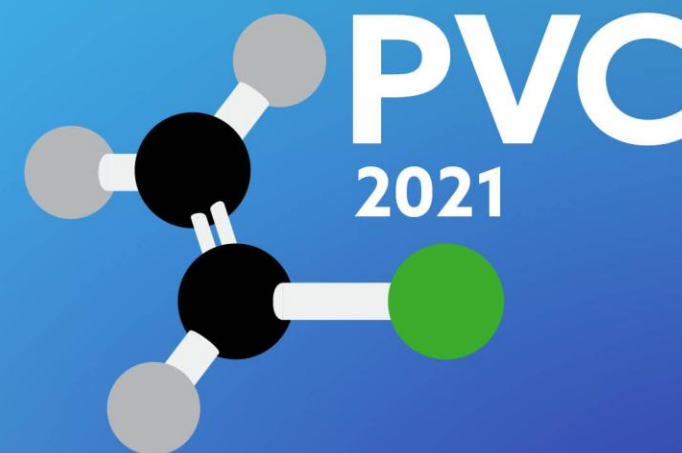


Ecolabels, applicability and impact on the flexible PVC sector

Authors: Jacyr Vianna de Quadros Jr., Nexoleum Europe B. V.
Diego Garcia Touza, Varteco Química Ibérica S.L.U.



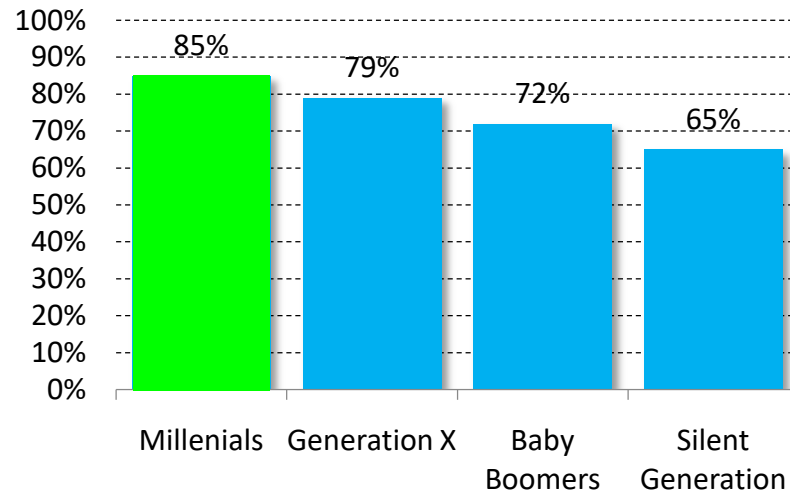
Definition of Ecolabel

Ecolabels are mostly voluntary marks that can help consumers and professional purchasers identify food, products, or services that meet specific environmental performance criteria. These criteria range from certificates of origin, through the measurement of human or environmental impact, to complex evaluations of a product's life cycle with clear metrics.

Sustainability awareness is growing

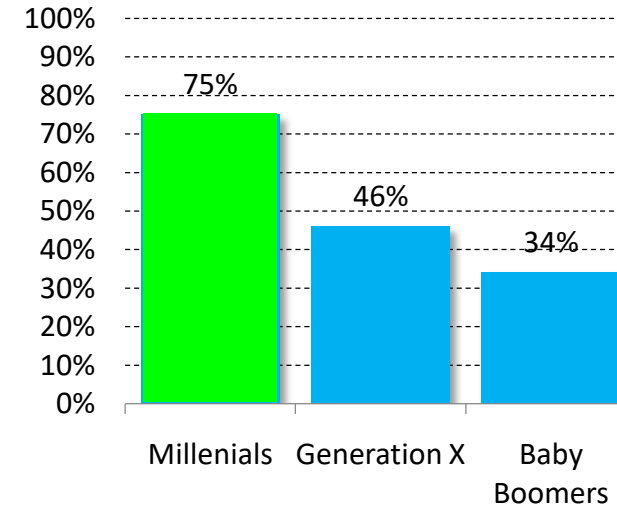
“ALMOST HALF OF THE GLOBAL CONSUMERS INTERVIEWED SAID THAT THEY WOULD ABANDON A BRAND TO PURCHASE MORE SUSTAINABLE PRODUCTS”

% Respondents, Global



Respondents that said it was “**extremely**” or “**very**” important for the companies to implement programs to improve the environment.

