

BioCORTEC®

NEWSLETTER

March 2013

Revised Green Guides Help Level the Claims Playing Field

After much anticipation, the Federal Trade Commission (FTC) released its revised Guides for the Use of Environmental Marketing Claims (“Green Guides”) in October 2012. The new version contains important clarifications and additions to advance clear communications to consumers amidst the many complexities of environmental claims.

New sections to the Green Guides include certifications and seals, carbon offsets, free-of claims, non-toxic claims, renewable energy claims and renewable material claims. These revisions accurately reflect today’s packaging atmosphere and provide a helpful framework to communicate environmental attributes as we continue to see developments in renewables, non-toxics, material optimization and technology.

The FTC also addressed an important issue in the Green Guides by specifying that unqualified degradable claims may not be made for items destined for landfills, incinerators or recycling facilities. In addition, unqualified degradable claims are deemed deceptive “unless they can prove that the entire product or package will completely break down and return to nature within one year after customer disposal.” This language disqualifies most, if not all, of the plastic degradable additive claims in the market today.

One of the most anticipated additions to the Green Guides is the clarification of recyclable claims. Many, including the Sustainable Packaging Coalition (SPC), have lobbied for the FTC to specify the percentage of the population that has access to recycling, which determines when an unqualified recyclable claim can be made. The FTC now has set the number for “sustainability majority” at 60 percent. This is congruent with the with the “Widely Recycled” category of the SPC’s How2Recycle Label, an on-packaging recyclability labeling system currently nearing the end of its soft launch.

According to the Green Guides, items below 60 percent access must have qualifiers that “vary in strength depending on facility availability.” The text contains some helpful examples, but the line is much less clear given that the FTC has removed “significant percentage” language. The How2Recycle Label addresses this by setting the cut-off for the “Check Locally” labels, which is considered a qualified claim at 20 percent. Thus a product must have 20 percent of higher access to use that label. Packages between 20 and 60 percent access encourage action through the “Check Locally” language with the required qualifier of “not recycled in all communities.”

The Green Guides also address multiple components by cautioning against unqualified recyclable claims on items with components known to inhibit recycling. In addition, any item that is otherwise made from a recyclable material but treated, formed or sized in a way that prohibits recycling must also not receive a recyclable claim.

Perhaps most importantly, the revisions state that “it is deceptive to misrepresent, directly or by implication, that a product, package, or service offers a general environmental benefit.” This means that a broad claim like “eco-friendly” would be deceptive without qualifiers. Noticeably, no guidance is offered for the term “sustainable” though it is included in the Canadian version, which says, “At this time there are no definitive methods for measuring sustainability or confirming its accomplishment. Therefore, no claim of achieving sustainability shall be made.” While the revisions are helpful, “sustainable” is increasingly misused and the FTC missed an opportunity by not aligning this important facet of environmental marketing claims. We hope this will be included in the future.

Excerpted from Packaging Digest, November 2012

Waste Issues Spur Bag Bans in Southeast Asia

Southeast Asia is seeing more calls to ban plastic bags, and Lilia Casanova has a front-row seat to the debate in the Philippines. Casanova, a board member of the Solid Waste Management Association of the Philippines, said she does not agree with the local governments in her country that have banned or restricted bags. But she said she understands the motivation. Bags get blamed for contributing to environmental problems such as clogged drains, street flooding and harming marine life, she said. "I understand the problem. In metro Manila, every time it rains the streets are flooded," said Casanova, who wrote an essay in May for the Asian Scientist Magazine titled "Don't Ban Plastic Bags, Use Them Wisely."

She believes the bag bans demonstrate that Asia, with a few exceptions, comes up short in managing solid waste. It's a hot topic. Environmental groups in the Philippines last month called for extending the patchwork of local bans nationwide. The government in Vietnam's largest city, Ho Chi Minh, in May said it wanted to ban free plastic takeout bags. And Malaysia last year began a nationwide one-day-a-week ban on free bags in most stores. One local government there, in Penang, took it a step further with its own seven-day-a-week ban.

