

Standard Operating Procedure

SOP020

Title: USE AND MAINTENANCE OF WATER BATHS

Location: CBE Laboratories

1. PURPOSE

To describe the procedures for the use and maintenance of Water Bath's in the CBE.

2. SCOPE

This SOP applies to the operation and maintenance of Water Baths in CBE laboratories. The water bath should normally be maintained at 37C and should not in general be changed from this value.

3. REFERENCES

4. SPECIAL NOTES: HEALTH & SAFETY

- Wear safety goggles when placing or removing items from the water bath
 - Do not leave unattended for long periods of time – the user must allow for loss of water through evaporation and must ensure that it does not evaporate to dryness.
 - Take care when raising and removing the lid, it may be hot. Steam and hot vapors can scald.
 - Ensure that the vessel and the liquid it contains is compatible with the chosen operating temperature i.e. is not flammable, does not release toxic fumes etc. Consult risk assessments where appropriate.
- (i) Do not block or restrict ventilation slots.
- (ii) Disconnect the unit from the power supply before filling or emptying the water bath.
- (iii) Do not top-up or empty the water bath until the water has cooled to room temperature.
- (iv) If the ALARM lamp is illuminated do not touch the liquid or the heater. Contact the Responsible Person or Laboratory Manager.

5. RESPONSIBILITES

CBE Laboratory Users

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- (i) Report any problems to the LL, RP and LM. Follow the SOP as described and to inform the Responsible Person and/or Laboratory Manager about any deviations or problems that may occur while performing the procedure.
- (ii) Carry out appropriate decontamination if hazardous material is spilled on or inside the equipment.
- (iii) Place appropriate warning signs if the water bath is to be used at high temperature settings
- (iv) Turn off the water bath if the user is the last person to leave the laboratory unless, an overnight incubation is being performed which is indicated with an appropriate sign attached to the bath.

CBE Laboratory Leaders (LL)

- Train users in cleaning of water baths as described in this SOP.

Responsible Person (RP)/Laboratory Manager (LM)

- Arrange for equipment to be fixed if faulty and planned preventative maintenance.
- Ensure that the routine cleaning is completed and recorded via house-keeping record document. Liaise with the Laboratory Manager to schedule of service and preventative maintenance with authorized service representatives. External maintenance and servicing of the equipment can only be performed after it has been suitably disinfected (see SOP003) and a 'Decontamination Certificate' has been issued by the School/Building/Unit Safety Co-ordinator. An example of a Decontamination Certificate is given in Section 8.

- (i) Provide users of the equipment with the following:
 - Information on the hazards and risks to health
 - Instruction in safe procedures for operating the equipment that may include specific training or supervision where appropriate.

6. EQUIPMENT AND MATERIALS

- i) Paper towels
- ii) De-ionised water
- iii) Julabo Aqua-stabil water bath treatment disinfectant
- iv) 1:50 Chemgene disinfectant solution in spray bottle
- v) Measuring cylinder and measuring bucket
- vi) Water baths in CBE (listed below)

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H21: Grant Sub Aqua 26 Plus		26L	Serial Number: QV1103007
H23: Grant Sub Aqua Pro	18L		Serial Number: UF1348005
H25: Fisherbrand Water Bath			Serial Number: 9C0931004
H27: Grant Sub Aqua Pro	26L		Serial Number: QV1133002
H29: Grant Sub Aqua Pro	12L		Serial Number: UE1438002
H34: Grant Sub Aqua 2 Plus	2L		Serial Number: QQ1029003
H34: Astra Zenica Discovery BioScience Water Bath			Serial Number: 03928016

Wolfson

T208B: Clifton - 22L Water Bath

Serial Number: 90887

7. PROCEDURE

Operating the Water bath

- (i) Plug in and switch on power to the unit.
- (ii) Check that the power (mains) lamp and heater lamp (orange) are on. If the heater lamp does not come on when expected and the temperature of the bath does not rise, refer to the fault diagnosis file in the Operating Manual (Equipment File).
- (iii) Adjust the temperature using the temperature knob and allow to equilibrate to the required temperature for 10 minutes.

