

Chem 11 Lab Needs 2018

Product	Vendor	Approx. \$
** American Weigh Scales AWS-201-BLK Digital Personal Nutrition Scale or other 0.01 g 200g max jeweler scales	Amazon - order ASAP	\$13.36
** ThermoPro TP02S Instant Read Digital Meat Cooking Thermometer or others in various stores	Walmart -order ASAP	\$4.21
** Chemical splash goggles	Lowes or Home Depot	\$3.00
Neodymium Rare-Earth Magnet (or other very strong magnet)	Home Depot, hardware, Harbor Freight	\$4.00
Disposable gloves Vinyl, latex or nitrile	Various	\$5.00
Measuring spoons	Various	\$1.00
Elmer's white glue (no other brand!) 4 oz	Walmart	\$1.99
Equate nail polish remover, non acetone 10oz	Walmart	\$1.48
Equate nail polish remover, 100% acetone 6oz	Walmart	\$0.83
Jungle Clear Water in pet fish section. Must have potassium permanganate	Walmart	\$3.12
Tetra Beta Safe in pet fish section. Must have sodium thiosulfate	Walmart	\$3.24
decolorized iodine	Walmart or various	\$3.24
hydrogen peroxide	Walmart or various	\$1.00
Rubbing alcohol 70% isopropyl alcohol unscented	Walmart or various	\$1.50
Epsom salt unscented. Various grocers, drug and dept. stores \$3-\$5	Walmart or various	\$4.00
Kellogg's All Bran Complete Wheat Flaked	Winco only	\$3.58
Cornstarch Various grocers	Winco - bulk	\$0.10
Baking soda Various grocers	Winco - bulk	\$0.10
table salt bulk or free packets at fast food places	Winco - bulk	\$0.10
table sugar bulk or free packets at coffee places	Winco - bulk	\$0.10
Alum (spice section)	Winco or various grocers	\$3.54
120 milliliter glass (Pyrex) measuring cup. Various	Winco or various grocers	\$2.56
Dry yeast (various grocers)	Winco or various grocers	\$0.78
White vinegar 1 quart or smaller	Winco or various	\$1.22
Ammonia cleaning solution unscented	Winco or various	\$0.98
distilled water 1 gallon	Winco or various	\$0.79
Borax Various stores	Winco or various	\$3.97
Tincture of Iodine (Not decolorized!!!)	CVS or Walgreens	\$4.99
NorCal Brewing pkg contains: calcium chloride 2oz; calcium sulfate 2 oz; calcium carbonate 2 oz,	NorCal Brewing	\$15.99
and citric acid 2 oz, lactose 2 oz, dextrose 5 oz, Maltodextrin 2 oz	NorCal Brewing	
Lab Manual provide at no cost!		
Approximate Total Cost		\$88.77

** means that these items may be provided to students at the ACE office.

Shasta College Provides: 5 coffee filters, chromatography papers, cold pack, 9V battery, one diaper, maltose, Vit.C capsule, polymer numbers 2 and , and clamshell (keep the clamshell!)

Materials needed by lab activity

Needed for all labs:

1. Disposable gloves, vinyl, latex or nitrile.
2. Digital camera.



Chemical Splash Safety Goggles found at Lowe's or Home Depot.



Small cups or jars. Stir sticks found at coffee kiosks. Small cups at Walmart if needed.



Lab 1: Crystals lab:

1. Distilled water (H_2O),
2. Small measuring cup with marks in milliliters (mL),
3. Measuring spoon set
4. Digital thermometer (at right recommend ThermoPro TP02S Instant Read Digital Meat Cooking Thermometer found at Walmart order ASAP free deliver to store) or any digital thermometer which reads in Celsius with a wide range.
5. **Alum** (potassium aluminum sulfate, $KAl(SO_4)_2$) in the spice section of grocery stores,
6. **Epsom salts** (magnesium sulfate heptahydrate, $MgSO_4 \cdot 7H_2O$,
7. **non-iodized table salt** (sodium chloride, $NaCl$),
8. **Borax**,
9. Regular table **sugar** (sucrose),
10. Five Coffee filters for filtering (**Provided**)



Lab 2: Fe in cereal lab:

