ANALYSIS REPORT

General information

Date: February 17, 2016

Analysis number:	Q-090116F147
Client:	Plaszom
Analysis period:	09-01-2016/17-02-2016
Test Description:	Accelerated Photodegradation

I.- Sample Description:

A5. Disposal Cups
P-life SMC PS: 1%

II.- Objective:

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.

III.- Laboratory equipment:

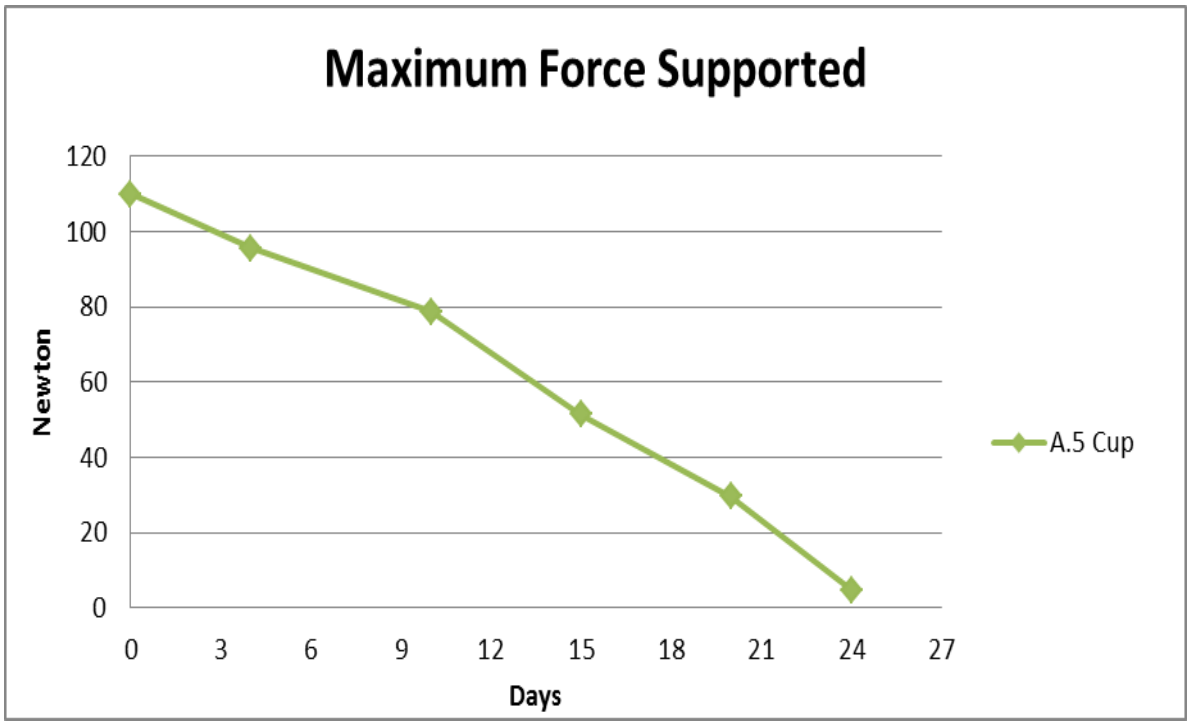
a) Universal Testing Machine.
b) QUV accelerated weathering tester. Cycle: Continues of UV at 50°C and 0.70 W/m2-

IV.- Results:

