



Standard Operating Procedure

Perkin Elmer Differential Scanning Calorimeter

Compiled By:	Rachel Rossau	Cross Checked By:	Nolene Byrne	Category:	EQUIPMENT
School:	Engineering	Campus:	Waurm Ponds	Location:	KE2.101
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Category Rating:	Specific Training Required				

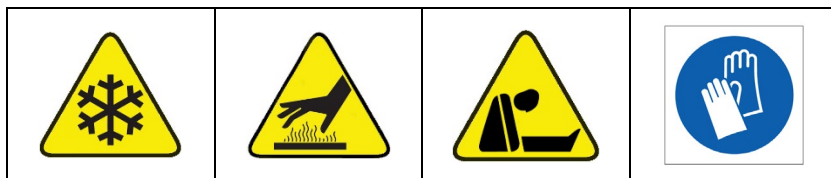
SCOPE & PURPOSE:

The purpose of this SOP is to show students, researchers and staff how to operate the DSC safely.

TRAINING REQUIREMENTS:

User will have completed a level 1 SEBE Online Lab Safety Training or Safety Training Induction Unit SEJ010/SEJ700 induction, and Level 2 materials labs inductions, and need to be trained by technical staff in a level 3 induction. Before using this equipment, required safety documentation must be completed and signed off by the technical staff and the user's supervisor.

POTENTIAL HAZARDS/HEALTH EFFECTS:



- Coming into contact with objects of hot & cold temperatures inside the furnace cell.
- Other hazards – toxic gas (nitrogen) vapour.

MANDATORY CONTROLS:

- ✓ Nitrile Gloves
- ✓ Training Provided
- ✓ First Aid Available
- ✓ Gas cylinder regulator
- ✓ Oxygen Sensor
- ✓ Project Safety Assessment
- ✓ SDS

Precaution Requirements:

DO NOT USE AFTERHOURS (OUTSIDE OF MON – FRI 8AM – 6PM) WITHOUT TECHNICIAN AUTHORISATION.

- Instrument is sensitive to contamination – do not touch instrument or handle samples or pans without wearing gloves.
- Nitrogen gas cylinder must be open when Portable Cooling Device (PCD) is running.
- Ensure the correct type of pan is being used for your sample.
- Do not overfill pans.
- Under no circumstances are the calibration settings or software interface to be changed without consultation of technical staff.

INSTRUCTIONS:

Booking Procedure: Must have a booking in the outlook calendar *G SEBE ENG Lab Eqpmt KE2.103 DSC even if free and available.

Operation:

- Turn on the Portable Cooling Device (PCD).
- Open the Nitrogen gas cylinder with the knob on the top - the low pressure (L.P) on the regulator should read 200kPa.
- Turn on instrument using switch at rear left.
- Turn on computer and login.
- Open Pyris Manager Software
- Click on the DSC4000 icon to connect the computer to the instrument so that it shows it is online and opens the software.
- Wait for the PCD to reach ~-80°C without fluctuation.
- Using gloves and forceps prepare and load a sample (on the left) and reference pan (on the right).



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- Open your method or create method in the editor.
- Run method.
- Save files.

After Use:

- Remove sample and reference pans.
- Exit Pyris Manager. This will disconnect the instrument from the computer so that the DSC4000 icon shows it is offline.
- Turn off the instrument using the switch at rear left.
- Shutdown the computer.
- Close the nitrogen gas cylinder.
- Turn off the PCD.
- Make sure working area is clean and tidy.

GENERAL CARE & MAINTENANCE:

Notify technical staff when level of nitrogen bottle is low.

Notify technical staff if any sample discharge into the furnace cell has occurred.

Do not operate without nitrogen gas or oxygen gas.

REPAIRS & CERTIFICATION/VALIDATION SCHEDULE:

Reporting faults/concerns of equipment procedure: Technical Staff.

Calibration is performed as required.

SPILLS/ ACCIDENT REPORTING PROCEDURE:

Report spills/incidents to: Technical staff.

In case of Emergency:

- Stop process immediately.
- Contact Technical Staff.
- If a serious injury has occurred call 000.
- Alert others if nearby.
- Evacuate to closest assembly area.