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51720 – Laboratory Set for Advanced Chemistry in Creation

(2nd Edition)

Items List

50681 Safety Goggles
51723 Small Funnel
51724 Chemical Scoop
51725 Depression Plate
51726 Test Tube Rack
51727 PH Chart
51728 Chromatography Paper - 10 Sheets
51729 Ammonium Chloride - 10g
51730 Cobalt Chloride - 10g
51731 Copper Strip
51732 Copper Sulfate – 13g
51733 Ferric Ammonium Sulfate - 10g
51734 Lime Water - 20cc
51735 Phenolphthalein Solution - 10cc
51736 Polyvinyl Alcohol Adhesive - 40cc
51737 Potassium Iodide Solution - 30cc
51738 Sodium Borate (Borax) - 10g
51739 Sodium Carbonate - 10g
51740 Sodium Ferrocyanide - 10g
51741 Sodium Sulfate - 15g
51742 Sodium Thiosulfate - 10g
51743 Universal Indicator Solution - 15cc
51744 Zinc Strip
51745 Test Tubes - 5
51746 Test Tube Caps - 5
51747 Filter Paper - 10 approx.
51748 Starch Packing Peanuts - 6
51749 Cotton Swabs - 10
51750 9 Volt Battery Cap
51752 Napthalene – 10g
51754 Calcium Chloride – 10g
51755 Droppers – 5

This kit is designed for use ONLY with the Apologia's Advanced Chemistry in Creation textbook. Instructions for the experiments are found in the student textbook.

Nature's Workshop Plus! Inc., assumes no liability for any damage or injury incurred through accidental or intentional misuse or abuse of any of the chemicals or other products contained in this kit. All experiments should be performed under adult supervision exactly as outlined in the textbook "Advanced Chemistry in Creation".

Module 1 Instructions:

Since graduated test tubes are no longer available, here is how to measure the amounts needed for Experiment 1.1.

You need a 5 ml and a 14 ml measurement. 5 milliliters of liquid is exactly 1.5 inches from the base of the test tube to the water line. 14 milliliters of liquid is a completely full test tube.

General Safety Rules

- **Before you do any experiment, read these instructions and the instructions for that experiment completely.**
- Always recap each bottle when you are through with it, and keep all bottles and other materials away from younger children and pets.
- Handle chemicals with care. Caution notices and antidotes for chemicals are listed in these instructions. In the event of misuse (ingestion, inhalation, skin contact) immediately contact the **United States National Poison Control Hotline @ 800-222-1222.**
- A list of materials precedes each experiment. Some experiments require the use of common household items and materials. Common household chemicals not supplied in this kit can be purchased at local stores.
- **Avoid contact between any chemical and your skin. Never rub your eyes or put your fingers in your mouth after handling a chemical. Always wash your hands immediately with soap and warm water after working with any chemical.**
- **Before you begin any activity, roll up your sleeves, put on an apron or smock, or other protective clothing. Tie long hair back from your face so it doesn't block your view or get caught in any equipment. Also, cover your work area with newspaper or a plastic sheet. Avoid splashing chemicals on wood surfaces, vinyl flooring, carpet, etc. Keep chemicals away from food areas.**
- **Always clean your equipment and work area after each activity. Clean your lab equipment, such as pipets and scoops, with warm, sudsy water. It's okay if a small amount of liquid or solid waste goes down the drain, but you should not dispose of waste material by flushing it. After your equipment is clean, be sure to wash the sink with lots of water. Be careful not to use a kitchen towel for clean up. Use a rag or paper towels that can be disposed of.**

Disposal of Chemicals

None of the chemicals in this kit pose any significant environmental hazard. However, you should still use caution when you dispose of your waste chemicals. The waste materials from each experiment should be placed in a small plastic container, like a pill vial or film canister, and the container should be placed in a sealable bag. The contained material may then be placed in the garbage for disposal in a land fill. Never mix waste products from two different experiments in the same waste container.

Laboratory Techniques

Crushing and Grinding Chemicals

For some activities you will need to crush a solid chemical into a fine powder. One method is to wrap the solid in a cloth, tap the object with a hammer to break it into smaller crystals. Keep your fingers out of the way. Then pour the pieces into a clean dry jar lid, and grind them into a fine powder using the back of an old spoon.

Notebook

Even if you have a great memory, it helps to keep a written record of what you do. Include how you prepared, what steps you did, and what you observed during and after the activity. Good records often include notes, drawings, graphs, and even photographs.

Distilled Water

Unless the directions call for a specific type of water, it is best to use distilled water if possible.

PRECAUTIONS AND FIRST AID INFORMATION

51729 Ammonium Chloride
Warning: Causes eye and mucous membrane irritation. Harmful if swallowed or inhaled.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If inhaled, seek fresh air. Immediately rinse skin with large amounts of water. If swallowed and the person is conscious, give large amounts of milk or water.

