Cards
Films
Solutions

Bilcare Rigid PVC Films for Cards

What is SICOECO?

SICOECO is a rigid PVC film produced with an additive making it degradable.

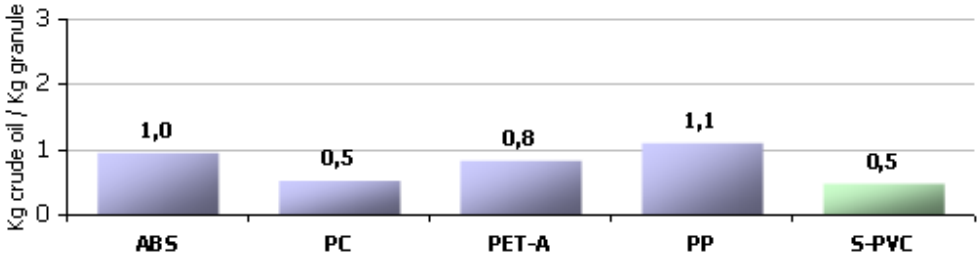
About PVC

PVC is a plastic made of **sea salt (57%)** and 43% crude oil.
It is less dependent from oil than any other plastics

43% oil + 57% salt = PVC

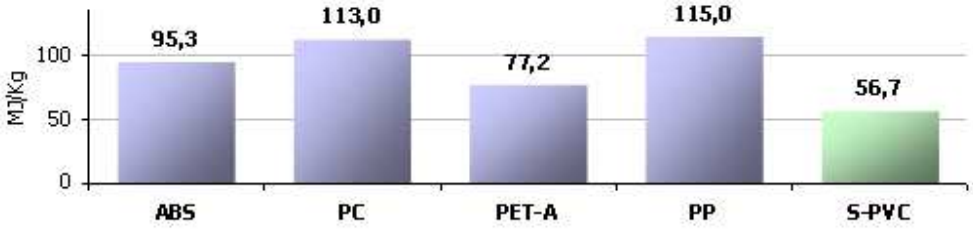
Gross primary fuels – crude oil in Kg required to produce 1 kg of polymer

Less crude oil consuming



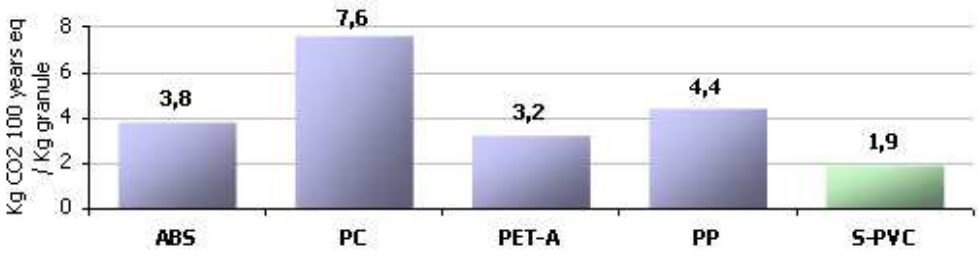
Gross Energy in MJ required to produce 1 kg of polymer

Less gross-energy



Gross air emissions associated with the production of 1 kg of polymer Kg CO_2 100 years eq

Less impacting on global warming



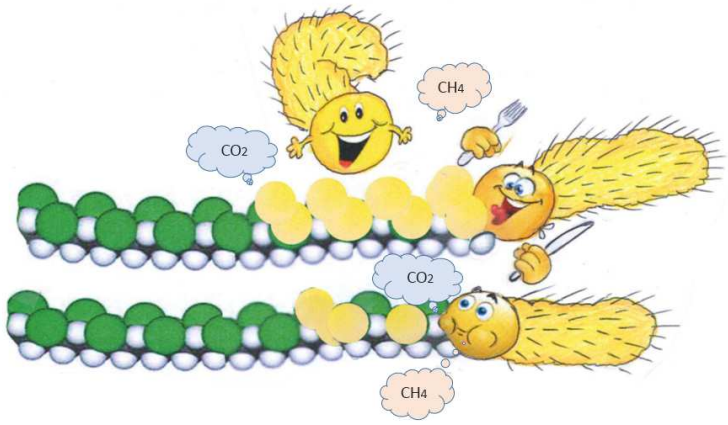
Sources Boustead, Plastics Europe Eco Profiles