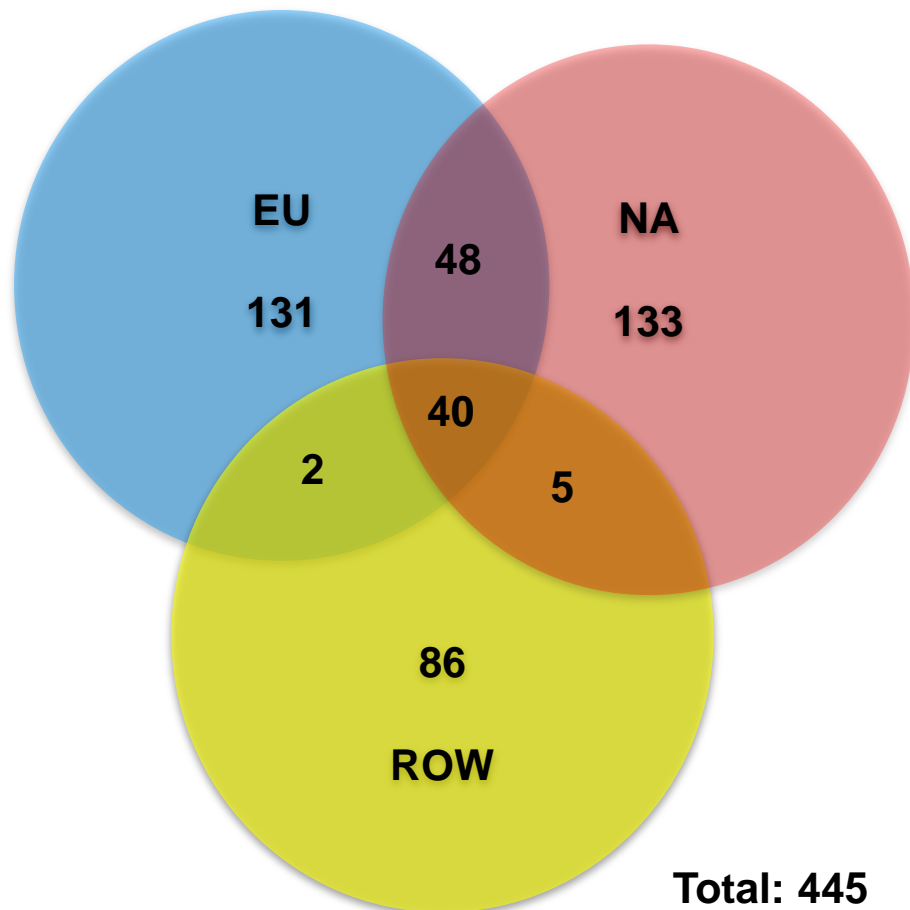
% Respondents, USA



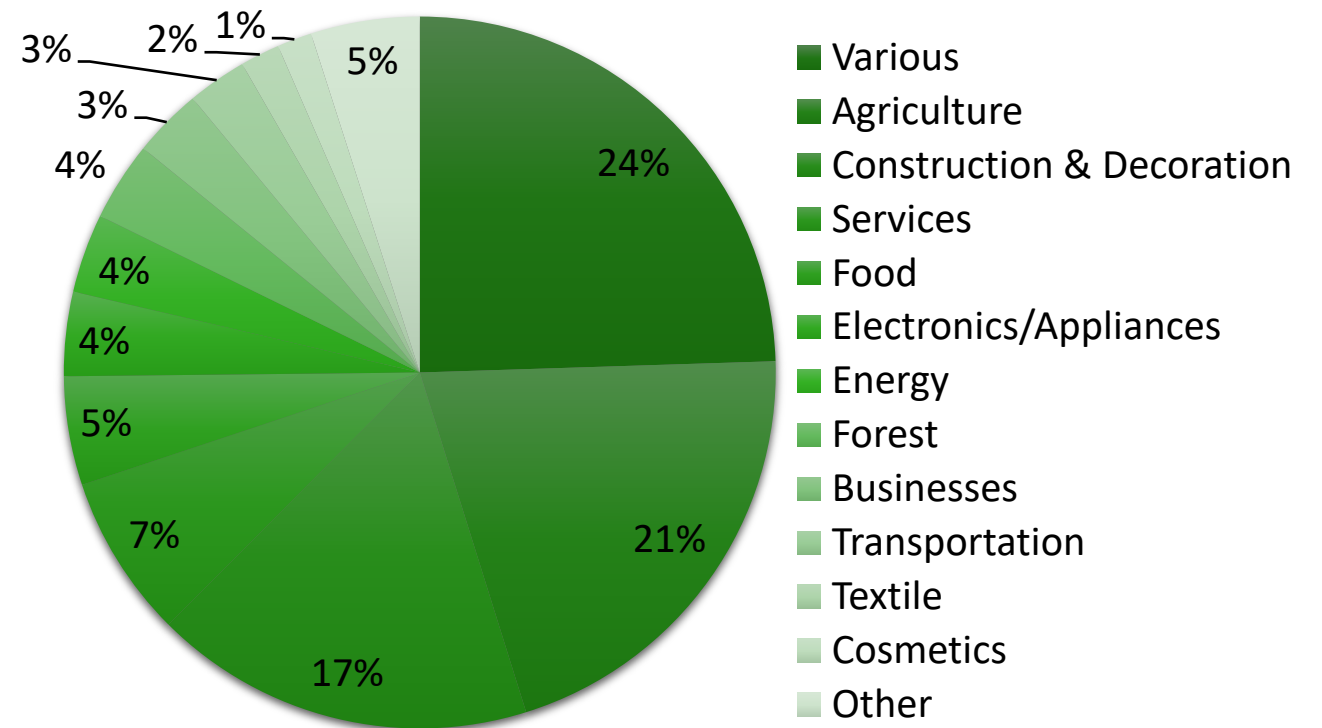
Respondents that would “**definitely**” or “**likely**” change their purchasing habits to reduce their environmental impact

