CERTIFICADO

CÓD. DO CERTIFICADO:CU-COC-882015

Campo de atenção:

FSC® Chain of Custody (COC)

Emitido para:

GPK Brasil Plasticos e Papeis Ltda
Sorocaba, Brasil
Projeto em: Brasil

Padrão:

FSC-STD-40-003 V2-1 CoC Certification of Multiple Sites;, FSC-STD-50-001 V2-0 Requirements for use of the FSC trademarks by Certificate Holders;, FSC-STD-40-004 V3-1 Chain of Custody Certification

Validade: 23 Outubro 2027

A validade desse certificado deve ser verificada em www.fsc-info.org.

A Control Union Certifications declara ter auditado a(s) unidade(s), e/ou produtos do portador do certificado mencionados acima e ter os encontrado em acordo com os padrões mencionados acima.

Este certificado abrange a(s) unidade(s), e /ou produto(s) como mencionados no anexo autenticado deste certificado. A lista completa dos grupos de produtos abrangidos pelo certificado pode ser encontrada no Portal do FSC dos certificados registrados (www.fsc-info.org).

Este certificado em si não constitui evidência de que um determinado produto fornecido pelo portador do certificado é certificado pelo FSC [ou Madeira Controlada FSC]. Produtos oferecidos, enviados ou vendidos pelo portador do certificado podem somente serem considerados abrangidos pelo escopo do certificado quando os pedidos FSC requeridos são claramente indicados nas faturas e documentos de transporte.
Este certificado está em vigor até nova ordem, desde que o cliente acima mencionado continue cumprindo com as condições estabelecidas no contrato de cliente com a Control Union Certifications. Com base nas inspeções anuais que a Control Union Certifications realiza, este certificado é atualizado e mantido em vigor.

Date of certification:
24 Outubro 2022
Local e data da emissão:
Sao Paulo, 24 Outubro 2022

CERTIFICADO No:: C 882015CU-COC-01.2022

FSC
www.fsc.org
FSC® A000507
The mark of responsible forestry

Declarado por:
Victoria C.M. Pires
Em nome do Diretor

Miss V. Pires

Certificador
Control Union Certifications B.V.
Meeuwenlaan 4-6
8011 BZ ZWOLLE
The Netherlands
http://www.controlunion.com
tel.: +31(0)38-4260100

Anexo ao
CÓD. DO CERTIFICADO:CU-COC-882015
FSC® Chain of Custody (COC)

A CU realizou uma inspeção, conforme mencionado no contrato do cliente assinado por:

GPK Brasil Plasticos e Papeis Ltda
Av. Independência, 20 - Bloco 20
18087-101 Sorocaba
Brasil

Este certificado dá o direito, em conformidade com o contrato com o cliente, com base na acreditação da CUC pelo Forest Stewardship Council (FSC), para usar o logo FSC para a(s) unidade(s), processo(s) e/ou produto(s)mencionados abaixo. Uso do logo FSC (comercial) em produtos é somente permitido para produtos mencionados em "produtos"em conformidade com essa categoria.

Este certificado e suas cópias ou reproduções devem retornar a CU imediatamente quando solicitado. Mais informações sobre o cliente e/ou produtos e/ou unidade podem ser obtidos no site da CU (www.controlunion.com/certifications) ou entrando em contato com a CUC.

Este certificado, referido no contrato do cliente como escopo do certificado, abrange o(s) seguinte(s) produto(s), que cumprem com a última versão dos Padrões Florestais CUC:

Certificado produtos

Produto no.	Nome do produto	categoria	Unidade(s) de processamento
P 064018	P2.1.2 Papel nao revestido	FSC Mix	PRC 129589, PRC 129590
P 064069	P7.1 Cadernos	FSC Mix	PRC 129589, PRC 129590
P 064070	P7.2 Blocos de notas	FSC Mix	PRC 129589, PRC 129590
P 064071	P7.3 Pastas de arquivo	FSC Mix	PRC 129589, PRC 129590
P 064074	P7.6 Envelopes	FSC Mix	PRC 129589, PRC 129590
P 064076	P7.8 Etiquetas adesivas	FSC Mix	PRC 129589, PRC 129590
P 064089	P8.6 Calendarios, diarios e organizadores	FSC Mix	PRC 129589, PRC 129590

