

Tentative Recommended Practice for

ACCELERATED WEATHERING OF PLASTICS USING S-1 BULB AND FOG CHAMBER¹



A.S.T.M. Designation: D 795 - 44 T

ISSUED, 1944.²

This Tentative Recommended Practice has been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

Scope

1. (a) This recommended practice is intended to define conditions for the exposure of plastic materials to artificial sunlight and fog.

NOTE.—Some correlation has been observed between the changes in certain physical properties of certain plastics resulting from exposure to the conditions of this recommended practice and those resulting from a much longer exposure out-of-doors in Washington, D. C., but no general assumptions as to the existence or the extent of such correlation should be made.

(b) This recommended practice is limited to the method of obtaining the exposure conditions, the type of sample, and the procedure to be followed, and does not cover methods of test to be used in evaluating the effects of the exposure.

Apparatus

2. The apparatus shall consist of the following:

(a) *Lamp*.—A General Electric sunlamp, model BM-12, or an equivalent lamp, equipped with an oxidized alu-

minum reflector approximately 15 in. in diameter at the lower rim, and an S-1 bulb which has been in use at least 50 and less than 550 hr. The S-1 bulb consists of a combination tungsten filament-mercury arc enclosed in Corex D glass which absorbs most of the ultraviolet radiation below 2800 Å (Note 1). The bulb is rated at 400 w. The operating voltage shall be maintained at 110 ± 2 v. (Note 2).

NOTE 1.—To measure the ultraviolet light output of the S-1 bulb, the uranyl-oxalate actinometer may be used. This method is described in the Tentative Method of Calibrating a Light Source Used for Accelerating the Deterioration of Rubber (A.S.T.M. Designation: D 749).³ As no minimum value for the ultraviolet output has been established, actinometer data are useful only for comparisons between lamps.

NOTE 2.—To control voltage within the limits specified, an automatic voltage stabilizer, such as General Electric stabilizer, Catalog No. 68G158, may be used.

(b) *Disk*.—A phonograph turntable, operating at approximately 33 rpm., on which shall be mounted a light-colored corrosion-resistant metal disk approxi-

¹ Under the standardization procedure of the Society, this recommended practice is under the jurisdiction of the A.S.T.M. Committee D-20 on Plastics.

² Accepted by the Society at annual meeting, June, 1944.

³ Appears in this publication, see Contents in Numeric Sequence of A.S.T.M. Designations at front of book.