Ecolabels Landscape

Total Ecolabels by Region

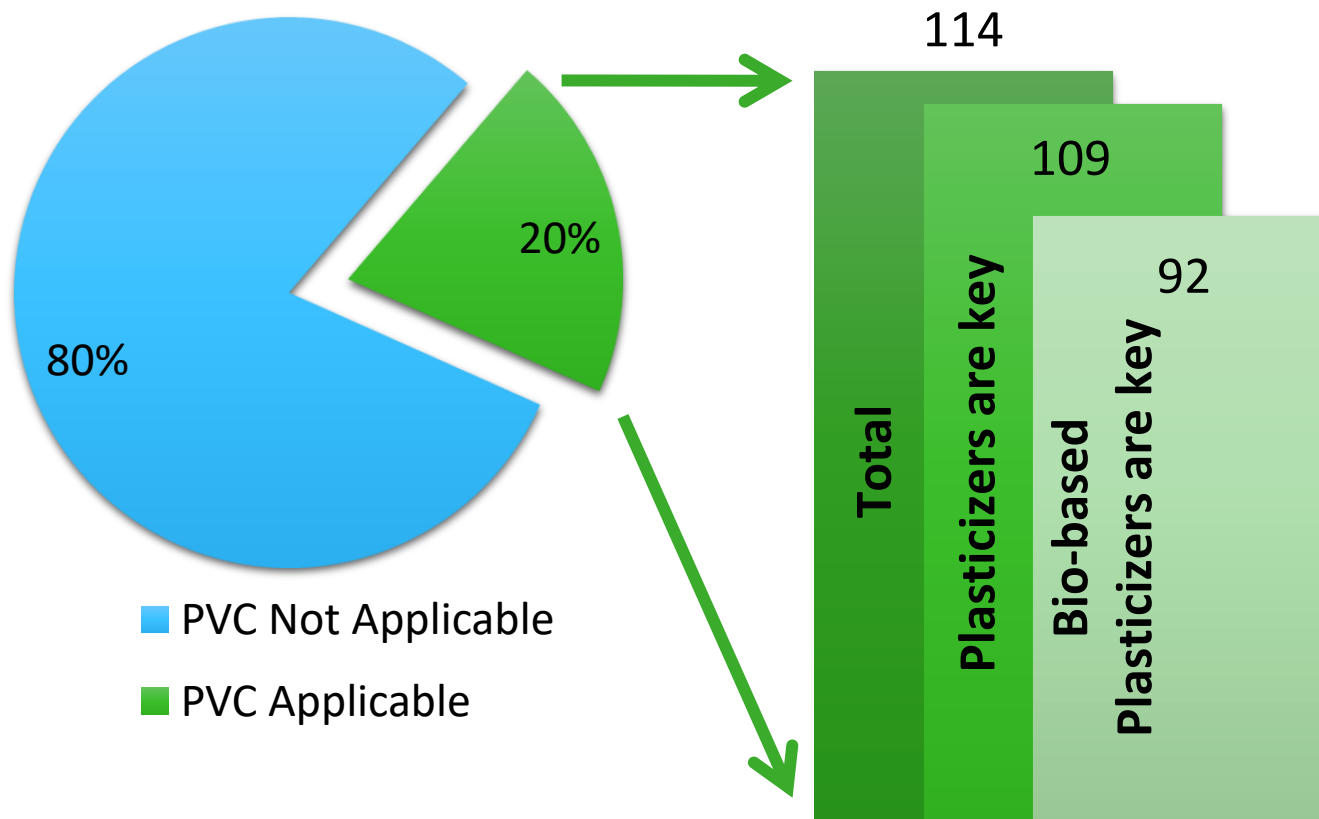


Total Ecolabels by Scope

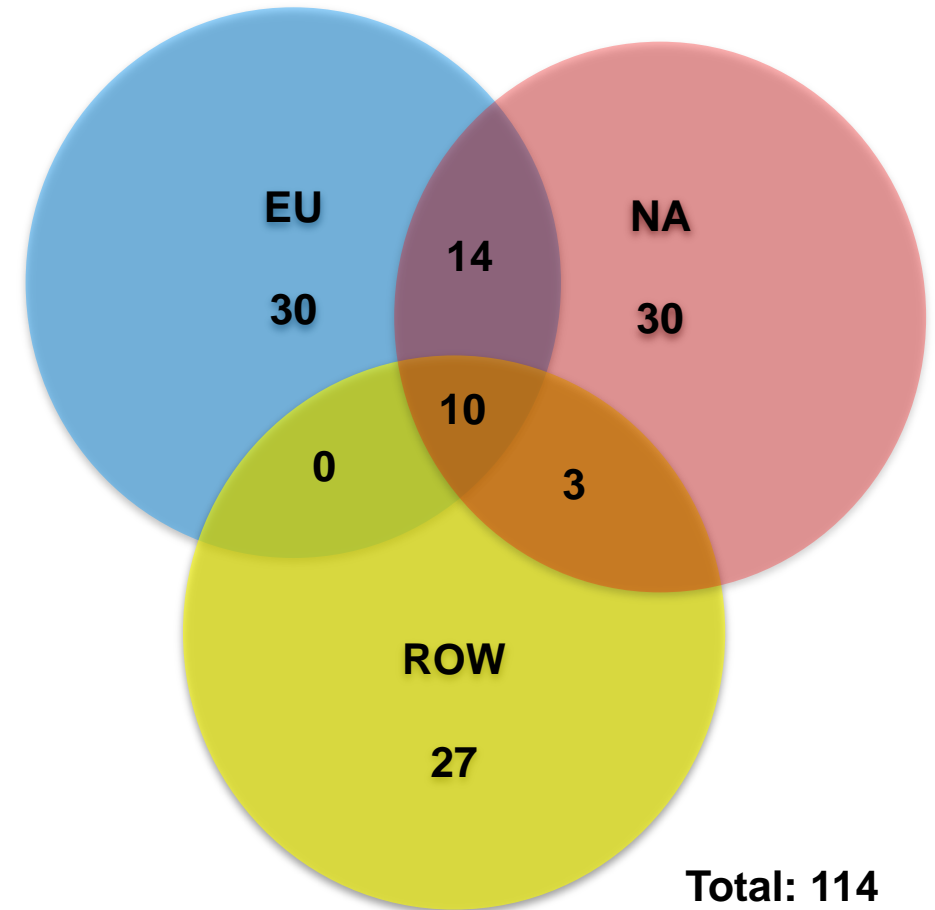


Source: www.ecolabelindex.com

Ecolabels Landscape – PVC applicable

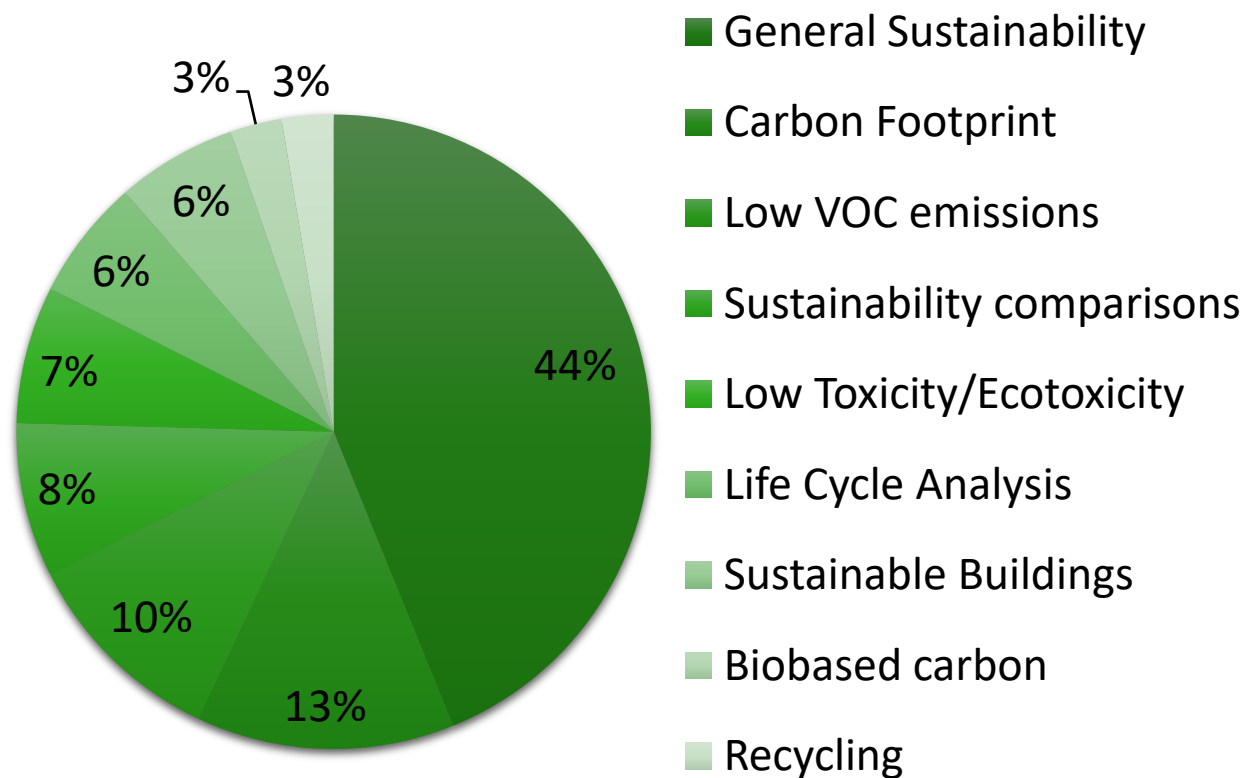


Total PVC Applicable Ecolabels by Region