MECHANICAL PROPERTIES

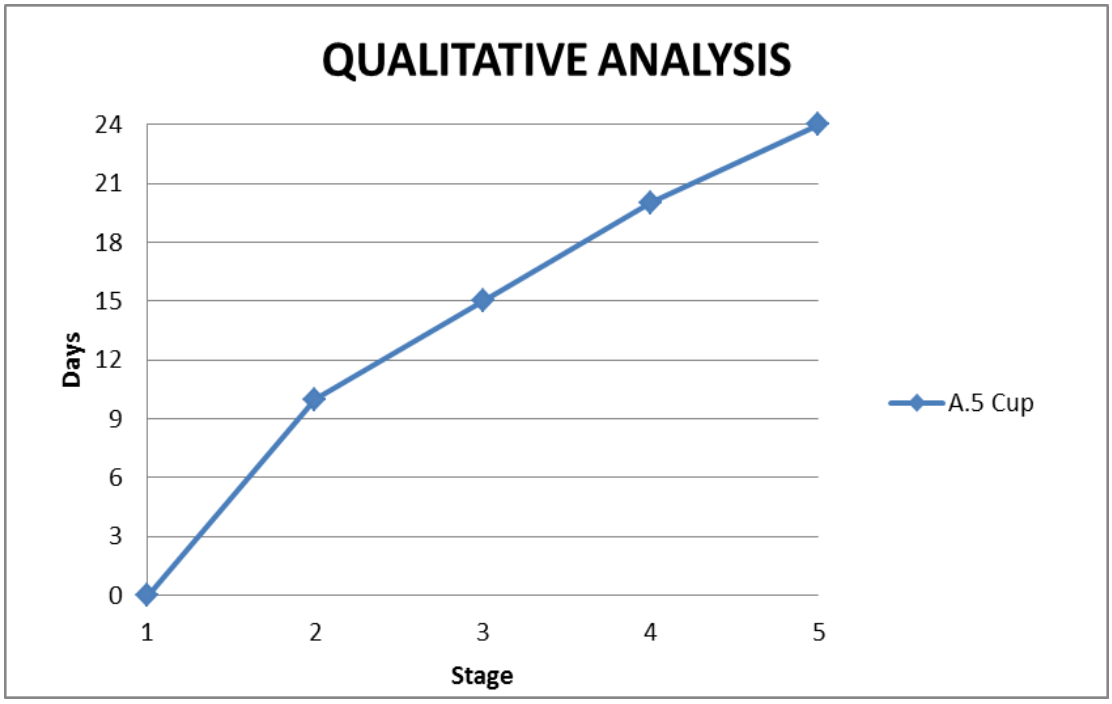
For this study we decided to analyze the results of the maximum force supported because it was the most significant data.

	Maximum Force Supported (Newton)
Days in the oven	**A5. Cup**
0	109.88
4	95.52
10	78.8
15	51.38
20	29.54
24	4.75



QUALITATIVE ANALYSIS

	Stage	Sample A.5 Cup Days
1	The sample enters to study.	0
2	Maintains Physical Properties.	10
3	The structure changes his initial properties (color, hardness)	15
4	The product is broken easily.	20
5	The degradation process has finished.	24



V.- Conclusions:

A.5 Cup

After exposing the sample 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 15 days of exposure. Therefore, it is determined that **a shelf life of Sample M1 is considered to be 37 months (3 years with 1 month) 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 24 days of study therefore we concluded that this sample has a **degradation time of 60 months (5 year).**

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

ANNEX IMAGE

Illustration 1. Laboratory equipment

Illustration 2. Sample A.5 after 10 days of study.

