate), 15 g
- 1209 CHEM-067 Sodium Hydroxide (lye), 25 g
- 11279 CHEM-543 Sodium Iodide, 1.0 M, 25 mL
- 1172 CHEM-035 Sodium Metabisulfite (sodium bisulfite, sodium pyrosulfite), 15 g
- 1176 CHEM-038 Sodium Silicate solution (waterglass), 25 ml
- 1129 CHEM-004 Sodium Tetraborate Decahydrate, 15 g
- 1177 CHEM-039 Sodium Thiocyanate, 15 g
- 1178 CHEM-040 Sodium Thiosulfate Pentahydrate (sodium hyposulfate), 25 g
- 1193 CHEM-053 Sodium, lumps (under mineral oil), 2.299 g
- 5856 CHEM-596 Starch, Indicator Solution, 25 mL
- 1179 CHEM-041 Strontium Chloride Hexahydrate, 15 g
- 1180 CHEM-042 Strontium Nitrate, 25 g
- 1181 CHEM-043 Sulfur, powder, 16.032 g
- 1184 CHEM-046 Sulfuric Acid, 1.0 M (-9.4%), 25 ml
- 1194 CHEM-054 Tannic Acid, 5 g
- 1352 CHEM-901 Universal pH Indicator, solution, 25 ml (pH range = 4 to 10)
- 1218 CHEM-073 Water, Totally deionized, 125 mL
- 1211 CHEM-068 Zinc Sulfate 7-hydrate, 15 g
- 1168 CHEM-032 Zinc, powder, 6.538 g

**Equipment:**

- Alcohol Lamp
- Beaker 150 mL
- Beaker, 250 mL
- Beaker, 400 mL
- Book: *All Lab, No Lecture; Illustrated Guide to Home Chemistry Experiments*, by Robert Bruce Thompson, 415 pages
- 2 x Bottle, Square Barnes Dropping w/Rubber Top Pipets
- Bottle, Wash, 125 mL, Plastic
- Brush, Test Tube\*
- Dish, Evaporating, Porcelain\*
- Dish Petrie, Glass, w/lid\*
- Clamp, Burette
- Crucible w/Cover, Tall, 15 mL
- 2 x Electrode: Carbon, Pencil-type
- Flask, Erlenmeyer, 250 mL
- Flask, Erlenmeyer, 500 mL
- Flask, Florence (Boiling), 100 mL
- Flask, Florence (Boiling), 250 mL
- Flask, Volumetric w/Stopper, 250 mL
- Funnel, Glass\*
- Gauze, Wire (square)\*

- Goggles, Safety
- Graduated Cylinder, 10 mL
- Graduated Cylinder, 50 mL
- Graduated Cylinder, 100 mL
- Filter Paper, 100/box
- Forceps, Tweezers
- Jar, Battery
- Laboratory Apron
- Laboratory Notebook, Spiral-bound
- Master Chemistry Set CD-ROM
- Metal Strip/Electrode: Copper
- Metal Strip/Electrode: Zinc
- Mortar & Pestle\*
- 6 x Pipet, Dropper (medicine dropper), w/ Black Rubber Bulb
- 2 x Pinchcocks, Mohr
- Pipet, Graduated, 5 mL
- Prism, Equilateral, Glass
- Ring Stand w/18" Rod
- Ring Support, 3" O.D., w clamp
- Spatula, Stainless Steel
- Splints, Wood, Bundle
- Spot Plate, Plastic
- Stirring Rod, Glass
- Stopper, #1, 1-hole
- Stopper, #2 Solid
- Stopper, #2, 1-hole
- Stopper, #2, 2-hole
- 3 x Stoppers, #6 solid
- 3 x Stoppers, #6 1-hole
- 3 x Stoppers, #6 2-hole
- 6 x Stopper, #1 Solid
- Test Paper, Cobalt Chloride
- Test Paper, Congo Red
- Test Paper, Litmus, Blue
- Test Paper, Litmus, Red
- Test Paper, Potassium Iodide-Starch
- 6 x Test Tubes, 16 x 150 mm
- Test Tube Holder (Clamp)
- Test Tube Rack, 2-Tier, w/ Drying Pegs, Wooden
- Thermometer, -10 to 110°C, Red Alcohol Filled
- Thistle Tube, Plastic
- Tongs
- Triangle, Clay Pipe & Wire
- Tripod\*
- Tubing, Glass, Assorted, 1 lb
- Tubing, Rubber, 6 ft

Watch Glass\*

\*Size (diameter, volume or length) may vary.

**NOTE:** We make every attempt to make sure all components have been packed into the two Master Chemistry Set boxes; however, we sometime miss an item and sometimes we even pack something extra that isn't supposed to be there. If we have packed something extra, it is yours to keep; however if we have missed something please inform us as soon as possible and we will ship it off to you at our expense. We do keep a check list of everything that is supposed to be in the two boxes, but sometimes all those check marks hide an unchecked box and we inadvertently fail to put something in. If something is missing we will verify it on the check list we have retained with your original order. Thank you

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