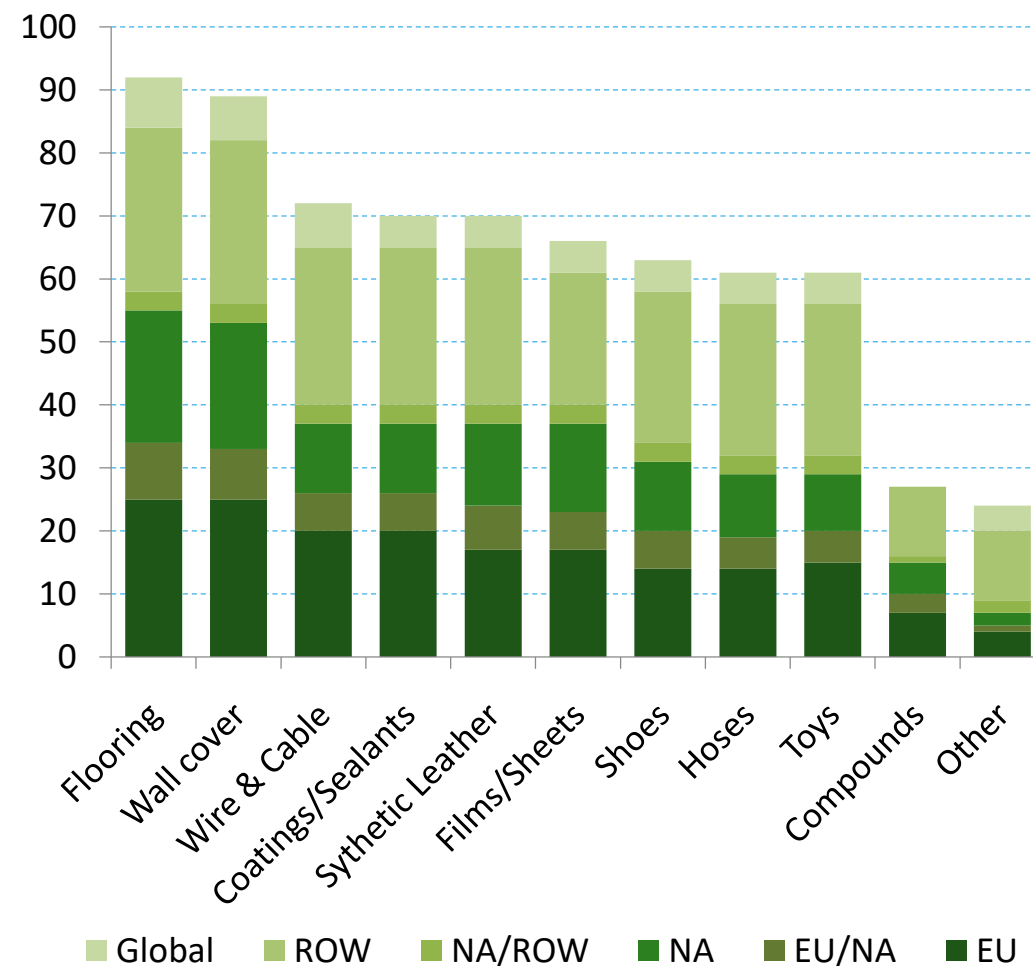


Ecolabels Landscape – Flexible PVC Applicable

Total PVC Applicable Ecolabels by Certification Type



Total PVC Applicable Ecolabels by Segment



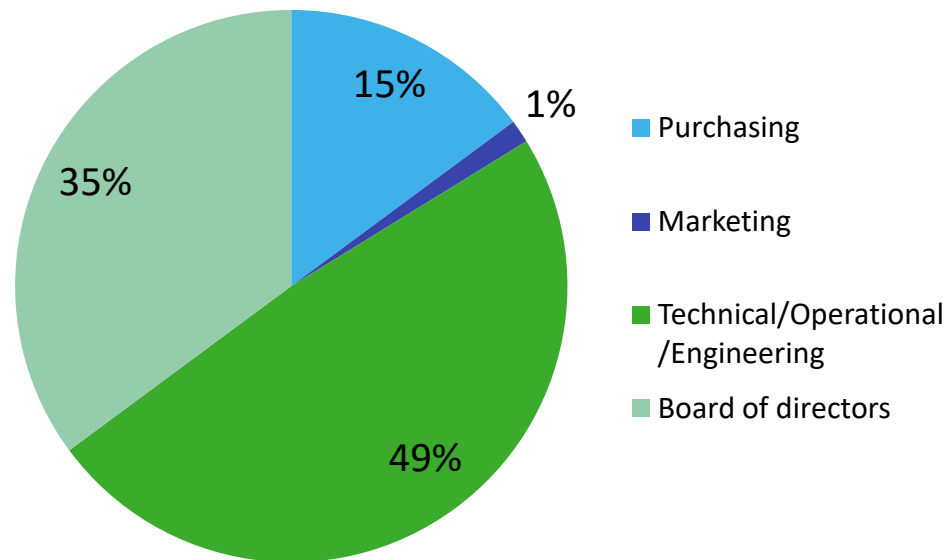
Market survey – Sustainable Products and Ecolabels