Este certificado abrange a(s) seguinte(s) unidade(s) de processamento, que cumprem com a última versão dos Padrões Florestais CUC:

Unidades de processamento

Unidade no.	Nome da unidade	Ref. da unidade	Endereço	Processos
PRC 129589	GPK Brasil Plasticos e Papeis Ltda	D-01	Av. Independência, 20 - Bloco 20 Sorocaba, SP Brasil	Impressao e servicos relacionados
PRC 129590	GPK Brasil Plasticos e Papeis Ltda - Site	D-02	Rod. Lourenco Lozano, S/N Duartina, SP BRAZIL	Impressao e servicos relacionados

Este certificado, incluindo o anexo permanece sendo de propriedade da Control Union Certifications e pode ser retirado em caso de terminações como mencionado no contrato com o cliente, ou em caso de ocorrerem mudanças ou desvios dos dados acima mencionados. O licenciado é obrigado a informar a Control Union Certifications imediatamente de qualquer alteração nos dados acima mencionados. Apenas um certificado original e assinado é válido.

Data da certificação:
24 Outubro 2022

Autenticado por

Local e data da emissão:
Sao Paulo, 24 Outubro 2022

Victoria C.M. Pires
Em nome do Diretor
Miss V. Pires
Certificador

Este certificado não pode ser usado como certificado de garantia para as mercadorias entregues!

TEST REPORT

General information

Date: February 10th, 2019

Number of report: Q-100119F390
Client: GPK, Eco Ventures Brasil.
Address: Brazil.
Analysis period: 10-01-2019/31-01-2019
Test Description: Determine the endpoint of degradation

I.- Sample Description:

M1. PP sheet (sheet A) SMC 2360– with Plife 1%

II.- Identification of the Method:

LAB-M001 "Standard practice for fluorescent ultraviolet exposure of photodegradable plastics" ASTM D5208−14. LAB-M002 "Standard practice ford determining degradation end point in degradable polyethylene and polypropylene using a tensile test" ASTM D3826−98 (2013).

III.- Equipo de Laboratorio:

a) **Accelerated weathering tester "QUV"**
Cycle C. Continues cycle of UV at 50°C. Irradiation de 0.89 W/(m^2 · nm) a 340 nm.

b) **Universal Testing Machine "TESTER 1"**
Grip for Stress Testing in plastic films 2 / in. Speed:300 mm/min.

IV.- Process:

The preparation of the test pieces is carried out as established in the instructions LAB-I002.

Dimensions of the test piece.

Thickness: 0.26 mm

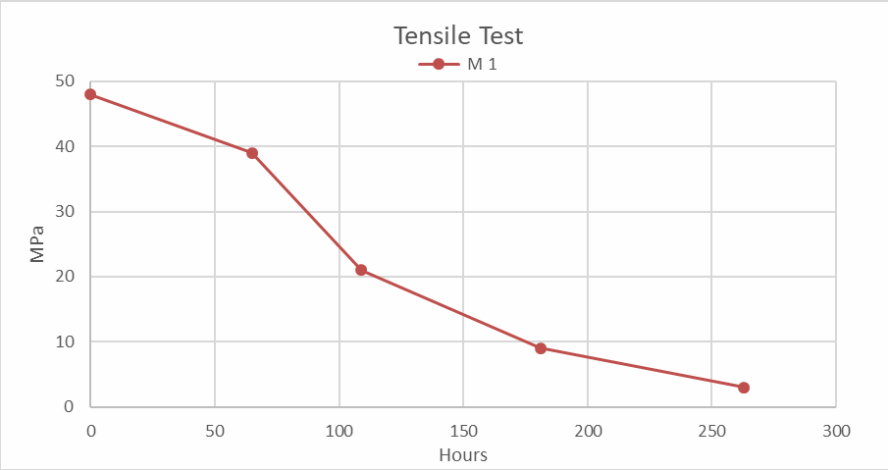
Width: 26 mm

Length: 106 mm

V.- Results:

In the following table are shown the values obtained during the evaluation of the tensile for each sample. Importantly, these results are specifically for these samples.