Bag ban advocates in Southeast Asia say growing wealth and more people are leading to more trash. Malaysia, for example, has seen its waste generated go from 37 million pounds in 2002 to 55 million pounds today and likely 66 million pounds by 2020, with 95 percent sent to landfills, according to government figures. The reason is "greater economic growth, high population and affluent lifestyles," according to the written text of a Malaysian government minister's presentation to a plastics industry event in June.

But bag-ban advocates say a lack of government attention to waste and recycling is also a problem. Plastic bags contribute to flooding in Malaysia, with flash floods made worse by drains clogged by debris, silt and other byproducts of development, said Anthony Tan, executive director of the Centre for Environment, Technology and Development, Malaysia, which wants to expand the once-a-week bag ban. "They cannot afford to have plastic bags clog up their drainage system," said Tan, who said the flooding closed schools in one nearby city in recent months. "It is not solely because of plastic bags, for sure... [but] the misuse of plastic bags accelerates environmental devastation."

Nithi Nesadurai, president of the Environmental Protection Society Malaysia, said the "staggering" volume of bags is visual pollution, and there's concern they are not biodegradable. "There is a general excessive use of packaging in society," he said. The seven-day-a-week ban in the Malaysian state of Penang has worked and should be expanded nationwide, he said: "This is a very successful case where the use of disincentives for the environment, like payment for plastic bags, leads to a positive change in behavior."

The Malaysian Plastics Manufacturers Association says the problem is littering, not plastic bags or even plastic. "Littering causes a danger of clogging drains and flooding, and that by itself is an issue we recognize. But more important, if it doesn't clog the drains it becomes marine litter in the ocean," said MPMA President Lim Kok Boon. "The issue to address is not about banning plastics but about addressing littering." MPMA in June launched an anti-littering campaign and has other efforts in schools to promote reducing consumption, reuse and recycling.



Malaysian industry officials believe plastics get unfairly targeted as a major use of resources. Plastics in all uses, not only bags, consume about 4 percent of the world's oil, compared with more than 40 percent for transport, MPMA said. And when plastic bags are stacked up against other packaging in a life-cycle analysis, the picture is complicated, Lim said. He cited a 2011 U.K. government study that found that the energy used to make a cotton bag means it would have to be reused 131 times to equal the carbon footprint of one plastic bag used once. A paper bag would have to be reused three times. The study has been withdrawn pending a legal challenge.

Still, one retailer in Malaysia sees abandoning plastic bags as a step toward saving resources. When Ikea Malaysia announced in mid-2011 it would go beyond the national law and become the first store there to stop using the bags altogether, it said it wanted to change consumer habits. "Ikea Malaysia will stop offering plastic bags to its customers, as plastic bags are harmful to the environment," the company said in a statement. "We hope to ignite a change in the general attitude towards plastic bags usage and encourage a new habit of carrying a reusable bag wherever we go. This will hopefully help consumers understand the importance of conservation of resources." Bag-ban supporter Tan said plastics, as a non-renewable resource, should be used in products that last a long time, such as insulation in housing, rather than short-lifespan products like bags.

The bag ban is part of a larger strategy to reduce consumption and slow climate change, he said. Malaysia's government said its dependence on landfills will increase carbon dioxide emissions by 50 percent by 2020, so it advocates reducing waste going to landfills by 40 percent. Both industry and environmental groups seem to agree on the need for stronger waste-collection systems. For some places, that will not be so easy, Casanova said. Malaysia is better positioned than most of its neighbors because it's wealthier, she said, and the government there plans in September to start weekly collection of recyclables from households. But in less-wealthy countries like Cambodia and Laos, it's more "problematic," she said.

Casanova, who formerly was deputy director of the U.N. Environmental Program's International Environmental Technology Center in Japan and now is executive director of the Center for Advanced Philippine Studies in Quezon City, said she believes bans cover up for a lack of sound government policy. "A total ban on plastic bags will only gloss over the lack of an effective environmental management policy in a given country," she wrote.

*Excerpted from **Plastics News**, August 2012*

U.S. Demand for Bioplastics to Exceed 550M lb in 2016

U.S. demand for bioplastics is forecast to climb at a 20% annual pace through 2016 to 550 million pounds, valued at \$680 million. Although they have achieved a considerable degree of commercial success, bioplastics remain in an early stage of development, representing only a small niche within the overall plastics industry. Going forward, technical innovations that enhance the properties of bioplastics and lower their price will drive growth. These and other trends are presented in "Bioplastics," a new study from The Freedonia Group, Incorporated.

