

SOUTHWEST RESEARCH INSTITUTE

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ASTM D1929-91a (U.B.C 26-6)
"STANDARD TEST METHOD FOR
IGNITION PROPERTIES OF
PLASTICS"

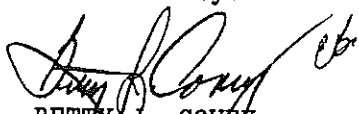
TEST REPORT

SwRI PROJECT NO: 01-8361-038

MATERIAL ID: ALPOLIC

TEST DATE: OCTOBER 23, 1996
REPORT DATE: OCTOBER 28, 1996

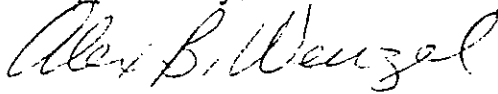
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INTRODUCTION

This report presents the results of an ASTM D1929 test on a specimen submitted by the Client. The test is conducted in accordance with the procedure outlined in "Standard Test Method for Ignition Properties of Plastics (ASTM D1929-91a)." This test method is similar to that described in the Uniform Building Code (U.B.C.) Standard 26-6.

ASTM D1929 is a laboratory test procedure for the determination of self-ignition and flash-ignition temperatures of plastics using a hot-air ignition furnace. The test method defines self-ignition temperature as "the lowest initial temperature of air passing around the specimen at which, in the absence of an ignition source, the self-heating properties of the specimen lead to ignition or ignition occurs of itself, as indicated by an explosion, flame, or sustained glow." Flash-ignition temperature is defined as "the lowest initial temperature of air passing around the specimen at which a sufficient amount of combustible gas is evolved to be ignited by a small external pilot flame."

Thermoplastic materials may be tested in pelletform normally supplied for molding. Where only sheet samples are available for thermosetting materials, 0.75 x 0.75 in. squares of the available sheet or film shall be bound together with fine wire. A specimen weight of 3 ± 0.5 grams is required. Sometimes, due to the low density of the product, the required specimen weight of 3.0 ± 0.5 grams is not achieved, and the maximum allowable specimen size is tested. In this event, the average weight of the specimens tested is reported.

The test specimens are conditioned at $73.4 \pm 3.6^{\circ}\text{F}$ ($23 \pm 2^{\circ}\text{C}$) and 50% relative humidity for not less than 40 hours prior to test. The test material is inserted in the 3 in. (76 mm) diameter, electrically-heated ceramic furnace having an air movement of 5 ft/min. Observations are made for flaming, sustained glowing and/or explosions as the temperature is raised or lowered inside the furnace to determine the minimum self-ignition temperature. Minimum flash-ignition temperature is determined exactly as above except that a small pilot flame, located at the top opening of the furnace, is used to ignite combustible gases. The test is continued until the temperature at which there is no ignition during 13 minutes is reached.

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.

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

ASTM D1929-91a (U.B.C. 52-3) TEST REPORT

CLIENT: MITSUBISHI CHEMICAL AMERICA, INC.
SWRI PROJECT NO: 01-8361-038

MATERIAL DESCRIPTION

Trade Name:* Alpolic
Description:* Aluminum composite material-FR core
Color: White
Thickness:* 4 mm

* From Client's description

The test was witnessed by Ms. Sarah Houston, of Southwest Research Institute's, Listing and Labeling Program.

TEST SPECIMEN

Each specimen (material received August 14, 1996) was prepared by wiring two pieces together. A metal cup was placed under the specimen to catch residue in order to obtain a final weight.

TEST RESULTS

Date of Test: October 23, 1996
Conditioning: 14 days at 70°F and 50% relative humidity

The air velocity was kept at 5 ft/min. throughout the test and was not considered critical to the results. All results are accurate to $\pm 10^{\circ}\text{C}$.

Self-ignition temperature: 447 °C (837 °F)
Flash-ignition temperature: 433 °C (811 °F)