- 74 respondents
- 15 countries
- 3 macro regions: Europe/ North America/ Rest of the World
- Various segments
- Various job positions
- Various company sizes
- 28% return rate
- Questionnaire (Google Forms): <https://forms.gle/mKyBUuuhecSLSGtW9>

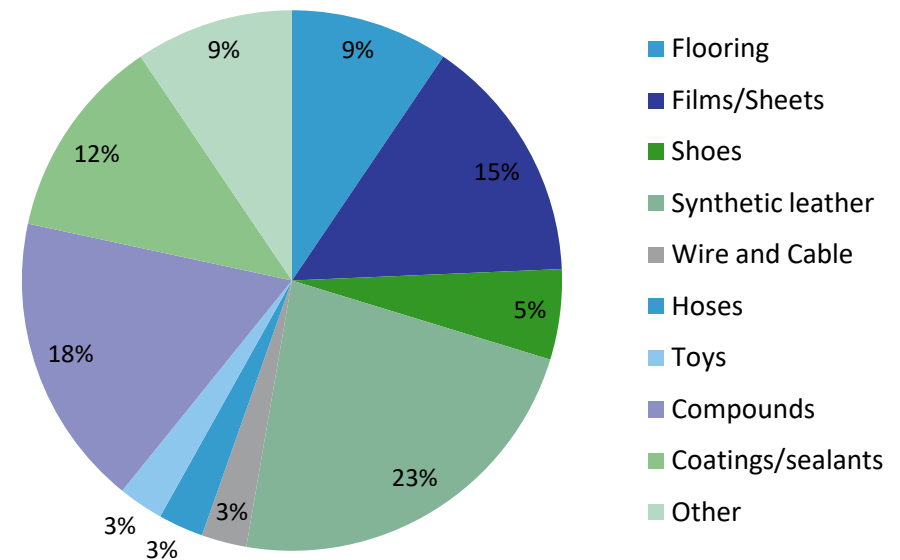
We'd like to thank all respondents for their time and the companies Inovyn, Elekeiroz and SMH Americas for their invaluable contribution to this survey

Market survey – Demographics

Job position of respondents

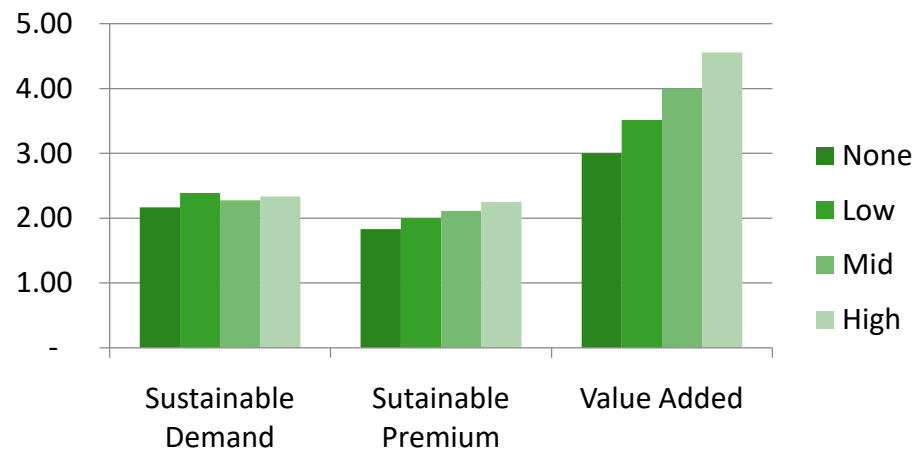


Segments covered

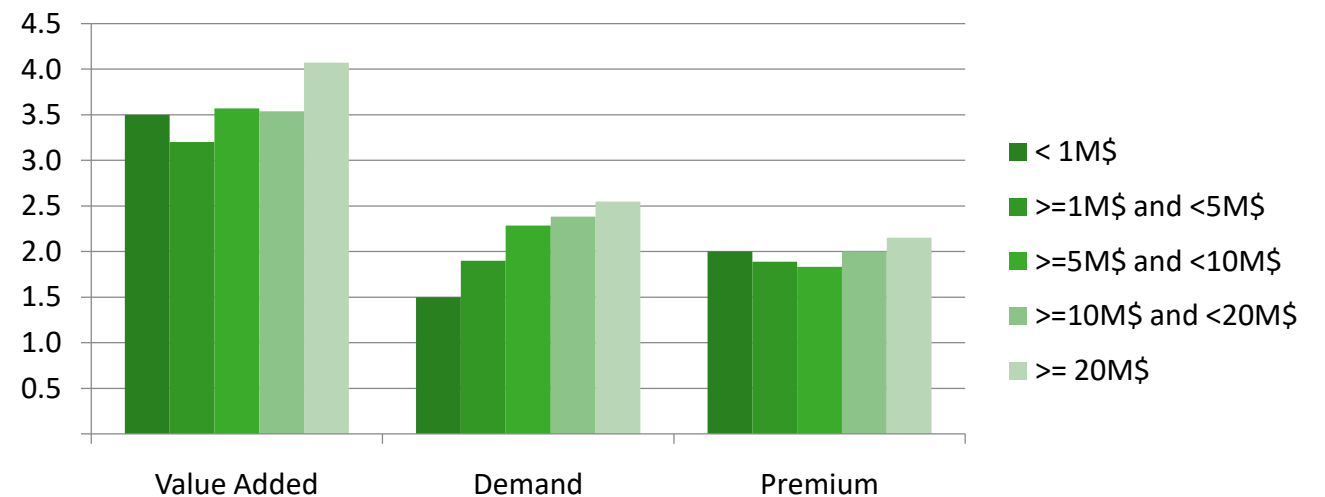


Market survey – General findings

Higher Ecolabel awareness respondents perceive higher value added for sustainable products