Table 1.- Tensile Test (MPa)	
Hours of exposition	**M1**
0	48
65	39
109	21
181	9
263	3
Temperature	Humidity
24°C	32%



Note:

1. *The separation between the grips at the start of the tests was 4 cm in each specimen.*
2. *In this test, 4 specimens were evaluated to determine their end point of degradation and more than 75% recorded less than 5MPa, the average value is recorded in table 1.*

VI.- Conclusions:

M1. PP sheet with p-life additive at 1%

After exposing the sample to the accelerated aging process, the change in mechanical and physical properties were observed.

Based on the ASTM D3826-98 standard, it is considered that the sample has reached its degradation when 75% or more of the samples recorded a tensile of less than 5 MPa, which happened after 263 hours.

Perform by	***Approved by***
Ing. Karla Angelica Ventura Ramos	***Ing. Martha Castillo Cruz***
Ingeniero de Calidad.	***Directora de Operaciones***

-End of report-

ANNEX 1.- Sample during the degradation test.

Image 1.-*Initial tensile test for the sample.*

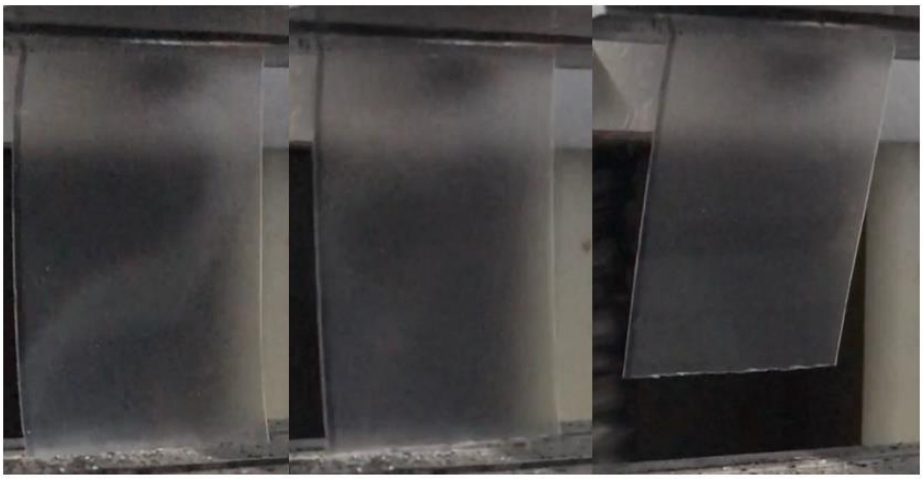


Image 2.- *Tensile test for the sample at 65 hours.*

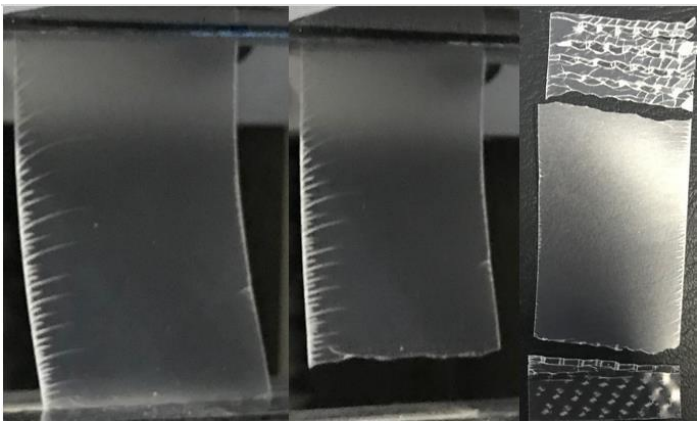


Image 3.- *Tensile test for the sample at 109 hours.*

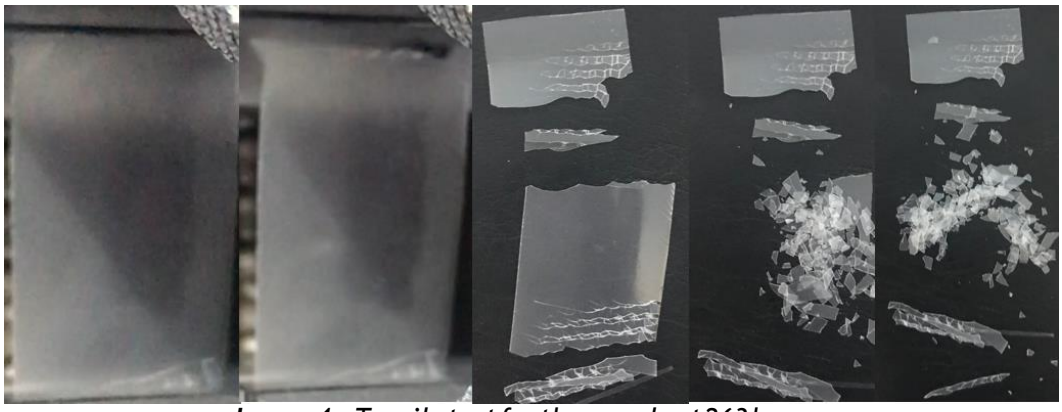


Image 4.- *Tensile test for the sample at 263 hours.*

Laboratorio Plásticos y Derivados Country S. de R.L. de C.V.

ANNEX TO THE TEST REPORT

General information

Date: February 10th, 2019

Number of report:	Q-100119F390
Client:	GPK, Eco Ventures Brasil.
