AS 2145—1985

Australian Standard®

HYPODERMIC EQUIPMENT — HYPODERMIC NEEDLE TUBING

This Australian standard was prepared by Committee MD/1, Hypodermic and Other Equipment for General Medical Use. It was approved on behalf of the Council of the Standards Association of Australia on 29 January 1985 and published on 12 July 1985.

The following interests are represented on Committee MD/1:

Australian Chamber of Commerce
Australian Dental Standards Laboratory
Australian Institute of Surgical and Dental Technicians
Australian Medical Association
Australian Medical Devices and Diagnostics Association
Confederation of Australian Industry
Department of Defence
Department of Veterans Affairs
Department of Health
Hospitals and Hospital Associations
Government Supply Department, N.S.W.
Pharmaceutical Association of Australia

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PREFACE

This edition of this standard was prepared by the Association's Committee on Hypodermic and Other Equipment for General Medical Use under the direction of the Medical Materials and Equipment Standards Board, to supersede AS 2145—1978, Sharpened Hypodermic Needle Tubing. It is one of a series of standards dealing with syringes and needles for general medical use.

In the preparation of this standard, account was taken of the following:

AS 1945 Reusable Hypodermic Needles for General Medical Use

ISO/R596 Hypodermic Needles

The standard specifies the properties of stainless steel hypodermic needle tubing 0.31 mm to 2.00 mm in nominal external diameter (30 SWG—14 SWG) for standard tubing and 0.45 mm to 2.00 mm in nominal external diameter (26 SWG—14 SWG) for thin-walled tubing with or without mounts for attachment to, or union with, syringes or other devices for medical (including insulin injection), dental, veterinary and other uses. The use of various nominal external diameters and wall thicknesses of needle tubing is also dealt with.

This standard applies only to the physical properties of the tubing itself. Specifications applicable to sharpened needle tubing are dealt with in AS 1946, Hypodermic Equipment — Single-use Needles (Sterile) for General Medical Use.

With the changeover from the old SWG designations of diameters to the new R 20 series, the nominal external diameters of 1.00 mm, 1.40 mm, 1.60 mm, 1.80 mm, 2.00 mm and 2.24 mm have had an asymmetric tolerance placed on them. This tolerance allows for both the old and new diameters to be accommodated until the needle tubing manufacturers change to the new diameters.

Certain facilities for testing for compliance with this standard are available at the Australian Dental Standards Laboratory, 240 Langridge Street, Abbotsford, Victoria, 3067.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
HYPODERMIC EQUIPMENT — HYPODERMIC NEEDLE TUBING

1 SCOPE. This standard specifies requirements for standard and thin-walled stainless steel needle tubing, ranging in size from 0.31 mm to 2.00 mm in nominal external diameter (30 SWG—14 SWG) for standard tubing and from 0.45 mm to 2.00 mm in nominal external diameter (26 SWG—14 SWG) for thin-walled tubing. The needle tubing is suitable for use in the manufacture of hypodermic needles or other hypodermic devices for medical, dental and veterinary use.

Although the tubing may be supplied mounted or unmounted, this standard does not include requirements for the mount.

NOTE: Advisory information on sampling and assessing for compliance with this standard is given in Appendix E.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1444 Wrought Alloy Steels — AISI-SAE Standard, Hardenability (H) and Stainless Series

AS 2338 Preferred Dimensions of Wrought Metal Products

3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

3.1 Cannula — a hollow piece of tubing.

3.2 Needle tube — a stainless steel cannula sharpened to a point at one end at least.

3.3 Mount — a component for the attachment or union of a needle tube to a syringe or other injection device.

3.4 Bore — the internal diameter of a needle tube.

3.5 Thin-walled tubing — tubing having a wall thickness of at least 30 percent less than the maximum wall thickness of standard tubing.

4 SAMPLE. The sample shall consist of at least 100 specimens of needle tubes.

5 SIZES AND DIMENSIONS. The nominal external diameter, bore and maximum wall thickness of the needle tubing shall conform to Table 1 when measured to the nearest 0.005 mm.

TABLE 1

SIZES AND DIMENSIONS

Nominal external diameter mm	Tolerance on nominal external diameter mm	Nearest SWG number	Minimum bore for standard tubing mm	Maximum wall thickness for thin–walled tubing mm
0.31	±0.02	30	0.10	—
0.36	±0.02	28	0.18	—
0.40	±0.02	27	0.20	—
0.45	±0.02	26	0.23	0.08
0.50	±0.03	25	0.23	0.11
0.56	±0.03	24	0.28	0.11
0.63	±0.03	23	0.32	0.14
0.71	±0.04	22	0.39	0.14
0.80	±0.04	21	0.48	0.14
0.90	±0.04	20	0.56	0.14
1.00	+0.15 –0.05	19	0.65	0.16
1.25	±0.05	18	0.77	0.19
1.40	+0.07 –0.05	17	0.93	0.19
1.60	+0.08 –0.05	16	1.05	0.22
1.80	+0.08 –0.05	15	1.22	0.23
2.00	+0.15 –0.05	14	1.46	0.24

NOTES:

1. Values for nominal external diameters correspond to the R 20 series in AS 2338, except 0.31 which appears as 0.315 in AS 2338.
2. The minimum bore values for standard tubing reflect those which have been available in Australia for over 10 years and which have been found to be satisfactory.
3. The bore of the needle is measured at its point using an optical method. Other methods such as mandrel gauges may also be used as a convenient check method. It is assumed that the bore is uniform along the length of the needle.