

This is a preview of "ISO 11143:2008". [Click here to purchase the full version from the ANSI store.](#)

Second edition  
2008-07-01

---

---

## Dentistry — Amalgam separators

*Art dentaire — Séparateurs d'amalgame*



Reference number  
ISO 11143:2008(E)

© ISO 2008

This is a preview of "ISO 11143:2008". [Click here to purchase the full version from the ANSI store.](#)

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 11143:2008". [Click here to purchase the full version from the ANSI store.](#)

## Contents

Page

Foreword.....	v
Introduction .....	vi
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions.....	1
4 Classification.....	2
5 Requirements .....	3
5.1 Efficiency .....	3
5.2 Warning system for collecting container .....	3
5.3 Alarm system for collecting container .....	3
5.4 Alarm system for malfunction of amalgam separator .....	3
5.5 Removal of removable filled collecting container.....	3
5.6 Maximum fillable volume of the removable collecting container .....	4
5.7 Electrical safety.....	4
6 Sampling.....	4
7 Test apparatus .....	4
7.1 Set-up of test apparatus.....	4
7.2 Installation of amalgam separator .....	5
8 Test sample .....	7
8.1 Preparation of test sample.....	7
8.2 Particle fraction sizes .....	7
8.3 Mass of dry test sample .....	7
8.4 Particle fraction size distribution .....	7
8.5 Preparation of test slurry .....	9
8.5.1 Reagents .....	9
8.5.2 Apparatus .....	9
8.5.3 Procedure .....	9
9 Test method.....	10
9.1 General.....	10
9.2 Preconditioning.....	10
9.3 Efficiency test.....	10
9.4 Number of tests.....	13
9.5 Calculation of efficiency .....	13
9.6 Determination of efficiency.....	14
9.7 Test of warning system for removable collecting container.....	14
9.8 Test of alarm system for removable collecting container.....	14
9.9 Test of alarm system for malfunction of amalgam separator .....	14
9.10 Removal of filled collecting container .....	14
9.11 Maximum fillable volume of the removable collecting container .....	14
9.12 Electrical safety.....	14
10 Test report .....	15
11 Manufacturer's instructions for installation, use, maintenance and service .....	16
12 Marking .....	16
12.1 General.....	16
12.2 Marking of amalgam separator.....	17
12.3 Marking of liquid inlet and outlet of the amalgam separator .....	17

This is a preview of "ISO 11143:2008". [Click here to purchase the full version from the ANSI store.](#)

<b>12.4</b>	<b>Marking of removable collecting container</b> .....	<b>17</b>
<b>Annex A</b>	<b>(informative) Preparation of amalgam test sample</b> .....	<b>18</b>
<b>Annex B</b>	<b>(informative) Procedure for grinding the hardened amalgam</b> .....	<b>21</b>
<b>Annex C</b>	<b>(informative) Examination of particle fraction 3 using sedimentation with X-ray absorption</b> .....	<b>22</b>
<b>Annex D</b>	<b>(informative) Particle fraction size distribution of amalgam in dental waste water</b> .....	<b>24</b>
<b>Bibliography</b>	.....	<b>25</b>

This is a preview of "ISO 11143:2008". [Click here to purchase the full version from the ANSI store.](#)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11143 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 6, *Dental equipment*.

This second edition cancels and replaces the first edition (ISO 11143:1999) which has been technically revised by means of the following changes:

- a) the description of the test method has been improved;
- b) testing at a minimum flow rate for certain types of separator is now required;
- c) updated labelling requirement has been introduced.

## Introduction

Amalgam separators are items of dental equipment designed to retain amalgam particles carried by the waste water from the dental treatment centre, so as to reduce the number of amalgam particles and therefore the mass of amalgam entering the sewage system.

Separation of the amalgam particles may be effected by the use of a centrifuge, sedimentation, filtration, or a combination of any of these methods.

It is recognised that the test sample used to assess the efficiency of an amalgam separator should have a particle size distribution which reflects the actual situation in dental treatment centres. The test sample used in this International Standard is based on investigations that have been carried out to determine the particle size distribution of amalgam particles in waste water from dental treatment centres (see Annex D).

The principle of the test is that the effluent water from the amalgam separator is collected in a vessel. The collected effluent water, containing amalgam particles not retained by the amalgam separator, is filtered through a series of preweighed filters. The filters, with the amalgam particles collected on them, are dried to a constant weight in a desiccator at room temperature and the total mass of collected particles is measured to determine the collection efficiency.