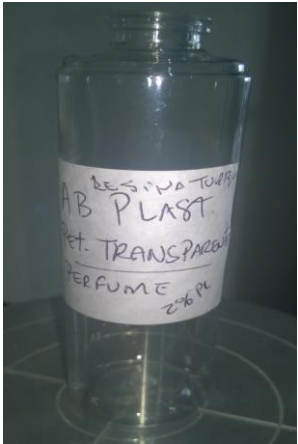


ANALYSIS REPORT

<u>General information</u>	
Date: February 16, 2015.	
Analysis number:	Q-120115F85
Client:	Ecoventur
Analysis period:	12-01-2015/14-02-2015
Test Description:	Accelerated Photodegradation
<u>I.- Sample Description:</u>	
<p>M1. Bottle for Perfume Bottles manufactured for testing in the company: AB PLAST Test to Client: Natura Cosmetics PET Transparent New formulation - 2%</p>	
<u>II.- Objective:</u>	
<p>Accelerated Degradation based on temperature of the structure and determination of its shelf life time. According to; "Tensile Test" ASTM D3826-98, "Standard Practice for Exposure of Photodegradable Plastics" ASTM D5208.</p>	
<u>III.- Laboratory equipment:</u>	
<ul style="list-style-type: none"> a. Universal Testing Machine. b. QUV accelerated weathering tester. Cycle: Continues of UV at 50°C and 0.70 W/m2. 	

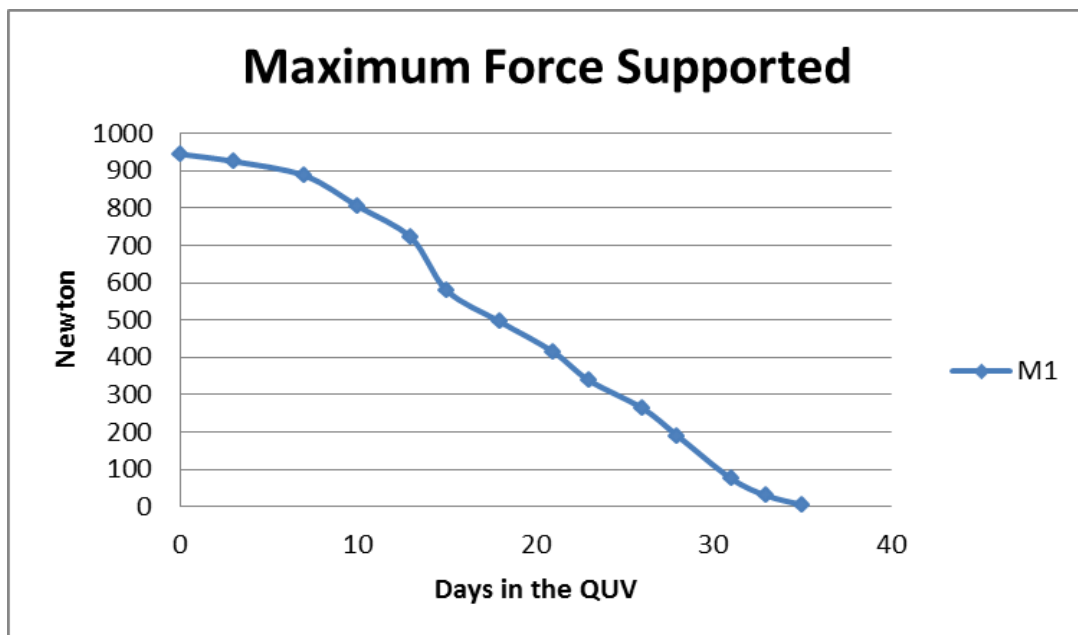
IV.- Results:

MECHANICAL PROPERTIES

For this study we decided to analyze the results of the maximum force supported.





Days in the oven	Maximum Force Supported (Newton)
	M1
0	934.51
3	925.34
7	887.03
10	804.74
13	720.52
15	579.64
18	495.48
21	414.52
23	338.53
26	263.94
28	189.53
31	75.63
33	29.35
35	4.87

2



PHYSICAL CHARACTERISTICS

The following table shows the changes observed in their physical aspect .

Days	Observations
0-18	<p>No changes observed.</p> 
21	<p>It supports less force and breaks more easily.</p> 
31	<p>It is fragmented into several pieces.</p> 
20	<p>It is possible to break into pieces with the strength of hand.</p> 



V.- Conclusions:

After exposing Sample M1 to the accelerated aging process, the change in mechanical and physical properties were also clearly observed.

It is considered that the period of useful life ends by losing more than 50% of the initial force supported that took place after 21 days of thermal exposure testing. Therefore, it is determined that **a shelf life of Sample M1 is considered to be 52 months (4 years with 4 months) under 30°C warehouse environment.**

Based on ASTM D5510-94 is considered that the sample has reached its accelerated degradation, when it support less than 5% of force that happened after 35 days of study therefore we concluded that this sample has a **degradation time of 87 months (7 years with 3 months).**

Please be advised that 1 day of study shall be converted into 2.5 months under 30°C environment. The conversion rate is calculated based on Arrhenius Activation Energy.

Please be also advised that the determination of shelf life time as 50% retained property is based on our long term experiences we have been conducting a degradation test for a number of customers throughout the worldwide region.

Ing. Martha Castillo Cruz