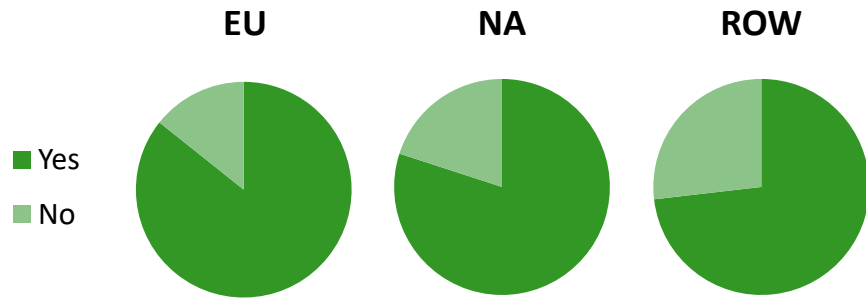


Larger companies perceive more benefits and demand for sustainable products

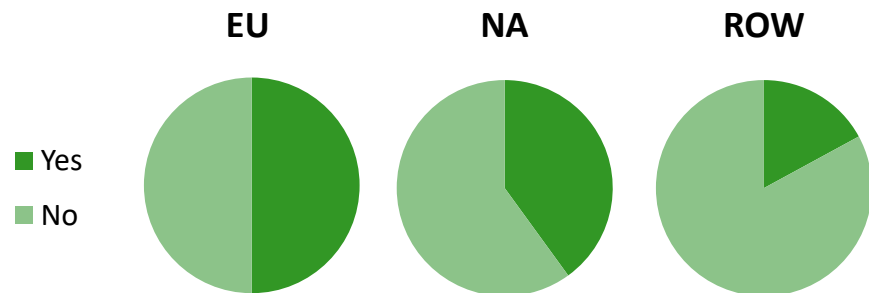


Market survey – Regional differences

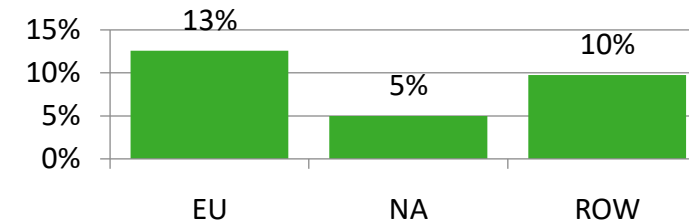
Products with sustainable claims offered?



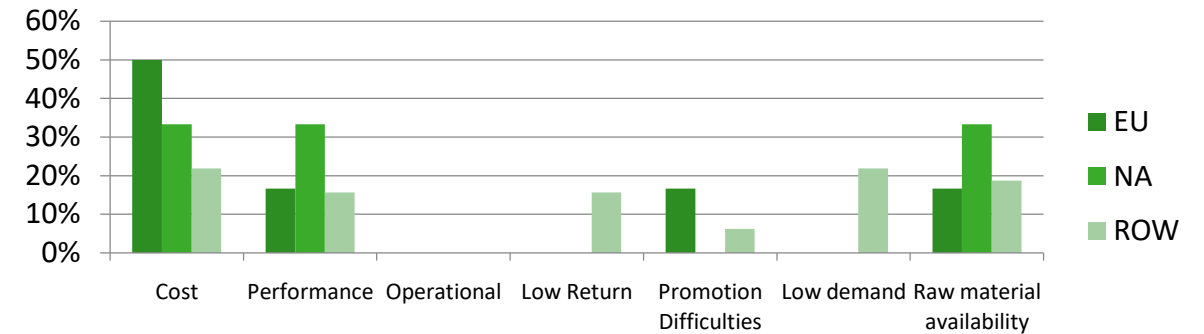
Ecolabels used?



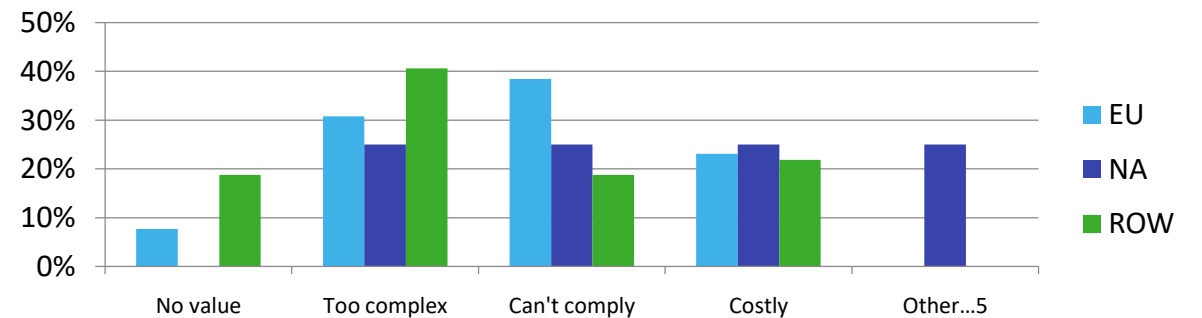
Average participation of sustainable products in total revenues



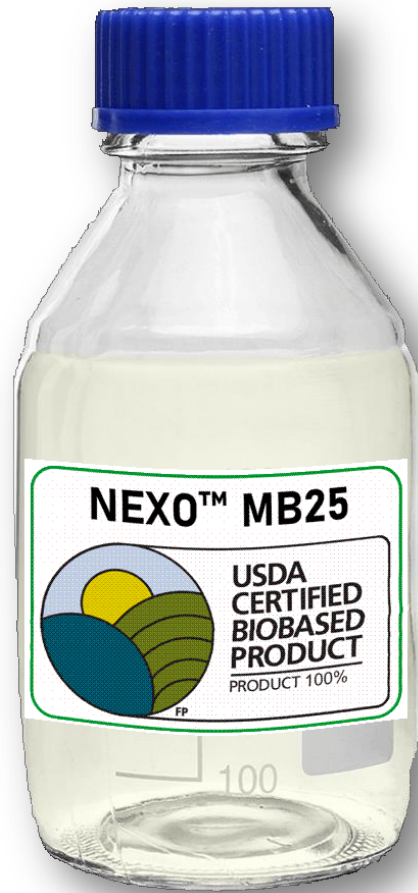
Obstacles to launching sustainable products



