

# Australian Standard™

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## Cleanrooms, workstations, safety cabinets and pharmaceutical isolators—Methods of test

### Method 20: Determination of sound level at installed workstations, safety cabinets and pharmaceutical isolators

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**1 SCOPE** This Standard sets out the method for determining the sound levels experienced by operators working at workstations, safety cabinets and pharmaceutical isolators, and the noise contribution of the cabinet or isolator to the environmental sound level. The method identifies the sound from the device, the work environment, and combination of these factors.

**2 REFERENCED DOCUMENTS** The following documents are referred to in this Standard:

AS

1386 Cleanrooms and clean workstations

1386.1 Part 1: Principles of clean space control

1807 Cleanrooms, workstations, safety cabinets and pharmaceutical isolators—Methods of test

1807.0 Part 0: List of methods and apparatus

2107 Acoustics—Recommended design sound levels and reverberation times for building interiors

**3 DEFINITIONS** For the purpose of this Standard the definitions given in AS 1386.1 and AS 1807.0 apply.

**4 PRINCIPLE** Sound levels are measured at specified positions under operating conditions and also with cabinet or isolator turned off.

**5 APPARATUS** The following apparatus as specified in AS 1807.0 is required:

- (a) Sound level meter.
- (b) Acoustic calibrator.

**6 PROCEDURE** The procedure shall be as follows:

- (a) Select the point of measurement.

Measurements shall be made at user head level, at the user's normal work position(s) as identified by the user.

- (b) Ensure that the equipment is operating within specification with respect to airflow, containment, etc. All measurements shall be made using the meter on A-weighting and fast response.

- (c) Using the acoustic calibrator, check the performance of the sound level meter prior to making any measurements.
- (d) Determine the sound level under operating conditions (*operating sound level*) at the point of measurement (see Step (a)).

NOTE: Care should be exercised to avoid any undesirable influences on sound level readings due to the manner in which the meter is held by the test operator. It is recommended that the meter be extended to arm's length away from the body when measurements are being taken.

- (e) Shut down the cabinet or isolator under test and allow sufficient time for it to run down completely. Measure *ambient sound level* at the same measurement point as for operating sound level.
- (f) Check again the performance of the sound level meter using the acoustic calibrator.
- (g) Estimate the sound level due to the cabinet or isolator alone (*corrected sound level*) using the correction values given in AS 2107 for adjustments to plant or equipment sound level.

**7 REPORT** The following information shall be reported:

- (a) Operating sound level.
- (b) Ambient sound level.
- (c) Corrected sound level.
- (d) Room dimensions, layout, surface finishes, and any other factors which may have affected results.
- (e) Reference to this Australian Standard, i.e. AS 1807.20.