Although biodegradable resins accounted for the vast majority of bioplastics volume in 2011, the emergence of non-biodegradable bioresins will dramatically alter the market landscape going forward. By 2021, these materials will represent more than two-fifths of volume demand, up from 1% in 2011. Growth will be propelled by large-volume production of bio-based polyethylene, as well as the eventual commercialization of bio-based PET, polypropylene, and polyvinyl chloride. Since these resins are chemically identical to their conventional counterparts, market acceptance is forecast to occur at a rapid rate. Among these bio-based plastics, PET is projected to offer significant growth potential over the longer term, particularly as large corporations—especially those in the soft drink industry—are investing heavily in the development of this material.

Polylactic acid is expected to remain the most extensively used resin in the bioplastics market through the forecast period, despite issues regarding the inability of biodegradable products such as PLA to decompose in landfills and their potential to contaminate the recycling stream. Advances will be promoted by a widening composting network and greater processor familiarity, as well as ongoing efforts to diversify PLA feedstocks, as critics cite the food versus fuel debate and the energy- and pesticide-intensive nature of corn production as a key drawback of biopolymers.



Bio-based polyethylene PE, which entered the market in 2010, is expected to offer the best opportunities for growth through 2016, increasing rapidly from a small base. These exceptionally strong gains are predicated on the expansion of production capacity, which will reduce prices and enable this resin to compete more effectively with its petroleum-based counterpart. "Bioplastics" is available for \$4,900 from The Freedonia Group. For further details, please contact Corinne Gangloff by phone 440/684-9600, fax 440/646-0484 or e-mail.

Excerpted from Packaging World, July 2012

Study Finds Ingeo Biopolymer Stable In Landfills With No Statistically Significant Quantity of Methane Released

A peer-reviewed article appearing in the journal of Polymer Degradation and Stability concludes that Ingeo biopolymer is essentially stable in landfills with no statistically significant quantity of methane released. This conclusion was reached after a series of tests to ASTM D5526 and D5511 standards that simulated a century's worth of landfill conditions.

"This research is the latest in a series of NatureWorks initiatives aimed at understanding and documenting the full sustainability picture of products made from Ingeo," said Marc Verbruggen, president and CEO, NatureWorks. "We work with a cradle-to-cradle approach to zero waste. What this means in terms of landfill diversion, for example, is ideally that Ingeo foodservice ware would be composted in order to enable the landfill diversion of a food-residual stream, and that Ingeo resins and fibers would be mechanically or chemically recycled and not landfilled. However, these systems are still emerging and developing. The reality today is that a percentage of Ingeo products end up in landfills. And now we can say with certainty that the environmental impact of that landfilling, in terms of greenhouse gas release, is not significant."

Conditions in landfills can vary considerably by geography, management practices, and age of waste. As a result, researchers Jeffery J. Kolstad, Erwin T.H. Vink and Bruno De Wilde, and Lies Debeer of Belgium-based Organic Waste Systems performed two different series of tests spanning a broad spectrum of conditions.

The first was at 21 °C (69.8 ° F) for 390 days at three moisture levels. The first series did not show any statistically significant generation of biogas, so the team decided to push the stress tests to a higher and more aggressive level and instituted a series of high solids anaerobic digestion tests. Today, some landfills are actively managed to act as "bioreactors" to intentionally promote microbial degradation of the waste, with collection and utilization of the by-product gas.

To capture this scenario, the second series of tests were designed to simulate high solids anaerobic digestion under optimal and significantly accelerated conditions and were performed at 35 ° C (95 ° F) for 170 days. While there was "some" biogas released in this aggressive series of tests, the amount released was not statistically significant according to the peer reviewed research paper. Both series of tests were designed to represent an examination of what could happen under a range of significantly accelerated anaerobic landfill conditions and were roughly equivalent to 100 years of conditions in a biologically active landfill.