Address:	Brazil.
Analysis period:	10-01-2019/31-01-2019
Test Description:	Determine the endpoint of degradation

I.- Sample Description:

M1. PP sheet (sheet A)
SMC 2360–with Plife 1%

II.- II.- Interpretation of Results:

It is considered that the period of useful life ends by losing more than 50% of the initial elongation, that took place after 109 hours of exposure. Therefore, it is determined that a **shelf life** of Sample is **2 years with 4 months** under 30°C warehouse environment.

Based on the ASTM D3826-98 standard, it is considered that the sample has reached its degradation when 75% or more of the samples recorded a tensile of less than 5 MPa, which happened after 263 hours, therefore we concluded that this sample has a **degradation time** of **3 years with 8 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
Directora de Operaciones

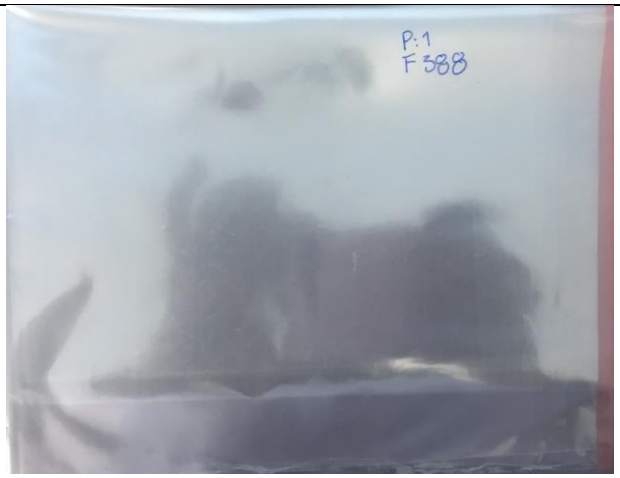
TEST REPORT

General information

Date: January 23TH, 2018

Number of report: Q-211118F388
Client: GPK, Eco Ventures Brasil.
Address: Brazil.
Analysis period: 21-11-2018/21-01-2019
Test Description: Determine the endpoint of degradation

I.- Sample Description:



M1. PP film (Film B) SMC 2360 – with Plife 1%

II.- Identification of the Method:

LAB-M001 "Standard practice for fluorescent ultraviolet exposure of photodegradable plastics" ASTM D5208−14. LAB-M002 "Standard practice ford determining degradation end point in degradable polyethylene and polypropylene using a tensile test" ASTM D3826−98 (2013).