Obstacles to the use of Ecolabels



Ecolabels: practical application



Nexoleum – Biobased plasticizers

Ecolabel: USDA BioPreferred®

Tests: Beta Lab Services

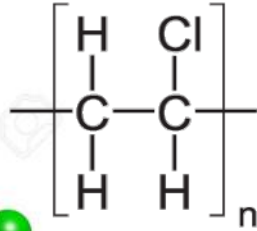
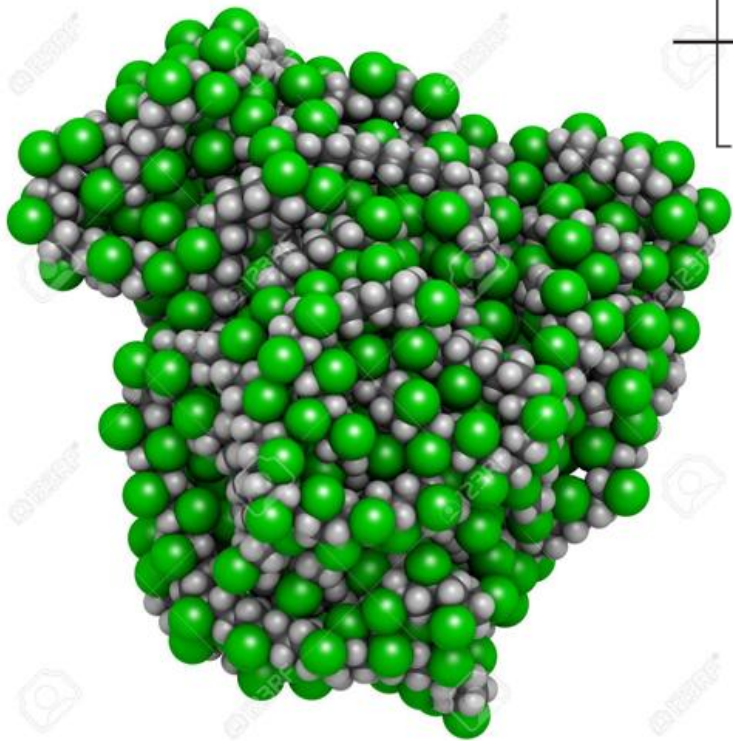
Time to obtain: 2 days preparation and forms completion
30 days Lab processing and results
20 days certification

Cost of process: US\$ 450/sample – Analysis
US\$ 56/sample – Shipping

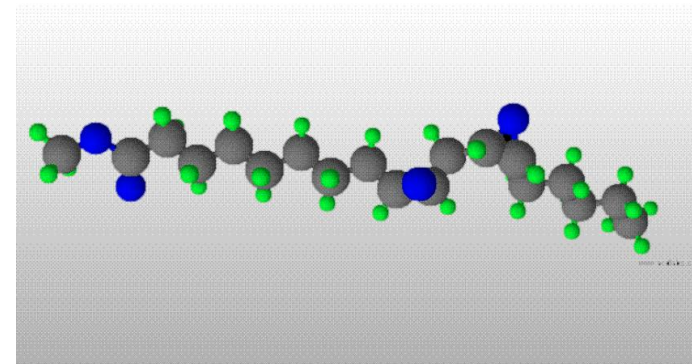
US\$ 506/sample – Total

Number of certified products: 4

Ecolabels: practical application – Flexible PVC



PVC is almost 57% chlorine and 43% carbon so it could be considered the plastic with the lowest fossil-carbon consumption.



When a bio-based plasticiser is used the fossil-carbon content remains almost constant while the bio-based carbon content is increased so this compound complies with a biobased content certification and labelling.

Negative carbon foot print

USDA BioPreferred® **100% renewable**, based on ^{14}C analysis.

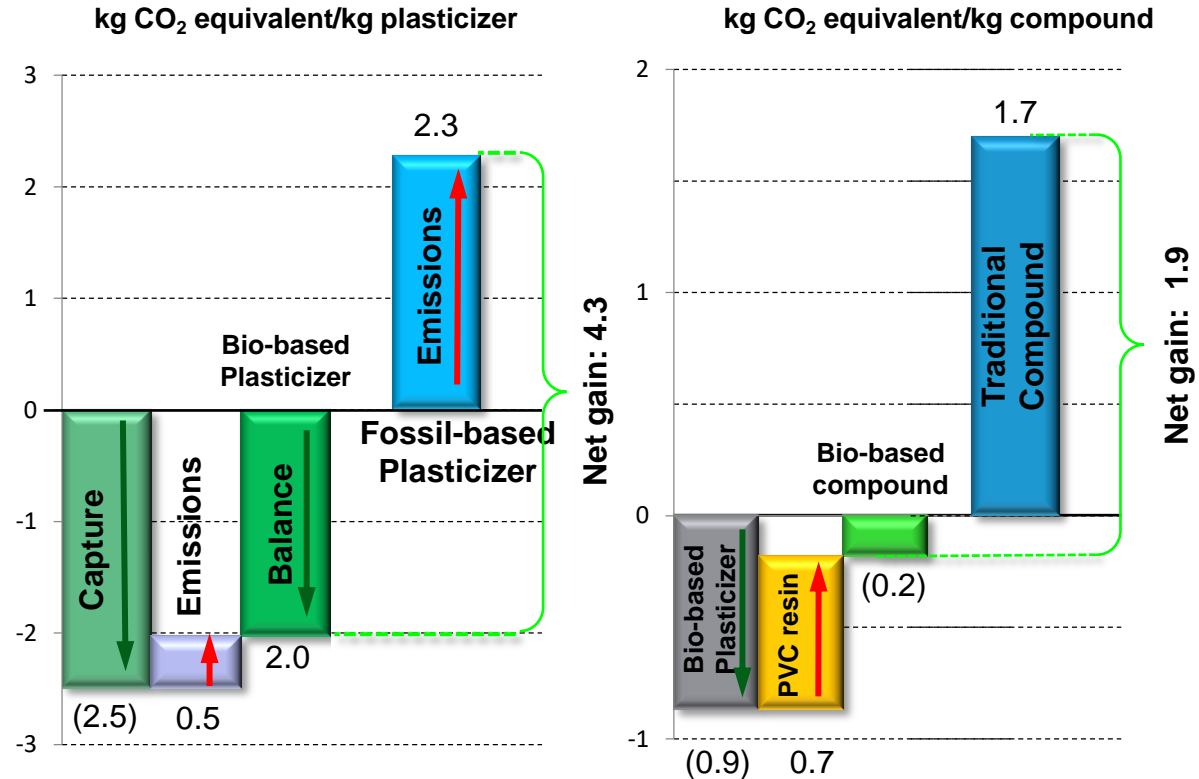
Captured CO_2 equivalent (estimated)

Life cycle analysis

Capture = CO_2 equivalent removed from the atmosphere by photosynthesis

Emission in production and logistics from basic raw materials to gate ("cradle to gate")

Compound: 80 phr plasticizer content



Ecolabels: practical application – PVC Compounds

The screenshot displays the USDA BioPreferred catalog interface. The top navigation bar includes links for ABOUT USDA, ASK THE EXPERT, CONTACT US, LOG IN, and a SEARCH SITE button. The main header features the USDA logo and the text "United States Department of Agriculture". Below this is a secondary navigation bar with links for HOME, ABOUT, NEWS, CATALOG, FAQs, HELP, CONTACT US, and TOOLS. A "BioPreferred" logo is also present.