Excerpted from Flexible Packaging Magazine, October 2012



Cortec® Featured Environmentally Friendly Product:

MCI® CorteCure®

Introducing MCI® CorteCure® from Cortec® Corporation, a multi-function water-based, membrane-forming, concrete curing and corrosion-inhibiting compound containing Cortec's Patented Migrating Corrosion Inhibitor (MCI®). MCI® CorteCure® is the newest environmentally responsible way to aid in the proper curing of concrete while, at the same time, promoting strength and durability by providing corrosion protection to the embedded reinforcement. It is made from biobased renewable materials and contains a fugitive dye to assist in the proper application coverage without staining concrete surfaces.

MCI® CorteCure® is formulated to provide a safe, non-flammable, convenient, and easily applied initial cure for all newly worked concrete. It is a USDA Certified Biobased Product and VOC-compliant per European and Californian regulations. MCI® CorteCure® is degradable and will flake off after 4-8 weeks exposure to UV and traffic abrasions, allowing subsequent treatment such as tiling, paint, or sealer. Steel-reinforced concrete bridges, highways, and streets exposed to corrosive environments (carbonation, de-icing salts, and atmospheric attack), buildings and foundations of all types, marine concrete structures, as well as the restoration and repair of all reinforced concrete structures will benefit from this product. Protect your new or old project from premature or excessive drying, temperature extremes, and damage by promoting proper cement hydration with MCI® CorteCure®.



Cortec® NSF International approvals

Founded in 1944, NSF International is committed to protecting and improving human health on a global scale. NSF International is an independent, not-for-profit organization that provides standards development, product certification, auditing, education and risk management for public health and the environment. Manufacturers, regulators and consumers alike look to NSF International for the development of public health standards and certification that help protect the world's food, water, health and consumer products.

NSF International was founded from the University of Michigan's School of Public Health as the National Sanitation Foundation to standardize sanitation and food safety requirements 66 years ago. The transparent, consensus-based process established to develop NSF International's first standards regarding the sanitation of soda fountain and luncheonette equipment, became the process by which NSF International developed other public health and safety standards. To date, NSF has developed more than 75 public health and safety American National Standards. As NSF expanded services beyond sanitation and into new international markets, the name was changed to NSF International in 1990. NSF continues to provide services in the areas of food, water, environment and consumer products.

NSF International is an accredited, third-party certification body that tests and certifies products to verify they meet these public health and safety standards. Products that meet these standards bear the NSF Mark, which is respected by consumers, manufacturers, retailers and regulatory agencies at the local, state, federal and international level.



Nonfood Compounds
Program Listed (Category Code)
(Registration #)

NSF International approvals:

VpCI®-422:

for the use in the food plant as a rust remover

M-533FG:

as an anticorrosion additive to the oils used in the food plant on machinery (gear oil, hydraulic oil, etc) for incidental contact with food (H-1 rating).

Cortec® and Cortec Biotechnology™ Pass ISO Audits with No Non-Conformances

Both Cortec® Headquarters (CHQ) and Cortec Biotechnology™ passed their ISO audits in January. CHQ went through 3 days of auditing to achieve recertification of ISO 14001 for Environmental Management Systems, while Cortec Biotechnology™ succeeded in their surveillance audit of their ISO 9001 Quality Management System.

CHQ's effective environmental management initiatives provide assurance that our environmental impact is being monitored to control our effect on the environment and constantly improve our environmental performance.

Cortec Biotechnology™ has been enhancing their system for continuous development. They have been using the eight quality management principles (listed below), on which the ISO standards are based, as a framework to guide their organization toward improved performance

- Customer focus
- Leadership
- Involvement of people
- Process approach
- System approach to management
- Continual improvement
- Factual approach to decision making
- Mutually beneficial supplier relationships



Cortec® Biotechnology

Introducing Cortec® Biotechnology, the newest subsidiary of Cortec® Canada that will be responsible for global research, marketing, and sales of Bionetix® International products as well as products based on biotechnology developed by Cortec® Corporation and its other divisions and subsidiaries. This new entity, based in Montreal, represents a competitive technology platform for expansion into worldwide markets for wastewater treatment, bioremediation, and agriculture products. Montreal with its diverse infrastructure is a major world hub for biotechnology, which provides a distinct advantage for this new endeavor. Cortec® Biotechnology will lay the groundwork for building and strengthening strategic alliances and relationships.