III.- Equipo de Laboratorio:

a) **Accelerated weathering tester "QUV"**
Cycle C. Continues cycle of UV at 50°C. Irradiation de 0.89 W/(m^2 · nm) a 340 nm.

b) **Universal Testing Machine "TESTER 1"**
Grip for Stress Testing in plastic films 2 / in. Speed:300 mm/min.

IV.- Process:

The preparation of the test pieces is carried out as established in the instructions LAB-I002.

Dimensions of the test piece.

Thickness: 0.035 mm

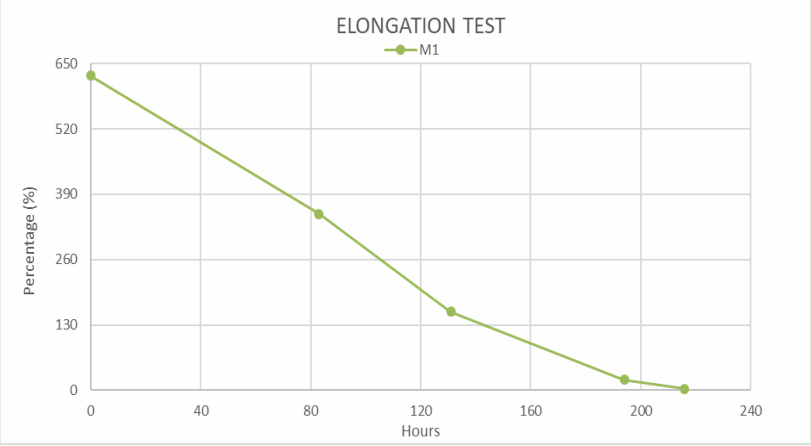
Width: 26 mm

Length: 106 mm

V.- Results:

In the following table are shown the values obtained during the evaluation of the elongation for each sample. Importantly, these results are specifically for these samples.

Table1.-Elongation (%)	
Hours of exposition	**M1**
0	625.8
93	351.07
131	156.45
194	21.07
216	3.30
Temperature	Humidity
23°C	34%



Note:

1. *The separation between the grips at the start of the tests was 4 cm in each specimen.*
2. *In this test, 4 specimens were evaluated to determine their end point of degradation and more than 75% recorded less than 5% elongation, the average value is recorded in table 1.*

VI.- Conclusions:

M1. PP film (Film B) with p-life additive at 1%

After exposing the sample to the accelerated aging process, the change in mechanical and physical properties were observed.

Based on the ASTM D3826-98 standard, it is considered that the sample has reached its degradation when 75% or more of the samples recorded an elongation of less than 5%, which happened after 216 hours.

Perform by
Ing. Karla Angelica Ventura Ramos
Ingeniero de Calidad.

Approved by
Ing. Martha Castillo Cruz
Directora de Operaciones

PJLA Testing
Accreditation No.: 99219

-End of report-

ANNEX 1.- Sample during the degradation test.

Image 1.- *Sample after elongation test for 216 hours.*

Laboratorio Plásticos y Derivados Country S. de R.L. de C.V.

ANNEX TO THE TEST REPORT

General information

Date: January 23TH, 2018

Number of report:	Q-211118F388
Client:	GPK, Eco Ventures Brasil.
Address:	Brazil.
Analysis period:	21-11-2018/21-01-2019
Test Description:	Determine the endpoint of degradation

I.- Sample Description:

M1. PP film (Film B)
SMC 2360–with Plife 1%

II.- II.- Interpretation of Results:

It is considered that the period of useful life ends by losing more than 50% of the initial elongation, that took place after 93 hours of exposure. Therefore, it is determined that a **shelf life** of Sample is **1 year with 8 months** under 30°C warehouse environment.

Based on the ASTM D3826-98 standard, it is considered that the sample has reached its degradation when 75% or more of the samples recorded an elongation of less than 5%, which happened after 216 hours, therefore we concluded that this sample has a **degradation time** of **2 years with 9months.**

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
Directora de Operaciones