

	Environmental Analysis Teaching and Research Laboratory	Date: 09/XX/2014	Number: X
	Standard Operating Procedure	Title: mySPIN 12 Microcentrifuge	
	Approved By: TBD	Revision Date: November 11, 2016	

## 1. Scope and Application

**1.1** The scope of this SOP is to train researchers in how to effectively use the Microcentrifuge system.

**1.2** As a researcher, the microcentrifuge is an essential part of the lab. This device will allow for the spinning of relatively small amounts of liquid samples at speeds reaching tens of thousands of g-force.

## 2. Summary of Method

**2.1** This SOP provides instructions on how to use the Thermo Scientific mySPIN 12 Microcentrifuge.

**2.2** This SOP also provides some guidance on how to troubleshoot an issue should any problems arise.

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### **3. Acknowledgements**

**3.1** As usual we acknowledge the students who have tried to follow and made suggestions on how to improve this guide. In particular, Edinam E, etc.

### **4. Definitions**

**4.1** Term1: is...

### **5. Biases and Interferences**

**5.1** Biases and interferences can come from...

### **6. Health and Safety**

**6.1** Describe the risk...

### **Safety and Personnel Protective Equipment**

### **7. Personnel & Training Responsibilities**

**7.1** Researchers training is required before the procedures in this method can be used...

**7.2** Researchers using this SOP should be trained for the following SOPs:

- SOP01 Laboratory Safety
- SOP02 Field Safety

### **8. Required Materials and Apparatus**

**8.1** Item 1 w/catalog number!

**8.2** Item 2

### **9. Reagents and Standards**

### **10. Estimated Time**

**10.1** This procedure requires XX minutes...

## **11. Sample Collection, Preservation, and Storage**

## **12. Procedure**

### **12.1 Prepare ...**

### **12.2**

## **13. Data Analysis and Calculations**

## **14. Error Status**

### **Motor Overload**

**14.1** If you receive a Motor Overload error, this means something is interfering with the rotor. To fix this, clear the rotor and reset.

### **User Stop**

**14.2** If you receive a User Stop error, this means you have held down the START/STOP and implemented a quick stop.

### **Balance**

**14.3** If you receive a Balance error, inspect the tubes for equal tube filling or improper placement. Once you have determined everything is correct, rerun the microcentrifuge.

**14.4** If the balance error continues to happen, remove the tubes and determine if the balance error still persists with an empty rotor.

**14.5** If the error continues to persist, inspect the rotor for improper installation.

### **Temperature**

**14.6** If you receive a Temperature error the unit has exceeded the normal operating temperature.

**14.7** To rectify this, turn off the unit and allow it to cool.

### **Excessive Tilt**

**14.8** If you receive a Excessive Tilt error the unit has experienced a non-normal tilt event. In this case, make sure the unit is placed on a level surface. Once corrected, rerun.

## **Lid Fail**

**14.9** If you receive a Lid Fail error this means the lid has opened during the cycle.

**14.10** To rectify this check for proper operation of the lid lock mechanism. The lid should stay locked during the entire cycle.

## **Rotor Lock**

**14.11** If you receive a Rotor Lock error this means the unit has experienced a problem with the rotor.

**14.12** To rectify this, correct the rotor interference. Once corrected, rerun.

## **15. Trouble Shooting**

### **No Power Present**

**15.1** If there is no power present verify that the AC adapter is fully plugged into the wall and rear of the unit. Additionally, verify that the power switch is turned on.

### **Unit not operating normally**

**15.2** In the case where the unit or display is not functioning normally, turn off the unit, wait for 2 minutes, and turn the power back on.

### **Excessive vibration/ noise**

**15.3** If your unit is making excessive vibrations or noise, inspect the tubes for equal fill or improper placement. Inspect the rotor for improper installation. Finally, remove the tubes and determine if the noise persists with an empty rotor.

### **Lid will not close**

**15.4** If the lid of the unit will not close, verify that nothing is blocking the lid from fully closing. After which, verify that nothing has fallen into the lock mechanism opening.

### **Lid will not open**

**15.5** If you for any reason you need to manually open the lid to access tubes due to an error or power loss, please perform the following:

**15.6** 1. Turn off the unit and remove the power cord.

**15.7** 2. Make sure the rotor has stopped completely.

**15.8** 3. Use a thin rod and insert it into the opening on the button.

**15.9** 4. Press gently but firmly. You will feel a mechanical movement within the unit and the lid will release.

**15.10** 5. Remove the rod, set the unit on the feet.

**15.11** 6. Remove your tubes and reclose the lid.

## **16. QC/QA Criteria**

## **17. References**

**17.1** APHA, AWWA. WEF. (2012) Standard Methods for examination of water and wastewater. 22nd American Public Health Association (Eds.). Washington. 1360 pp. (2014).