One of the first and most important initiatives for expanding Cortec's biotechnology platform is research. Through a collaborative effort with our Montreal neighbor, McGill University, joint projects and testing have already begun. Boris Miksic, Cortec's President/CEO said, "We are creating new opportunities to secure a greater share of the world's bio-economy through investment and economic output in biotechnical research. We plan to utilize Cortec's commitment to Eco-technology, innovation, sustainability, and collaboration to accomplish this goal." For more than 185 years McGill has been Canada's foremost research and teaching institution around the world. They have maintained their ranking among the top 20 universities globally, and as Canada's top university, for nine consecutive years.



A View of Biopolymers:

Packaging R&D technologist Greg Roskos of Heinz talks about what he sees coming in the world of biopolymers

What are your thoughts on compostability?

It's a difficult subject. Many of the conversations I'm hearing revolve around the definition of compostability. Is the goal to wind up with something that is denatured back into the soils or something that is broken down in millions of little pieces that don't quite make it back into the soil? I think it needs to be denatured and go back into the soil. But this is a conversation that will go on for awhile, a conversation among manufactures, government, and consumers.

—Pat Reynolds

Excerpted from Packaging World, August 2012

Cortec Biotechnology™ Available in Europe

Cortec Biotechnology™; headquartered in Montreal, Canada is a wholly owned subsidiary of Cortec® Corporation in the business of manufacturing microbial based bio-products. It is comprised of solid, proprietary technologies to produce biological waste treatment products that are used in thousands of applications and various industries throughout the world.

The purpose of Cortec Biotechnology™ products is to degrade target substances in waste systems by using natural methods and develop environmentally safe manufacturing and disposal processes. Capability of microorganisms to transform pollutants and synthetic chemicals into sources of energy and raw materials for their own growth proves that expensive chemicals can be replaced with biological processes that are lower in cost, more efficient, and perfectly safe for the environment!

Our integrated resources will provide customers with unique benefits of remediation and bioaugmentation. Bacteria used in the Cortec Biotechnology™ line of products degrade more complex chemicals along with higher volumes of waste materials. With this acquisition, Cortec® is strengthening its position in the marketplace as leader in the field of modern green technologies and development of environmentally safe solutions for every facet of industry. Cortec®/Cortec Biotechnology™ alliance is a wonderful opportunity for our teams to focus on market needs, scientific collaborations, and providing anyone from household to manufacturing with the best quality bio-products on the market.



Bionetix® Featured Environmentally Friendly Product:

DEL 2002

An Organic Salt That Performs Like an Acid.

In the past, facilities have turned to acids when they needed to remove difficult scale, rust, and calcium build-up from hard surfaces. Now, Bionetix® DEL 2002 presents a cost-effective and organic alternative to traditional acids.

DEL 2002 can replace multiple acid blends, offering both cost and performance advantages over phosphoric and citric acid as well as many other acids. Because it has no solubility limit, DEL 2002 is a perfect fit as a concentrated cleaner for use in many applications. Comprised of biological cultures and a blend of surfactants, it is strong enough to clean cement mixers and other paving equipment while still being safe for pH adjustment in pools and spas after dilution. Unlike other acid cleaners, DEL 2002 is non-fuming and non-corrosive.

Whether cleaning the grout and tile in a spa or removing grime from a locomotive, DEL 2002 is the ideal organic replacement for traditional acid cleaners.



Comprised of biological cultures and a blend of surfactants, it is strong enough to clean cement mixers and other paving equipment.

