

ISO/TS 17988:2014-04 (E)

Dentistry - Corrosion test methods for dental amalgam

| Contents | | Page |
|--------------------|--|-------------|
| Foreword | | iv |
| Introduction | | v |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | Sampling | 2 |
| 5 | Preparation of dental amalgam test-pieces | 3 |
| 5.1 | General | 3 |
| 5.2 | Cylindrical test-pieces for use in the immersion and potentiostatic corrosion test procedures | 3 |
| 5.3 | Disc-shaped test-pieces for use in the Hertzian-loading strength-reduction test | 7 |
| 6 | Determination of the resistance to corrosion by the immersion procedure | 9 |
| 6.1 | Apparatus | 9 |
| 6.2 | Mercury vapour analyser requirements | 11 |
| 6.3 | Reagents for the test solution and cleaning the apparatus | 11 |
| 6.4 | Cleaning the glassware | 11 |
| 6.5 | Assembly of the immersion corrosion test apparatus | 11 |
| 6.6 | Test-piece production | 12 |
| 6.7 | Preparation of the 0,1 mol/l lactic acid solution | 12 |
| 6.8 | Finishing the dental amalgam test-piece | 12 |
| 6.9 | Test procedure | 13 |
| 6.10 | Analysis | 14 |
| 6.11 | Treatment of data and reporting of results | 15 |
| 7 | Determination of the corrosion by the potentiostatic procedure | 15 |
| 7.1 | Test-piece preparation | 15 |
| 7.2 | Corrosion test cell requirements | 16 |
| 7.3 | Reference electrode probe requirements | 16 |
| 7.4 | Potentiostat requirements | 17 |
| 7.5 | Reagents | 17 |
| 7.6 | Preparation of the electrolyte | 17 |
| 7.7 | Test procedure | 17 |
| 7.8 | Data acquisition and processing | 17 |
| 7.9 | Calculation of the total charge transported | 18 |
| 7.10 | Reporting of results | 18 |
| 8 | Determination of the resistance to corrosion by the Hertzian-loading strength- reduction procedure | 18 |
| 8.1 | Reagents | 18 |
| 8.2 | Stock solutions | 19 |
| 8.3 | Test solution (artificial saliva) | 19 |
| 8.4 | Test procedure | 20 |
| 8.5 | Treatment of data and reporting of results | 21 |
| Bibliography | | 23 |