

Standard Operating Procedures

Laboratory Specific – Biochemistry Shared Instrumentation Facility

Isothermal Titration Calorimeter (ITC-200)

Please fill out the form completely. Print a copy and insert into your
Laboratory Safety Manual and Chemical Hygiene Plan.
Refer to instructions for assistance.

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

The ITC-200 measures small changes in temperature resulting from a controlled titration reaction in a small adiabatic chamber; to measure thermodynamic parameters of a system.

The PRIMARY HAZARD is breaking of glass resulting from the mishandling of the 2 injection syringes used during experiments. Syringe needles are blunted or protected and therefore not a puncture hazard; the syringe bodies however, are made of glass.

A SECONDARY HAZARD is the small volume of METHANOL used during the final wash and dry of the syringe. A stock bottle of less than 100mLs is kept in among the instrument bottles located next to the ITC in secondary containment. During the final wash and dry procedure, less than 2mLs will flow through the instrument body itself.

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

All Syringes involved in iTC are blunted and not a skin puncture hazard.

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

- 1) Remove any hand protection being worn.
- 2) Initialize instrument and computer as demonstrated during training.
- 3) Take care when handling chamber syringe or titration syringe, as they are glass and expensive.
- 4) Collect all injection waste in your own container that you will remove from the facility following your experiment.
- 5) ENSURE THAT THE FILL PORT TUBING IS REMOVED FROM THE INJECTION SYRINGE PRIOR TO BEGINNING DATA COLLECTION.
- 6) Collect Data and remove sample from chamber.
- 7) Wash Chamber as demonstrated (minimum 2x with 20% Contrad, 3x with Water).
- 8) Wash Injection syringe well with water (NO CONTRAD IN THE INJECTION SYRINGE).
- 9) Perform Water-Water titration to ensure proper cleaning as demonstrated during training.
- 10) Repeat Cleaning and Water-Water titration if necessary.
- 11) Perform final Chamber and Injection Syringe Wash, ensure Injection syringe is fully dry.
- 12) Leave Instrument on and log out of computer user account.
- 13) Wipe instrument surfaces with towel dampened with 20% EtOH, and computer if necessary and soiled during experiment.

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.