

Standard Operating Procedures

Laboratory Specific – Biochemistry Shared Instrumentation Facility

Centrifuges – All sizes and speeds

Department: Chemistry and Biochemistry Date when SOP was written: Sept 20, 2012

Date when SOP was approved by the lab supervisor: _____

Supervisor Name and Signature: Margot Quinlan _____

Internal Laboratory Safety Coordinator/Lab Manager: Matthew Graf

Laboratory Phone: 310- Office Phone: 323-447-6288

Emergency Contact: Margot Quinlan (310) 206-8064

Location(s) covered by this SOP: Young Hall 5044, 5048A, 5048B

Type of SOP: Process Hazardous Chemical Hazardous Class

Purpose

Centrifuges are used to separate mixed solutions by density, using high-speed spinning to create a strong centrifugal force.

The primary hazard is unbalancing of spinning items and rotors, which could cause the rotor to loosen from the instrument with a great deal of force.

Potential Hazards/Toxicity

Inhalation – N/A

Skin – N/A

Eyes – N/A

Ingestion – N/A

Additional – Standard Electrical Hazard for all instruments - avoid touching electrical junctures and mind liquid spills which could damage electrical components.

Basic Training Requirements

- Lab personnel working with the **any facility instrument** must have attended the '*Laboratory Safety Fundamental Concepts*' classroom training course offered by EH&S and have read and signed the Shared Instrument Facility General Use Safety Policy.
- Lab personnel must have attended an instrument specific training session with the Biochemistry Instrument TA or Instrument facility approved manager prior to any use, covering general use and safe practices of the instrument in question.

Personal Protective Equipment (PPE)

No Additional PPE is required beyond what is stipulated by the General Use Safety Policy.

Respiratory protection

None required

Hand protection

None required unless by the demands of a users personal experiment.

Eye protection

Standard Goggles.

Skin and body protection

Lab coat, long pants, closed-toed shoes.

Hygiene measures

Avoid touching instrument surfaces with gloved hands. Wipe instruments with 20% EtOH - dampened towel following use.

NEVER TOUCH Computer surfaces (mouse, keyboard etc) with gloved hands.

Engineering Controls

None required.

First Aid Procedures

Treat if possible in accordance with the type of injury, consult a physician or seek emergency care if necessary.

Spill and Accident Procedure

Clean any spill according to the demands of the chemical nature of the experiment being conducted. See the General Use Safety Policy.

Medical Emergency Dial 911 or x52111

Life Threatening Emergency, After Hours, Weekends And Holidays – Dial 911

(or 310-825-1491 from cell phone) or contact the Ronald Reagan UCLA Medical Center (emergency room) directly at **x52111** (located at 757 Westwood Plaza, enter from Gayley Avenue). *Note: All serious injuries must be reported to EH&S at **x59797** within 8 hours.*

Non-Life Threatening Emergency– Go to the Occupational Health Facility (OHF),

x56771, CHS room 67-120 (This is on the 6th floor, 7th corridor, room 120. Enter through the School of Dentistry on Tiverton Drive and proceed to the “O” elevator to the 6th floor.)Hours: M - F, 7:30 a.m. to 4:30 p.m. At all other times report to Ronald Regan UCLA Medical Center (emergency room) at **x52111**. *Note: All serious injuries must be reported to EH&S at **x59797** within 8 hours.*

Needle stick/puncture exposure

N/A

Decontamination/Waste Disposal Procedure

Label Waste

N/A

Store Waste

NO WASTE STORAGE ALLOWED IN FACILITY

Dispose of Waste

CHEMICAL WASTE TO BE DISPOSED OF BY USER OUTSIDE OF FACILITY

Gloves and towels free from exposure to Hazardous chemicals may be disposed of in provided trash cans.

Safety Data Sheet (SDS) Location

Copies Located in the “Facility Safety Binder” in Young Hall 5044

Protocol/Procedure

* To prevent unbalancing it is important to ensure that any sample has a corresponding tube with equal moment of inertia in the opposite position.

* Always include the centrifugation vessel, cap or seal, and any spacers or holders when balancing samples.

* Always use the same size and material vessels for balancing samples.

* Do not exceed suggested volumes for sample vessels.

In truth, moment of inertia (density) must be balanced, not simply mass.

*****A small volume of a dense solution, and a large volume of a low density solution may have the same mass, but they will never balance during centrifugation.*****

The simplest method of balancing samples is to divide the sample into two parts and balance by weight – since both will have the same density.

When not possible, the same buffer without sample should closely approximate.

- 1) Place temperature equilibrated rotor into centrifuge. Mind that teeth and groves interlock between rotor and centrifuge.
- 2) Place balanced tubes into opposite corresponding positions. For multiple balanced pairs, distribute them evenly around the rotor.
- 3) Secure rotor lid.
- 4) Start spin according to experimental protocol.
- 5) REMAIN AT CENTRIFUGE UNTIL 75% of spin speed is achieved, to monitor for imbalances. All machines will automatically stop if an imbalance is registered.
- 6) After spin, carefully remove samples. Wash out rotor with DI water in large sink in YH 5044 and leave next to sink, upside down on paper towels to dry.
- 7) RECORD SPIN IN LOG BOOK.

NOTE

Any deviation from this SOP requires approval from a Facility Manager.

Documentation of Training (signature of all users is required)

I have read and understand the content of this SOP and have undergone training by an approved Facility Manager. I also attest that I have read and signed the Instrumentation Facility General Use Safety Policy prior to this instrument specific training.

Name

Signature

Date
