


SAMPLE SOP FOR EXPERIMENTS (CME-POLICY-002)

SOP	Date	Author	Supervisor	Version	Barcode
CME-SOP-Sample	July 18, 2019	H. Laryea	A. De Visscher	1.5	

PROJECT TITLE:

Column Chromatography

DESCRIPTION:

Study the purification of individual chemical compounds from mixtures of compounds.

OBJECTIVE(S):

To separate the xanthophylls (yellow) and chlorophylls (green) in leaf pigment

PROCEDURE:

1. Put quartz glass wool into the column.
2. Fill the column with starch at an interval of 10 grams.
3. Add petroleum ether into the top of the column.
4. Adjust the pressure to 100 Pa and add the chlorophyll solution to the column.
5. Add n-propyl alcohol to the mixture in column.

PERSONAL PROTECTIVE GEAR:

- Protective clothing
- Lab coats
- Protective gloves (Nitrile)
- Protective goggles or glass
- Fume-hood for preparation of solutions

REQUIRED CHEMICALS:

- Chlorophyll Extract
- Starch, soluble, 100g
- Petroleum ether, 40°-60°C, 500 ml
- Propyl alcohol, normal 250 ml
- Quartz glass wool

EQUIPMENT:**Analytical Instruments**

- UV Analysis Lamp
- Cells for Spectrophotometer – 2 pieces
- VIS Spectrophotometer

Lab Equipment

- Graduate pipette, 0.1 ml
- Volumetric pipette, 50 ml
- Graduated Cylinder, 50 ml
- Erlenmeyer flask wide neck, 250 ml. PN45
- Closure caps, 10, GL25
- Air Control Valve
- Pipette, with rubber bulb, long tip
- Spring manometer, 0-1000 mbar
- G-clamp
- Universal clamp
- Column for ion-exchange chromatography

EMERGENCY SHUTDOWN:

- Turn off all the analytical instruments.
- Turn off heating plate.

SAFETY:**Chlorophyll Extract (CAS #479-61-18)****HAZARD** 

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), or inhalation.

SMALL SPILL

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

HANDLING

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe gas/fumes/vapour/spray.

FIRST AID


Ingestion: Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Inhalation: Allow the victim to rest in a well-ventilated area. Seek


immediate medical attention.

Skin contact: After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases, and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Soluble Starch (CAS 900-84-9)

HAZARD 	Hazards not otherwise classified HNOC.
SMALL SPILL	Sweep up or vacuum up spillage and collect in suitable container for disposal.
HANDLING	Avoid contact with skin and eyes. Do not breath dust. Wash hands before breaks and immediately after handling the product. Minimize dust generation and accumulation.
FIRST AID	<p><i>Eye contact:</i> Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.</p> <p><i>Skin contact:</i> Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.</p> <p><i>Inhalation:</i> Remove from exposure, lie down. Move to fresh air. If not breathing, give artificial respiration. If symptoms arise, call a physician.</p> <p><i>Ingestion:</i> Clean mouth with water. Do no induce vomiting. Get medical attention.</p>

Petroleum Ether (CAS 8032-32-4)

HAZARD 	May cause genetic defects. May cause cancer.
SMALL SPILL	Soak up with inert absorbent materials. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment.
HANDLING	Wear personal protective equipment. Do not get in eyes, on skin, or

on clothing. Use only under a chemical fume hood. Do not breathe vapours or spray mist. Do not ingest. Keep away from open flames, hot surfaces, and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges.

FIRST AID

General advice: Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical advice.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method of victim ingested or inhaled the substance; give artificial respiration with the aid of a picket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Risk of serious damage to the lungs.

Ingestion: Do not induce vomiting. Call a physician or Poison Control Centre immediately. If vomiting occurs naturally, have victim lean forward.

Important symptoms and effects: Breathing difficulties. Inhalation of high vapour concentrations may cause headaches, dizziness, tiredness, nausea, and vomiting.

Propyl Alcohol (CAS 71-23-8)

HAZARD



Highly flammable liquid and vapour. Harmful if swallowed. Causes serious eye damage. May cause drowsiness or dizziness.

SMALL SPILL

Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent sweep and pick up using plastic or aluminum shovel, and store in closed containers for recycling or disposal.

HANDLING

All electrical and mechanical equipment (including lighting, switchgear, and forklift trucks) used with or around this product must be explosion-proof. Empty containers may contain a

flammable/explosive vapour.

Always ensure that containers, whether empty or full, are tightly sealed unless in use.

FIRST AID

Skin: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.

Eyes: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.

Inhalation: Remove from contaminated area promptly. **CAUTION:** Rescuer must not endanger themselves. If breathing stops, administer artificial respiration and seek medical aid promptly.

Ingestion: Give plenty of water to dilute product. Do not induce vomiting. Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Quartz Glass Wool (CAS 60676-86-0)

HAZARDS



May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

SMALL SPILL

If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Do not create dust.

HANDLING

Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of dust in the air.

FIRST AID

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. Consult a doctor.

Inhalation: Remove victim from exposure ensuring one's own safety whilst doing so. Consult a doctor.