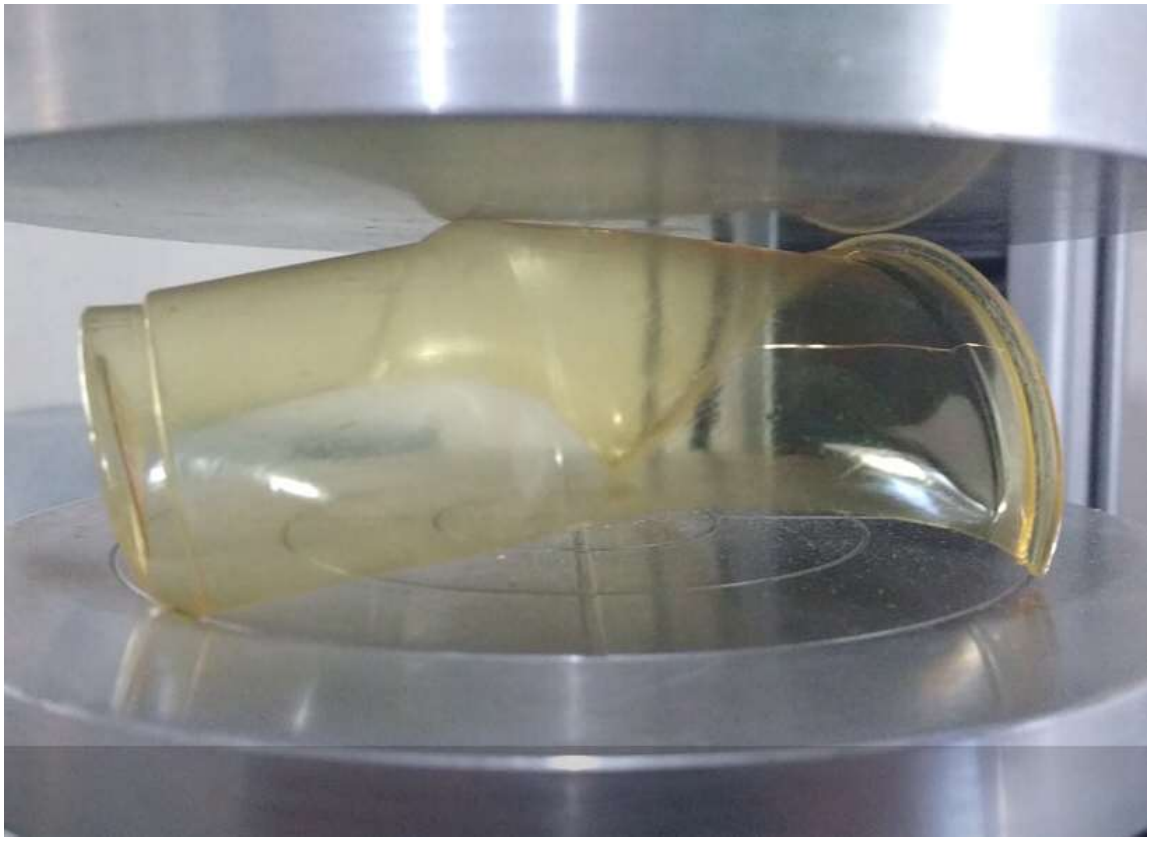


Illustration 3. Sample A.5 after 15 days of study

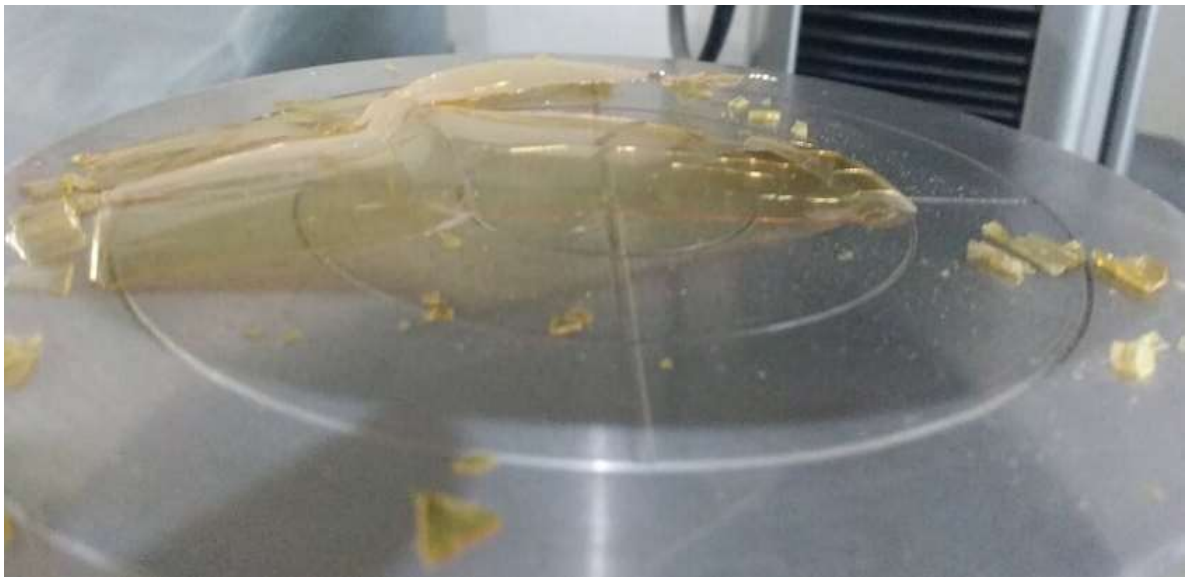


Illustration 4. Sample A.5 after 20 days of study

Illustration 5. Sample A.5 after 24 days of study