TEST REPORT

REPORT NUMBER: 102628407MID-001
ORIGINAL ISSUE DATE: June 27, 2016
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LIMS #116301

EVALUATION CENTER
Intertek
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Middleton, WI 53562

RENDERED TO
Polymer Resources, LTD
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PRODUCT EVALUATED: PC/ ASA GP2 7858
EVALUATION PROPERTY: ASTM D1929-16 “Standard Test Method for Determining Ignition Properties of Plastics.”

Report of Testing of PC/ ASA GP2 7858 for compliance with the applicable requirements of the following criteria: ASTM D1929-16 “Standard Test Method for Determining Ignition Properties of Plastics.”

1 Table of Contents

2 Introduction

Intertek has conducted testing for Polymer Resources, LTD on PC/ ASA GP2 7858 to evaluate the laboratory determination of the spontaneous-ignition temperatures and flash-ignition temperatures of plastics using a hot air furnace. Testing was conducted in accordance with ASTM D1929-16, Standard Test Method for Determining Ignition Temperature of Plastics. This evaluation began June 14, 2016 and was completed June 14, 2016.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were received at the Evaluation Center on June 2, 2016 in good condition.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Sample Name: PC/ ASA GP2 7858

Sample Description: Polycarbonate (PC) and a Styrene Acrylonitrile Acrylic (ASA) Terpolymer

The test samples were conditioned for a minimum of 40 hours at 23 ± 2°C and 50 ± 5% relative humidity prior to testing.

4 Testing and Evaluation Methods

4.1 TEST STANDARD

4.1.1 Flash Ignition Temperature (FIT):

Air velocity was set to 25 mm/s using the required formula, at the furnace temperature, by adjusting the actual air flow rate through the full section of the inner tube. The air flow rate was maintained at ± 10% of the calculated value. Using a variable transformer and automatic controller, the electric current to the heating coil was adjusted until the air temperature remained constant at the initial test temperature.

The specimen was placed on the specimen pan at the cover opening and then lowered to the pan into the furnace with the thermocouples placed in their correct positions. The timer was started, the pilot flame ignited and observation began looking for evidence of a flash or mild explosion of the combustible gases. Watching the temperatures for a rapid rise is also done as that can be a sign of flaming or glowing combustion. After ten minutes, depending on whether ignition has or has not occurred, the temperature was lowered or raised by 50°C and the test is repeated with a fresh test specimen.

After the range was determined within which the flash ignition temperature lies, the test was started at 10°C below the highest temperature within the range and continued by dropping the temperature consistently in 10°C increments until the temperature is reached and there was no ignition during a ten minute time period. The lowest air temperature at which a flash was observed during the ten minute period is the flash ignition temperature.

4.1.1 Spontaneous Ignition Temperature (SIT):

The spontaneous-ignition temperature is also called the self-ignition temperature. he ASTM D 1929 standard (section 3.2.3.) defines both terms (spontaneous-ignition and self-ignition) the same way.

Air velocity was set to 25 mm/s using the required formula, at the furnace temperature, by adjusting the actual air flow rate through the full section of the inner tube. The air flow rate was maintained at ± 10% of the calculated value. Using a variable transformer and automatic controller, the electric current to the heating coil was adjusted until the air temperature remained constant at the initial test temperature.

The specimen was placed on the specimen pan at the cover opening and then lowered to the pan into the furnace with the thermocouples placed in their correct positions. The timer was started and observation began looking for evidence of a flash or mild explosion of the combustible gases. After ten minutes, depending on whether ignition has or has not occurred, the temperature was lowered or raised by 50°C and the test was repeated with a fresh test specimen.

After the range was determined within which the flash ignition temperature lies, the test was started at 10°C below the highest temperature within the range and continued by dropping the temperature consistently in 10°C increments until the temperature is reached and there was no ignition during a ten minute time period. Flaming or glowing combustion of the test specimen is evidence of ignition. When difficult to visually detect, it can also be detected with a rapid rise in temperature. The spontaneous ignition temperature is the lowest air temperature at which the specimen burns during the 10 minute period.

4.1. RESULTS AND OBSERVATIONS

"These test results relate only to the behavior of test specimens under the particular conditions of the test. They are not intended to be used, and shall not be used, to assess the potential fire hazards of a material in use."

Results Summary:

Sample Name	Average Mass (g)	Flash Ignition Temperature (°C)	Spontaneous Ignition Temperature (°C)
PC/ ASA GP2 7858	3.00	455	504

Observations: Small explosion with black smoke was observed after samples ignited.

5 Conclusion

Intertek has conducted testing for Polymer Resources, LTD on PC/ ASA GP2 7858 to evaluate the laboratory determination of the spontaneous-ignition temperatures and flash-ignition temperatures of plastics using a hot air furnace. Testing was conducted in accordance with ASTM D1929-16, Standard Test Method for Determining Ignition Temperature of Plastics.

There are no pass or fail criteria for ASTM D1929 standard.

Sample Name	Average Mass (g)	Flash Ignition Temperature (°C)	Spontaneous Ignition Temperature (°C)
PC/ ASA GP2 7858	3.00	455	504

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK

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6 Revision Summary

DATE	SUMMARY
June 13, 2016	Original date of report