The left sidebar contains a "BROWSE BY CATEGORY" section with a search bar and a list of categories: Baby And Kids, Construction, Custodial Services, Films and Packaging, Food Services/Cafeteria, Grounds Maintenance, Household Supplies, Intermediates, Miscellaneous, and Office Supplies.

The main content area is titled "INTERMEDIATES - PLASTIC RESINS" and includes a "Catalog Home : Intermediates - Plastic Resins" link. A filter bar allows users to filter by "USDA Certified Biobased" and "Material". A list of products is shown, including various ALNU-BIO Tech resins, Arnitel Eco resins, BIO40E, BIO5.0v, Biobased Material Granule, Biobased plastic raw material (pine nut shell), Biobased resin, Bio Ceramic Plastics, and Bio-Flex F 2110.

A detailed view of the "BIOVIPLAS ECZ-1863-ZTF" product is shown, highlighting its biobased content and application. The product details are as follows:

Product	Company
Product Name	Bioviplas ECZ-1863-ZTF
Company Name	Compuestos y Granzas S.A.
Product Description	PVC compound made with a blend of plasticizers: V-Zilcus GP that is a content and DOTP.
Product Categories	[22%] - Intermediates - Plastic Resins
Found in Catalog	Intermediates > Intermediates - Plastic Resins
Biobased Content	Certified 47%
Product Application	shoe soles
Unique Feature	Orto-phthalate free and low non-renewable C content

A callout box on the right side of the image, labeled "SHOE COMPOUND", points to the "Product Application" field, which lists "shoe soles".

Ecolabels: practical application – PVC Compounds

USDA
United States Department of Agriculture

ABOUT USDA | ASK THE EXPERT | CONTACT US | LOG IN | SEARCH SITE

BioPreferred®

HOME ABOUT NEWS CATALOG FAQs HELP CONTACT US TOOLS

SEARCH CATALOG

BROWSE BY CATEGORY

- Baby And Kids
- Construction
- Custodial Services
- Films and Packaging
- Food Services/Cafeteria
- Grounds Maintenance
- Household Supplies
- Intermediates
- Miscellaneous
- Office Supplies

INTERMEDIATES - PLASTIC RESINS

Catalog Home : Intermediates - Plastic Resins

Filter By: ☐ USDA Certified Biobased ☐ Mandatory

Product

- FP ALNU-BIO Tech 150%48±3C
- FP ALNU-BIO Tech 150%55±3C
- FP ALNU-BIO Tech 165%40±3C
- FP ALNU-BIO Tech 165%48±3C
- FP Arnitel Eco L700
- FP Arnitel Eco M700
- FP BIO40E
- FP BIO5.0v
- FP Biobased Material Granule
- FP Biobased plastic raw material (pine nut shell)
- FP Biobased resin
- FP Bio Ceramic Plastics
- FP Bio-Flex F 2110

BIOMILLPOL 891

Product	Company
Product Name	BioMillpol 891
Company Name	Millpolimeros S.A
Product Website	www.millpolimeros.com.ec
Product Description	PVC Compound made for shoe soles and rainboots that are produced for children, women and men footwear.
Product Categories	[22%] - Intermediates - Plastic Resins
Found in Catalog	Intermediates > Intermediates - Plastic Resins
Biobased Content	Certified 58%
Product Application	PVC Compound made for shoe soles and rainboots that are produced for children, women and men footwear.
Unique Feature	Plasticized PVC compound, made with V-Ziclus® GP as the main plasticizer. This PVC compound is totally Phthalate Free.

SHOE COMPOUND

Ecolabels: practical application – PVC garden hoses

USDA
United States Department of Agriculture

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SEARCH CATALOG

BROWSE BY CATEGORY

- Baby And Kids
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- Intermediates
- Miscellaneous
- Office Supplies

GARDENING SUPPLIES AND ACCESSORIES

Catalog Home : Gardening Supplies and Accessories

Filter By: ☐ USDA Certified Biobased ☐ Mandatory Federal

Product

FP	ProBio Balance Plus™
FP	ProBio Balance™ Original
FP	Fertilpot
FP	Bio-degradable paper pot
FP	Bio-degradable paper pot
FP	BioStrate® Felt
FP	PlantPaper U1
FP	TECNOCOM MSR13
FP	TECNOCOM MR13
FP	TECSPRING MT13
FP	Membrane Bio
FP	Hydroponic
FP	Buxton Hollow Farm Nourished Coir

TECNOCOM MSR13

Product	Company
Product Name	TECNOCOM MSR13
Company Name	PVC Tecnocom SA
Product Website	http://www.pvctecnocom.com.ar/divmangueras.htm
Product Description	PVC super-reinforced garden hose, plasticized with V-Ziclus GP. The V-Ziclus GP is biobased content.
Product Categories	[43%] - Gardening Supplies and Accessories
Found in Catalog	Grounds Maintenance > Gardening Supplies and Accessories Household Supplies > Gardening Supplies and Accessories
Biobased Content	Certified 46%
Product Application	PVC Garden hose
Unique Feature	A more sustainable garden hose

HOSE COMPOUND

Conclusions

- Ecolabels are available for all regions of the world and various segments
- The survey demonstrated that many flexible PVC producers lack perception of the positive impacts of Ecolabels
- There is a clear opportunity that a better understanding of the process of certification might help to increase the usage of Ecolabels
- Ecolabels can serve as a marketing tool for all companies in the flexible PVC market
- Also, the use of Ecolabels in flexible PVC could improve the perception of the general public that PVC is a more sustainable product

Thank you for your attention!

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Email: jquadros@nexoleum.com

Diego Garcia-Touza
Email: dgarcia@nexoleum.com