CAUTION: If selecting a temperature above 60C, follow the precautions listed in Section 4

- (iv) If the temperature cannot be maintained or regulated at the required temperature contact the Responsible Person immediately (refer to Section 7.2)
- (v) Once the procedure is complete, turn off the water bath.

Cleaning Procedure

The water bath should be cleaned regularly using the following procedure:

Step 1: Remove all items from water bath – ancillary items eg racks, floats etc

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Step 2: Drain water from water bath using local laboratory procedure (seek training from LL if unsure). DO NOT attempt to lift water bath to empty water. Wipe up any spillages immediately.

Step 3: Wipe the inner surfaces of the water bath and all ancillary items dry using paper towel ensuring all residue is removed. Inspect for damage/rust and report any issues to LM

Step 4: Wipe clean the inner and outer surfaces of the water bath and all ancillary items with 1:50 Chemgene disinfectant solution and allow to dry.

Step 5: Add required amount of Julabo Aqua stabil water bath disinfectant (2mL Julabo/L of deionised water. See table below:

Volume of water added (L)	Volume of Julabo disinfectant added (mL)
2	4
5	10
10	20

Step 6: Add required amount of deionised water using a measuring cylinder/container and pour into water bath.

7.2. Preventative Maintenance

The water bath should be inspected weekly as part of housekeeping duties and cleaned regularly according to the manufacturer's instructions or after contamination with hazardous material.

7.3. Equipment Malfunction

- (i) The Responsible Person and Laboratory Manager should be informed if any part of the equipment fails or malfunctions. With permission of the Responsible Person or Lab Manager the user should consult the Operator Instruction Manuals for fault finding and troubleshooting procedures.
- (ii) All problems and corrective actions should be recorded in the maintenance record which can be found outside each respective laboratory.
- (iii) If the equipment fails to work or malfunctions and cannot be rectified according to troubleshooting procedures detailed in the Operator and Users Manuals the following should be observed:

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- Inform the Responsible Person and the Lab Manager.
- Attach a 'Do Not Use' notice.
- Contact the manufacturer for advice. External maintenance and servicing of the water bath can only be performed after it has been suitably disinfected (see SOP003) and a 'Decontamination Certificate' has been issued (a proforma is available on the CBE website).

8. DOCUMENTATION

The following records are outputs of this SOP:

- Weekly House-keeping record (arranged by the LM).
- Monthly maintenance record (listed outside of each laboratory)
- QS-Form-009 Generic Equipment Decontamination Form

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SOP Version History

Version Reviewed	Date Revised/ Reviewed	Revision Summary	New Version Number
1.0	25.03.10 E. Ratcliffe / P.Hourd	Annual review – following revisions identified. 1. Header. Change location from H23 to H21 2. Clarification of Scope 3. Section 7 (i). Changed volumes to match cleaning procedure; 8L water and 800µL Sigmaclean 4. Section 7.1. (iv) Change of procedure for removing water. 5. Section 7.1.(vii) Add “Enter details on cleaning record “and note completion of maintenance on laboratory notice board” 6. Section 7.2 (iii) Bullet point 3. Changed “Planar system” to waterbath 7. Replaced Cleaning Record form with Preventative Maintenance Record form	2.0
2.0	23/02/2011 P.Hourd	Minor revision of scope and records section following transfer of equipment to the T208b Tissue Engineering Laboratory, located in the Wolfson School	3.0
3.0	23/08/12 K.Sikand	Revisions in layout to fit with lean SOP template. This SOP will be reviewed in 2 years in line with the lean SOP procedure.	4.0
4.0	17/07/18 J.ali	Merging of cleaning water baths to SOP Addition of locations of all water baths in CBE/wolfson	5.0
5.0	4th May 2020 by C.Kavanagh	Minor amendments only	5.0

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