Cortec® and Commercial Product Comparison Charts

Appendix B: Rust Remover Comparison Chart

Product (Type)	Transportation	VOC	Food Certification	USDA BioPreferred	Toxicology/Ecology	pH	PPE	HMIS			Rust Removal	
								H	F	R	Steel	Iron
VpCI-429 (pH neutral)	Not Regulated	0%	No	No	Fresh and salt water fish toxicity reports available	6.5-7.0	B	0	1	0	60	120
Evapo-Rust (pH neutral)	Not Regulated	0%	No	No	Biodegradable, Non-toxic (test at 5g/kg orally in rats)	5.7-6.3	A	0	0	0	60	90
Metal Rescue (pH neutral)	Not Regulated	0%	No	No	Rat LD50: Oral > 2.85 mg/kg, Dermal > 5 mg/kg	6.0-7.5	B	0	0	0	85	>180
VpCI-422 (Citric Acid)	Not Regulated	0%	USDA & NSF (indirect contact)	92%	Biodegradable, marine toxicity data available, CEFAS certified	1.7-2.5	B	1	0	0	20	30
VpCI-423 (gel) (Citric Acid)	Not Regulated	0%	USDA (indirect contact)	91%	Fresh and salt water fish toxicity reports available	2.1-2.5	B	1	0	0	20	30
VpCI-426 (Phosphoric Acid)	UN1805, Class 8 Group III	8.9%	No	No	Fresh and salt water fish toxicity reports available	1.5-2.5	B	2	1	0	10	15
VpCI-426 Gel (Phosphoric Acid)	UN1805, Class 8 Group III	8.9%	No	No	Fresh and salt water fish toxicity reports available	1.5-2.5	B	2	1	0	10	20
Loctite Naval Jelly (Phosphoric Acid)	UN1805, Class 8 Group III	2.4%	No	No	Contains known carcinogen (sulfuric acid)	1.5-2.5	B	1	0	0	20	155
Permatex Dissolver (Phosphoric Acid)	UN3264, Class 8 Group III	2.4%	No	No	None Located	1.5-2.5	B	3	0	0	20	90

Appendix C: Rust Converter Comparison Chart

Product (Type)	Transportation	VOC	Flash Point	Toxicology/Ecology	PPE	HMIS			DFT	Salt Spray (240 hours)
						H	F	R		
Corrverter (Liquid product)	Not Regulated	3.0%	NA	No Testing Conducted	B	1	1	0	3 mils	<1% field failure
Rust-Oleum Rust Reformer (Liquid product)	ORM-D for Air and International	Not Listed	89 (°C)	Component information: Tannic Acid Rat LD50 = 5 g/kg	B	2	2	1	1.5 mils	80% field failure
Permatex Rust Treatment (Aerosol product)	Ground: Class 2.1 UN 1950 Air: Class 9 ID 8000	50.4%	Not listed	Components not classified as carcinogens	B	2	4	0	1 mil	100% field failure
Extend Rust Neutralizer (Aerosol product)	Class 2.1 UN 1950	33.1%	< -6.7 (°C)	Components not classified as carcinogens	B	2	4	2	1 mil	90% field failure

Appendix D: Rust Preventative Comparison Chart

Product (Type)	Transportation	USDA BioPreferred	VOC	Flash Point	Toxicology/Ecology	PPE	HMIS		
							H	F	R
EcoAir BioCorr (Air Powered Spray Can)	Not Regulated	64%	< 1.0%	149 °C	No Testing Conducted	B	1	1	0
EcoAir VpCI-377 (Air Powered Spray Can)	Not Regulated	No	~15% in EcoAir	101 °C	Fresh and salt water fish toxicity data available.	B	1	2	0
Dry Coat RP (Trigger Spray Bottle)	Not Regulated	No	0.0%	> 93 °C	Mobility: Air <5%, Water 30-50%, Soil 30-50%	B	2	1	0
Evapo-Rust Rust-Block (Trigger Spray Bottle)	Not Regulated	No	Not Listed	Not Listed	None Located	A	1	0	0
VpCI-325 (Trigger Spray Bottle, Oil)	Not Regulated	No	Not Listed	> 94 °C	No Testing Conducted	B	1	2	1
Ecoline 3690 (Bulk Liquid Product, Oil)	Not Regulated	76%	0.0%	250 °C	Fresh and salt water fish toxicity data available.	B	1	1	0
Ecoline 3220 (Bulk Liquid Product, Oil)	Not Regulated	99%	0.0%	100 °C	Fresh and salt water fish toxicity data available.	B	1	1	0
Rust-Oleum Rust Inhibitor (Aerosol Can, Oil)	US Ground: ORM-D Other: Class 2.1 UN 1950	No	Not Listed	< -100 °C	Isoparaffinic Hydrocarbon >25 ml/kg (Rat, Oral)	B	3	4	0



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