

Exova
2395 Speakman Dr.
Mississauga
Ontario
Canada
L5K 1B3

T: +1 (905) 822-4111
F: +1 (905) 823-1446
E: sales@exova.com
W: www.exova.com



Testing. Advising. Assuring.

ELECTRONIC DRAFT COPY

**ASTM D 635-10 Horizontal Burning Rate Determination
of ".060" Palsun Polycarbonate"**

A Report To:	Palram Americas 9735 Commerce Circle Kutztown, PA 19530 USA
Phone:	(800) 999-9459
Email:	Mark.Weaver@palram.com
Attention:	Mark Weaver
Submitted by:	Fire Testing
Report No.	11-002-545(A) 3 pages
Date:	August 16, 2011

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine rate of burning and/or extent and time of burning of plastics in a horizontal position according to ASTM D 635-10, as per your Purchase Order No. 4900043690 dated July 29, 2011.

IDENTIFICATION

Material identified as polycarbonate sheet: ".060" Palsun polycarbonate"

(Exova sample identification number 11-002-S0545)

SUMMARY OF TEST PROCEDURE

Specimens are conditioned for at least 48 hours at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ relative humidity prior to testing.

At least ten specimens, 125 x 12.5 mm, are each marked at 25 mm and 100 mm from one end. Each specimen is clamped horizontally at the end nearest the 100 mm mark, with its transverse axis inclined at $45 \pm 2^\circ$ to the horizontal. A 100 mm square wire gauze screen is clamped in a horizontal position, 10 mm below the edge of the specimen, with approximately 13 mm of the specimen extending beyond its edge.

A 20 mm high blue flame from a burner is applied to the end of the specimen for a period of 30 seconds, or whenever the flame front reaches the 25 mm mark, whichever comes first. The times to reach the 25 mm mark and the 100 mm mark, or when burning ceases are recorded, and the extent of burning measured. Repeat the test procedure until three specimens have burned to 100 mm ref mark, or ten have been tested. The behavior of specimens shall be classified as HB (HB = Horizontal Burning) if:

- There are no visible signs of combustion after the ignition source is removed, or
- The flame front does not pass the 25 mm reference mark, or
- The flame front passes the 25 mm reference mark but does not reach the 100 mm reference mark, or
- The flame front reaches the 100 mm reference mark and the linear burning rate does not exceed 40 mm/min for specimens having a thickness between 3 and 13 mm or 75 mm/min for specimens having a thickness less than 3 mm.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazards or fire risk assessment of materials, products, or assemblies under actual fire conditions.

TEST RESULTS**ASTM D 635-10**Standard Test Method for Rate of Burning and/or Extent
and Time of Burning of Plastics in a Horizontal Position

Measured Material Thickness: 1.51 mm

Nominal Density: 1.1 g/cm³

	Time of Burning (s)	Extent of Burning (mm)	Linear Burn Rate (mm/min.)	Continued Burning of Specimens (Yes/No?)	Flame Reached 25 mm Mark (Yes/No?)	Flame Reached 100 mm Mark (Yes/No?)
1:	101.7	9	-	Yes	Yes	No
2:	264.1	75	17.0	Yes	Yes	Yes
3:	179.3	75	25.1	Yes	Yes	Yes
4:	198.5	<u>75</u>	<u>22.7</u>	Yes	Yes	Yes
	Average:		21.6			

Note: Material reignited by burning parts on the wire gauze.

CONCLUSIONS

When tested at measured thickness of 1.51 mm, the material identified in this report meets the requirements to be classified HB.

According to Section X2 of ASTM D 635-10, the material identified in this report also qualifies as Class CC1, according to the International Building Code (IBC - 2003 Edition), Section 2606.4 for Light Transmitting Plastics (..."plastics that have a burning extent of 1 in. [25 mm]/min or less...").

Note: This is an electronic copy of the report. Signatures are on file with the original report.

Victor Tarcenco
Fire Testing.

Ian Smith
Fire Testing.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.