



American National Standard/
American Dental Association
Standard No. 80

Dental Materials — Determination of Color Stability

Identical adoption of ISO 7491:2000, *Dental Materials — Determination of Color Stability*

ADA American
Dental
Association®
Council on
Scientific Affairs

**AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 80 FOR
DENTAL MATERIALS—DETERMINATION OF COLOR STABILITY**

The Council on Scientific Affairs of the American Dental Association has approved revised American Dental Association Standard No. 80 for Dental Materials—Determination of Color Stability. This and other standards for dental materials, instruments and equipment are being formulated by working groups of the ADA Standards Committee on Dental Products (formerly Accredited Standards Committee MD156 for Dental Materials, Instruments and Equipment). The committee has representation from all interests in the United States in the standardization of materials, instruments and equipment in dentistry. The Council has adopted the standards, showing professional recognition of their usefulness in dentistry, and has forwarded them to the American National Standards Institute with a recommendation that the standards be approved as American National Standards. The American National Standards Institute granted approval of ADA Standard No. 80 as an American National Standard on May 11, 2001. This standard becomes effective May 11, 2002.

The Council thanks the working group members and the organizations with which they were affiliated at the time the standard was developed:

Wayne Wozniak (Chairman), American Dental Association, Chicago, IL; Joseph Dennison, University of Michigan, Ann Arbor, MI; P.L. Fan, American Dental Association, Chicago, IL; John Moser, Riverside, IL; Don McKenzie, 3M Dental Products, St. Paul, MN; and George Cowperthwaite, Esschem Co., Essington, PA.

**AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 80 FOR DENTAL
MATERIALS—DETERMINATION OF COLOR STABILITY**

FOREWORD

(This foreword does not form a part of ANSI/ADA Standard No. 80, Dental Materials—Determination of Color Stability.)

This revision is an adoption of ISO 7491, Dental Materials—Determination of Color Stability with minor editorial changes. The ADA/SCDP Working Group examined the standard and found it acceptable for adoption as ANSI/ADA Standard No. 80. This is a revision of ANSI/ADA Standard No. 80 for Color Stability Test Procedure – 1989.

INTRODUCTION

Color stability is an important characteristic of dental materials, and it is expected that the test methods outlined in this standard will be referred to in other standards related to such materials.

**AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 80
FOR DENTAL MATERIALS—DETERMINATION OF COLOR STABILITY**

1. SCOPE

This standard specifies a procedure for determining the color stability of dental materials after exposure to light or water.

2. NORMATIVE REFERENCES

The following normative documents contain provisions that, through reference in this text, constitute provisions of this specification. For dated references, subsequent amendments or revisions do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3696 Water for Analytical Laboratory Use—Specification and Test Methods

ISO 4892-2 Plastics - Methods of Exposure to Laboratory Light Sources—Part 2: Xenon-Arc Sources

(ISO Standards are available from the American National Standards Institute, 25 West 43rd St., New York, NY 10035).

CIE Publication 15.2 Colorimetry

(CIE Publications are available from Commission Internationale de L'eclairage [International Commission on Illumination], CIE Central Bureau, Kegelgasse 27 A-1030, Wien, Austria)

3. TEST METHODS

3.1 Apparatus

3.1.1 Radiation source

Xenon medium-pressure lamp with a color temperature of 5 000 K to 10 000 K and with an illuminance at the specimen of 150 000 lx. Any deviation of the illuminance from the mean value at any given moment shall not exceed $\pm 10\%$ over the entire area occupied by the test specimen, measured in accordance with ISO 4892-2.

Other radiation sources of performance equivalent to the xenon lamp are also suitable.

The xenon lamp and the ultraviolet filter (Clause 3.1.2) should normally be replaced after 1500 h use because of the change in radiation intensity due to aging. The illuminance should be measured with a suitable illumination meter, and the illuminance adjusted accordingly.

3.1.2 Ultraviolet filter

An ultraviolet filter of borosilicate glass with transmittance of less than 1 % below 300 nm and