As per
08/2013

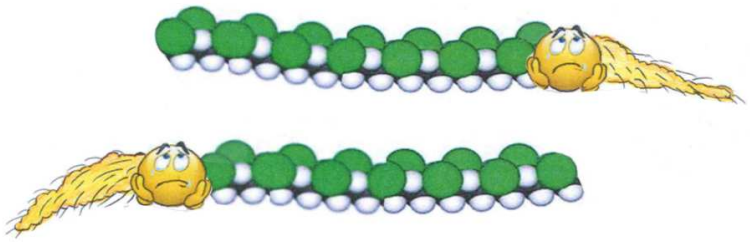
SICOECO properties

SICOECO has the same technical properties, physical characteristics and excellent printability like all other PVC films supplied by Bilcare and it does not require any change in customer processes: same lamination conditions, same printing parameters.
If SICOECO is left in organic compost, it degrades.
The additive accelerates the degradation of treated plastics in microbe rich environments, such as a biologically active landfill. It attracts microbes to the product allowing them to colonize on the surface of the plastic. Once the microbes have colonized on the plastic, they secrete acids that break down the polymer chain. Microbes utilize the carbon backbone of the polymer chain as an energy source and utilize plastic as food.

How does it work?



SICOECO



STANDARD PVC

Degradation test

The degradation test according to Method **ASTM D5511** – Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic-Digestion Conditions was carried out by Northeast Laboratories, Inc. on SICOECO film.
The following test conditions were used:
Organic Compost –New Milford Farms, New Milford, CT
Mattabasset Waste Treatment Facility Anaerobic Digestion

Solid Content	22%
pH	8.2
Volatile Fatty Acids	0.7 g/kg
Ammonia Nitrogen	1.0 mg/kg
Volatile Solids	24.9 %

Procedure:

1. Three weighed replicates of the test material were prepared by placing them into 1000 grams of inoculum in containers, which were then attached to the gas measuring devices. Incubation temperatures of 52 ± 2°C were maintained by placing the containers in temperature controlled incubators.
2. Three blanks containing only inoculum, were prepared as described in (1) above, as were three positive controls each containing 20 grams of thin layer grade cellulose. Three negative controls were also run utilizing untreated samples supplied by Northeast Laboratories.

3. Samples were incubated for sixty days in the dark, or at times, diffused light. Daily, gas volumes were determined. Carbon Dioxide and Methane concentration were also determined. Temperature and room atmosphere pressures were monitored during the course of incubation.

Results: (avg of 3)	Gaseous Carbon Recovered	Theoretical Grams	(%) Biodegradation **Days 1-45**
SICOECO	0.72	9.61	**7.49 %**
Negative Control (PE)	0	21.4	0 %
Positive Control	8.56	8.8	97.3 %

Results: (avg of 3)	Gaseous Carbon Recovered	Theoretical Grams	(%) Biodegradation **Days 1-60**
SICOECO	0.92	9.61	**9.57 %**
Negative Control (PE)	0	21.4	0 %
Positive Control	7.81	8.8	88.8 %

SICOECO films **can be recycled** into reusable material as well as to win back new energy.
PVC **can be incinerated** under controlled conditions, like all plastics.
Waste-to-energy recycling is carried out in state-of-the-art household waste incinerators.

For any additional information regarding the recycling of PVC or for the addresses of PVC recycling companies please log on: **www.recovinyl.com/certified_recyclers**

Bilcare is an active member of VinylPlus – The Voluntary Commitment of the European PVC industry is a 10 year programme to enhance sustainability of its product and production over the full life cycle.

For more information please log on to: **www.vinylplus.eu**

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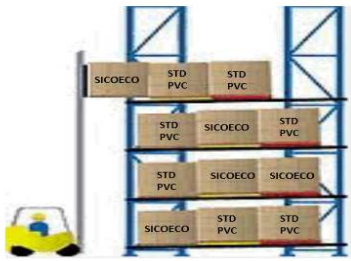
Storage conditions

Shelf-life: max **12 months** from make-date (shown on the label).

Storage conditions are the same as standard PVC films: to be stored in the original packaging at temperatures >15°C up to 30°C (>59°F up to 86°F) and 40-60% max relative humidity. Avoid the exposure to moisture and direct sunlight.



Re-wrapping of already used material to avoid dust and sun light.

Conditioning 24-48 hours before using at room temperatures (15-30°C / 59-86°F).

Stock rotation is recommended.

Suitability test for purpose after that period is strongly recommended.

No special transport conditions are needed

Bilcare Research

As per
08/2013

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