

	Environmental Analysis Teaching and Research Laboratory	Date: 11/11/2016	Number: 14
	Standard Operating Procedure	Title: Sorvall ST 8/ 8R Centrifuge	
	Approved By: Los Huertos	Revision Date: November 13, 2016	

## 1. Scope and Application

- 1.1** The scope of this SOP is to train researchers on how to effectively use the Sorvall ST 8/ST 8R Microcentrifuge.
- 1.2** As a researcher, the centrifuge is pertinent in the lab to be able to separate substance mixtures of different densities. This centrifuge in particular can also become an in-vitro-diagnostics device, if used in tandem with the hematocrit rotor accessories.

## 2. Summary of Method

- 2.1** This SOP provides instructions on how to use the Sorvall ST 8/ 8R Centrifuge.
- 2.2** This SOP also provides guidance on how to troubleshoot an issue should trouble arise.

## 3. Definitions and Control Panel

- 3.1** The control panel of the Sorvall Centrifugation systems has various keys and displays. They are as follows:

- 1. Display- The main visual display has three main functions; display the status of the centrifuge; display the speed, in RPM, or display the RCF value; display the running time.
- 2. Acceleration/Deceleration Profiles Key- Press this key multiple times to cycle through the available profiles.
- 3. PULSE key- Press the PULSE key to immediately start the centrifugation run and accelerate up to maximal permissible end speed, depending on the used rotor. Releasing the key initiates a stopping process at the highest braking curves.
- 4. OPEN key- Press the OPEN key to activate the automatic door release, possibly only when the device is switched on and when the rotor is fully stopped.
- 5. STOP key- Press the STOP key to manually end the centrifugation run.
- 6. START key- Press the START key to manually end the centrifugation run.
- 7. Arrow keys- Use these keys in order to modify the displayed value.

- 8. TOGGLE key for Speed/RCF Value- Use the TOGGLE key to change the display mode from SPEED to RCF or vice versa.
- 9. Program keys- Located on the left of the device, use the program keys to save and load programs. More on this later.

#### **4. Speed and RCF Selection**

**4.1** RPM stands for Revolutions Per Minute while RCF stands for Relative Centrifugal Force and also allows for better transfer of protocols between centrifuges and rotors of differing size.

**4.2** To ensure that the rpm or RCF is correctly set follow the following instructions:

- 1. Press the TOGGLE key below the SPEED display to cycle through the rpm/RCF selection.
- 2. The LED light will indicate if "RPM" or "RCF" is selected. RPM/RCF can be viewed during a run by pressing the toggle button.
- 3. Enter the desired value by holding the arrow keys below SPEED in the corresponding direction, until the desired value shows. First RPM/ RCF will change in steps of 10. Holding a key pressed will change the runtime then in steps of 100 and then in steps of 1000.
- 4. Press the START key to accept or wait 4 seconds until the centrifuge automatically saves the chosen values. Moving to setting time or temperature also automatically stores the set value.

#### **5. Interferences**

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

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

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

Researchers training to use the Eosense chambers and Picarro analyzer include the following components:

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

- SOP03 Field Work
- SOP04 Electrical Power in the Field

## **8. Required Materials**

**Item 1 w/catalog number!**

**Item 2**

## **9. Estimated Time**

**9.1** This will take XX minutes...

## **10. Procedure**

**10.1** Prepare ...

**10.2**

## **11. References**

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