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UL 94 HB (2013), STANDARD FOR TESTS FOR FLAMMABILITY OF PLASTIC MATERIALS – HORIZONTAL BURNING MATERIAL TEST

MATERIAL ID.: T10/CLEAR
TRADE NAME: NEWMAT USA

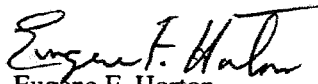
FINAL REPORT
Consisting of 4 Pages

SwRI® Project No.: 01.17791.04.038a
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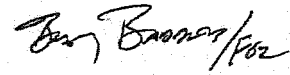
Prepared for:

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INTRODUCTION

This report presents the results of a specimen submitted by Newmat USA Ltd., located in West Babylon, NY, and tested at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas. The test was conducted in accordance with the procedures outlined in UL 94 HB (2013), *Standard for Tests for Flammability of Plastic Materials – Horizontal Burning Material Test*.

This method is intended for use in determining the flammability of plastic materials used for parts in devices and appliances. It is designated primarily for plastic materials, but may be utilized in other applications as specified in applicable procurement documents. The results of this test do not necessarily indicate whether the material tested will resist the propagation of flame under severe exposure or when used in a manner that differs substantially from the test conditions.

Three specimens are conditioned for at least 48 h at 23 ± 3 °C at $50 \pm 5\%$ relative humidity prior to testing. Each specimen is marked with two lines, 25 and 100 mm from one end of the specimen. The specimen is clamped at the end farthest from the 25-mm mark, with its longitudinal axis horizontal and its transverse axis inclined 45 ± 2 degrees. The mounted specimen is tested in a draft-free cabinet and the 25-mm Bunsen burner methane/air blue flame is applied at a 45-degree angle to the front edge of the specimen to a depth of approximately 6 mm for 30 s or until the specimen ignites and has burned to the 25-mm mark, whichever occurs first. The flame is then withdrawn away from the specimen and the rate of burning from the 25-mm mark to the 100-mm (4.0-in.) mark is determined.

CLASSIFICATION CRITERIA

A material classed 94HB shall:

- A. Not have any specimens with a burning rate exceeding 40 mm per minute over a 75-mm span for specimens having a thickness of 3 to 13 mm, **or**
- B. Not have a burning rate exceeding 75-mm per minute over a 75-mm span for specimens having a thickness less than 3 mm, **or**
- C. Cease to burn before the 100 mm reference mark.

A material classified HB in the 3 ± 0.2 -mm thicknesses shall automatically be classed HB down to a 1.5-mm minimum thickness without additional testing. A material not exceeding the 75-mm/min burning rate tested at any thickness less than 3 mm is to be classed HB at the thickness tested (the minimum thickness) and up to a maximum of 2.99 mm without testing additional specimens within this range.

If only one specimen from a set of three specimens does not comply with the requirements, another set of three specimens is to be tested. All specimens from this second set shall comply with the requirements in order for the material in that thickness to be classified HB.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

UL 94 HB (2013) TEST REPORT

MATERIAL DESCRIPTION

Date Received: September 24, 2013
Material ID.: *T10/Clear*
Trade Name: *Newmat USA*
Description: Thin, clear PVC membrane
Color: Clear
Thickness: 0.18 mm (*0.16 mm) nominal
Received Weight:* 2.20 g (nominal)

* Measured by SwRI personnel

PREPARATION AND CONDITIONING

Preparation: Twenty-one specimens were prepared according to standard UL 94 HB requirements.
Conditioning Time: The specimens were conditioned at least 48 h at 23 ± 3 °C at $50 \pm 5\%$ relative humidity prior to testing.

TEST RESULTS

Number of Runs: 3

Run No.	After Flame (s)	After Glow (s)	Cotton Ignition	Elapsed Time between 25 mm and 100 mm Marks (sec) (t)	Burn Distance (mm)	Burning Rate (mm/min) $60 \times (L/t)$
1	None	No	No	NA	0	0
2	None	No	No	NA	0	0
3	None	No	No	NA	0	0

CONCLUSIONS

Based on the test results, the specimen identified as *T10/Clear* meets the specified criteria for UL 94 HB.