

ISO 20749:2023-06 (E)

Dentistry - Pre-capsulated dental amalgam

Contents		Page
Foreword		v
Introduction		vii
1 Scope		1
2 Normative references		1
3 Terms and definitions		2
4 Requirements		3
4.1 Package and capsule contamination.....		3
4.2 Chemical composition and purity of the dental amalgam alloy.....		3
4.3 Large particles in the dental amalgam alloy powder.....		3
4.4 Loss of mass from the capsule during mixing.....		3
4.5 Yield of dental amalgam from the capsule.....		3
4.6 Consistency of the dental amalgam from capsule to capsule.....		4
4.7 Properties of the dental amalgam.....		4
4.7.1 General.....		4
4.7.2 Creep.....		4
4.7.3 Dimensional changes during hardening.....		4
4.7.4 Compressive fracture stress at 2 h.....		4
4.7.5 Compressive fracture stress at 24 h.....		4
4.8 Appearance of mixed dental amalgam before setting.....		5
4.9 Corrosion resistance of the dental amalgam.....		5
4.10 Length tolerance for the capsule.....		5
5 Sampling		5
6 Test methods		5
6.1 Package and capsule contamination.....		5
6.1.1 Principle.....		5
6.1.2 Test sample.....		5
6.1.3 Apparatus.....		5
6.1.4 Procedure.....		5
6.1.5 Treatment of the results.....		6
6.1.6 Report.....		6
6.2 Chemical composition and purity of the dental amalgam alloy.....		6
6.2.1 Principle.....		6
6.2.2 Test sample.....		6
6.2.3 Apparatus.....		6
6.2.4 Procedure.....		7
6.2.5 Treatment of the results.....		7
6.2.6 Report.....		7
6.3 Large particles in the dental amalgam alloy powder.....		8
6.3.1 Principle.....		8
6.3.2 Test sample.....		8
6.3.3 Apparatus.....		8
6.3.4 Procedure.....		8
6.3.5 Treatment of the results.....		8
6.3.6 Report.....		8
6.4 Loss of mass from the capsule during mixing.....		9
6.4.1 Principle.....		9
6.4.2 Test sample.....		9
6.4.3 Apparatus.....		9

6.4.4	Test procedure.....	9
6.4.5	Treatment of the results.....	10
6.4.6	Report.....	10
6.5	Yield of amalgam from the capsule.....	11
6.5.1	Principle.....	11
6.5.2	Test sample.....	11
6.5.3	Apparatus.....	11
6.5.4	Test procedure.....	11
6.5.5	Treatment of the results.....	12
6.5.6	Report.....	12
6.6	Consistency of the dental amalgam from capsule to capsule.....	13
6.6.1	Principle.....	13
6.6.2	Test sample.....	13
6.6.3	Apparatus.....	13
6.6.4	Test piece production.....	14
6.6.5	Procedure.....	14
6.6.6	Microhardness measurement.....	15
6.6.7	Treatment of the results.....	15
6.6.8	Report.....	16
6.7	Properties of the dental amalgam.....	16
6.7.1	Principle.....	16
6.7.2	Mould for the preparation of test pieces for determining creep, dimensional change during hardening and compressive fracture stress.....	16
6.7.3	Test sample.....	21
6.7.4	Test piece production.....	21
6.7.5	Procedure for the determination of creep.....	23
6.7.6	Procedure for the determination of dimensional change during hardening.....	24
6.7.7	Procedure for the determination of compressive fracture stress.....	26
6.8	Appearance of the mixed dental amalgam before setting.....	28
6.8.1	Principle.....	28
6.8.2	Apparatus.....	28
6.8.3	Procedure.....	28
6.8.4	Treatment of the results.....	29
6.8.5	Report.....	29
6.9	Corrosion resistance of the dental amalgam.....	29
6.9.1	Principle.....	29
6.9.2	Test sample.....	29
6.9.3	Procedure.....	30
6.9.4	Treatment of results.....	30
6.9.5	Report.....	30
6.10	Length tolerance for the capsule.....	31
6.10.1	Principle.....	31
6.10.2	Test sample.....	31
6.10.3	Apparatus.....	31
6.10.4	Procedure.....	31
6.10.5	Treatment of results.....	31
6.10.6	Report.....	31
7	Test report.....	32
8	Marking and labelling.....	32
8.1	Information.....	32
8.2	Labelling of the package for dental mercury.....	33
8.3	Labelling of the outer surface of package or container used for shipping.....	33
8.4	Instructions for use.....	34
8.5	Precautionary notes.....	34
	Bibliography.....	35