1. aluminum foil,
2. Jeweler or nutritional electronic balance measuring to 0.01 gram with 200g maximum. At right from Amazon: American Weigh Scales AWS-201-BLK Digital Personal Nutrition Scale, Pocket Size, Black.
3. Kellogg's All Bran Complete Wheat Flakes cereal No Substitutions!! (Winco or order from Walmart),
4. Extra strong magnets (**Rare earth Neodymium best there are others than pictured**),
5. Blender or food processor,
6. Thin walled clear plastic cup or container (Winco olive bar containers are great) OR shallow plastic container and Ziplock bags



Lab 3: Water in hydrate lab: aluminum foil, electronic balance, Epsom salt and oven

Lab 4: Solubility & Electrolyte

1. 9 volt battery (**Provided**),
2. distilled water,
3. table salt,
4. table sugar (sucrose, $C_{12}H_{22}O_{11}$),
5. Epsom salts,
6. baking soda sodium bicarbonate ($NaHCO_3$),
7. washing soda sodium carbonate (Na_2CO_3),
8. Corn starch,
9. White vinegar (5% acetic acid CH_3CO_2H in water),
10. Rubbing alcohol (70% isopropyl alcohol, $C_4H_{10}O$, in water).
11. The packet from NorCal Brewing on Churn Creek (or any Home Brew store) which contains calcium chloride ($CaCl_2$), calcium sulfate ($CaSO_4$), calcium carbonate ($CaCO_3$), and citric acid ($C_6H_8O_7$).



Lab 5: pH lab:

1. Head of red (purple) cabbage and knife to cut cabbage,
2. Stove and pot to boil cabbage OR blender and cheese cloth
3. Plastic containers to store cabbage juice extract (old 12 ounce water or soda bottles work great).
4. Household Ammonia (NH_3),
5. Materials used in Solubility and Electrolyte lab

Lab 6: Redox lab:

1. New penny,
2. File,
3. galvanized nail HG (Hot dip not electrogalvanized) single available at hardware store.
4. Vinegar,
5. Tincture (colored) iodine (I_2),
6. Decolorize iodine,
7. 3% hydrogen peroxide (H_2O_2).
8. Vitamin C capsule (**Provided**)
9. The two following in aquarium fish supplies (I found at Walmart)

Tetra BetaSafe containing sodium thiosulfate - look on back for ingredient ($Na_2S_2O_3$). Another option is API TAPWATER CONDITIONER available at most aquarium stores, Petco and Petsmart

Jungle Clear Water containing potassium permanganate ($KMnO_4$) look on back for ingredient.



Lab 7: Chromatography Lab:

1. Three papers one with 4 black pen dots, one with 4 green, and one with 4 blue are **Provided**. Unknown sample to identify also **Provided**. Be sure to write down your unknown number.
2. Non-acetone nail polish remover.
3. Small glass jar



Lab 8: Catalysts lab:

1. rusty nail,
2. potato and cheese cloth or small piece of liver,
3. corn starch,
4. tincture of iodine,
5. decolorized iodine,
6. 3% hydrogen peroxide

Lab 9: Polymer lab:

1. non-acetone nail polish remover,
2. 100% acetone nail polish remover or acetone from the hardware store,
3. Elmer's All Purpose Glue (not school glue or other glues),
4. Borax,
5. one disposable diaper **Provided**,
6. Table salt,
7. Isopropyl (rubbing) alcohol,
8. Samples of recycling code polymers 1-6 (Numbers 3, 4 and 6 the clamshell **Provided**),
9. Oven.
10. Food color and permanent marker's optional for more fun.



Lab 10: Fermentation lab:

1. Table sugar,
2. Cornstarch,
3. Dry yeast packet at grocery store.
4. Maltose (**Provided**)
4. The packet from NorCal Brewing on Churn Creek (or any Home Brew store) which contains: small packages of dextrose, lactose, maltodextrins.



Lab 11: Thermochemistry lab:

1. Balance,
2. Thermometer,
3. Styrofoam cups,
4. Equate instant cold compress **Provided**
5. Vinegar
6. Household ammonia.



Lab 19: Unknowns lab: Provided unknowns, 9 volt battery(**Provided**). And materials you have used previously: distilled water, sucrose, starch, sodium chloride, sodium bicarbonate, sodium carbonate, calcium chloride, calcium sulfate, calcium carbonate, white vinegar, colored tincture of iodine, cabbage juice indicator.