Standard Operating Procedure

Title: Calibration Procedure (Ice Point) for Thermometers and Thermocouples

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A APPLICATION

To provide an established procedure for use when performing temperature calibration on equipment to controlled standards at the GMP site.

This document covers preparation of the apparatus used and the method to be followed when performing an ice point calibration. It also covers the procedures to be followed when completing associated records.

This procedure is applicable to the calibration of the following:

- Thermometers
- Thermocouples

B RESPONSIBILITY AND AUTHORITY

***Person performing calibration*:**

- To calibrate appropriate equipment in compliance with this procedure.
- To complete and sign all forms needed as stated in the Procedure section of this document.
- To properly report/record any unusual conditions found during the calibration/certification procedure.

C SAFETY AND PROCESS SPECIFIC INFORMATION

All safety requirements for relevant areas must be followed at all times.

EQUIPMENT

The following equipment is required to perform an ice point calibration:

- Insulated container - such as a wide-mouthed flask or small Esky for storage of ice slurry bath
- Purified water (WFI or deionized) - for making the ice slurry bath
- Ice - made from purified water (WFI or deionized)
- Mallet/hammer – to break ice into small pieces if required
- Stirrer – to ensure an even mixture
- Suitable clamp and stand – for supporting the thermometers or thermocouples

D PROCEDURE

1 Background

1.1 Temperature reading devices can be calibrated using sophisticated calibration equipment such as a dry block calibrator, available from instrument suppliers. However, in most cases calibration in melting ice (0°C) for cold measurements is an effective method. The ice point is the equilibrium between a mixture of melting ice and air saturated water, and represents an easily reproduced reference point to check accuracy. An ice point is always included as part of the full calibration for all thermometers that have a 0 °C mark, and for thermocouples where a low reference point calibration is required.

2 Ice Point Calibration