51730 Cobalt Chloride
Warning: Harmful if swallowed or inhaled. Causes eye, skin, and mucous membrane irritation.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If inhaled, seek fresh air. Immediately rinse skin with large amounts of water. If swallowed and the person is conscious, give large amounts of milk or water.

51732 Copper Sulfate
Warning: Corrosive: Can burn eyes and irritate skin and mucous membranes. Harmful if swallowed or inhaled.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If inhaled, seek fresh air. Immediately rinse skin with large amounts of water. If swallowed and the person is conscious, give large amounts of milk or water. Do not induce vomiting.

51733 Ferric Ammonium Sulfate
Warning: Harmful if swallowed or inhaled. May cause irritation to eyes and mucous membrane.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If inhaled, seek fresh air. If swallowed and the person is conscious, give large amounts of milk or water. Induce vomiting. Seek immediate medical attention.

51734 Lime Water
Warning: Causes eye irritation. May be harmful if swallowed.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If swallowed and the person is conscious, give large amounts of milk or water.

51735 Phenolphthalein Solution
Warning: Flammable liquid. Keep away from open flame or ignition source. May cause eye irritation. Harmful if swallowed.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If swallowed and the person is conscious, give large amounts of milk or water.

51736 Polyvinyl Alcohol Adhesive
Warning: May irritate eyes. May be harmful if inhaled, swallowed, or absorbed through the skin.
First Aid Information: Immediately rinse **eyes** with water for fifteen minutes. Wash skin with soap and water. If swallowed, give water and induce vomiting as directed by medical personnel.

51737 Potassium Iodide Solution
Warning: May cause eye irritation.
First Aid Information: Immediately rinse eyes with water for fifteen minutes.

51738 Sodium Borate (Borax)
Warning: Harmful if swallowed or inhaled. May cause irritation to eyes and mucous membranes.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If inhaled, seek fresh air. If swallowed and the person is conscious, give large amounts of milk or water. Induce vomiting. Seek immediate medical attention.

51739 Sodium Carbonate
Warning: Corrosive: Can burn eyes and irritate skin and mucous membranes. Harmful if swallowed or inhaled.
First Aid Information: Immediately rinse **eyes** with water for fifteen minutes. If inhaled, seek fresh air. Immediately rinse skin with large amounts of water. If swallowed and the person is conscious, give large amounts of milk or water. Do not induce vomiting. Seek immediate medical attention.

51740 Sodium Ferrocyanide
Warning: May cause eye irritation.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If swallowed and the person is conscious, give large amounts of milk or water.

51741 Sodium Sulfate
Warning: Causes eye irritation. May be harmful if swallowed or inhaled.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If inhaled, seek fresh air. If swallowed and the person is conscious, give large amounts of milk or water.

51742 Sodium Thiosulfate
Warning: May cause eye irritation**.**
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If swallowed and the person is conscious, give large amounts of milk or water.

51743 Universal Indicator Solution
Warning: Flammable liquid. Keep away from open flame or ignition source. May cause eye irritation. Harmful if swallowed.
First Aid Information: Immediately rinse eyes with water for fifteen minutes. If swallowed and the person is conscious, give large amounts of milk or water.

51752 Napthalene
Warning: May irritate eyes. May be harmful if inhaled, swallowed, or absorbed through the skin.
First Aid Information: Immediately rinse eyes or skin with water for fifteen minutes. If swallowed and the person is conscious, give large amounts of milk or water.

51754 Calcium Chloride
Warning: Avoid contact with eyes, skin and clothing. Avoid breathing dust.
First Aid Information: Immediately rinse eyes or skin with water for fifteen minutes. If swallowed, induce vomiting. If inhaled, remove to fresh air.

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Other Items You Will Need

Paper Towel
White Paper
Hair Dryer
Water
Heat Source to Boil Water
Small Glasses
Styrofoam Cups
Magnifying Glass or Microscope
Distilled Water
Pan
Ice
Stove
Two Styrofoam Cups
Thermometer (0.0 Degrees C to 100 Degrees C)
Salt
Tablespoon
Small Saucepan
Paper Clips
Plate
Pencil
Tape
Blue Food Coloring
Yellow Food Coloring
Green Food Coloring
Liquid Dish Soap
Vegetable Oil
Two Bowls
Baking Soda
Rubbing Alcohol
Stirring Spoons
Clear Soda Pop
Clear Vinegar
Scissors
Aluminum Foil

Saucepan lid or Frying Pan Lid
Large Bowl
Potholders
Zippered Plastic Sandwich Bag
Ammonia
White School Glue
Old Spoon
Packet of Active Dry Yeast
Tablespoon
Glass that Holds at Least One Cup of Water
Desk Light
Stopwatch
Voltmeter
Steel Wool or Sand Paper
Hydrogen Peroxide Solution
Plastic Trash Bag
Toothpick
Small Plate or Bowl
Cream of Tartar
Sugar
Measuring Spoons & Cups
Some one to help
9-volt Battery