



# BIOAQUALIFE

Presented By Solent Group

”

I want to say one  
word to you, Benjamin...  
Just one word -

**Plastics!** „



## PLASTICS FACTS

Filtered cigarettes contain cotton and plastic. The 360 billion cigarettes smoked in the United States in one year translates to 135,000,000 pounds of discarded butts

By 2020, the average car will incorporate nearly 770 lbs of plastics, up from 440 lbs in 2014

90 percent of the table salt brands sampled worldwide contain microplastics

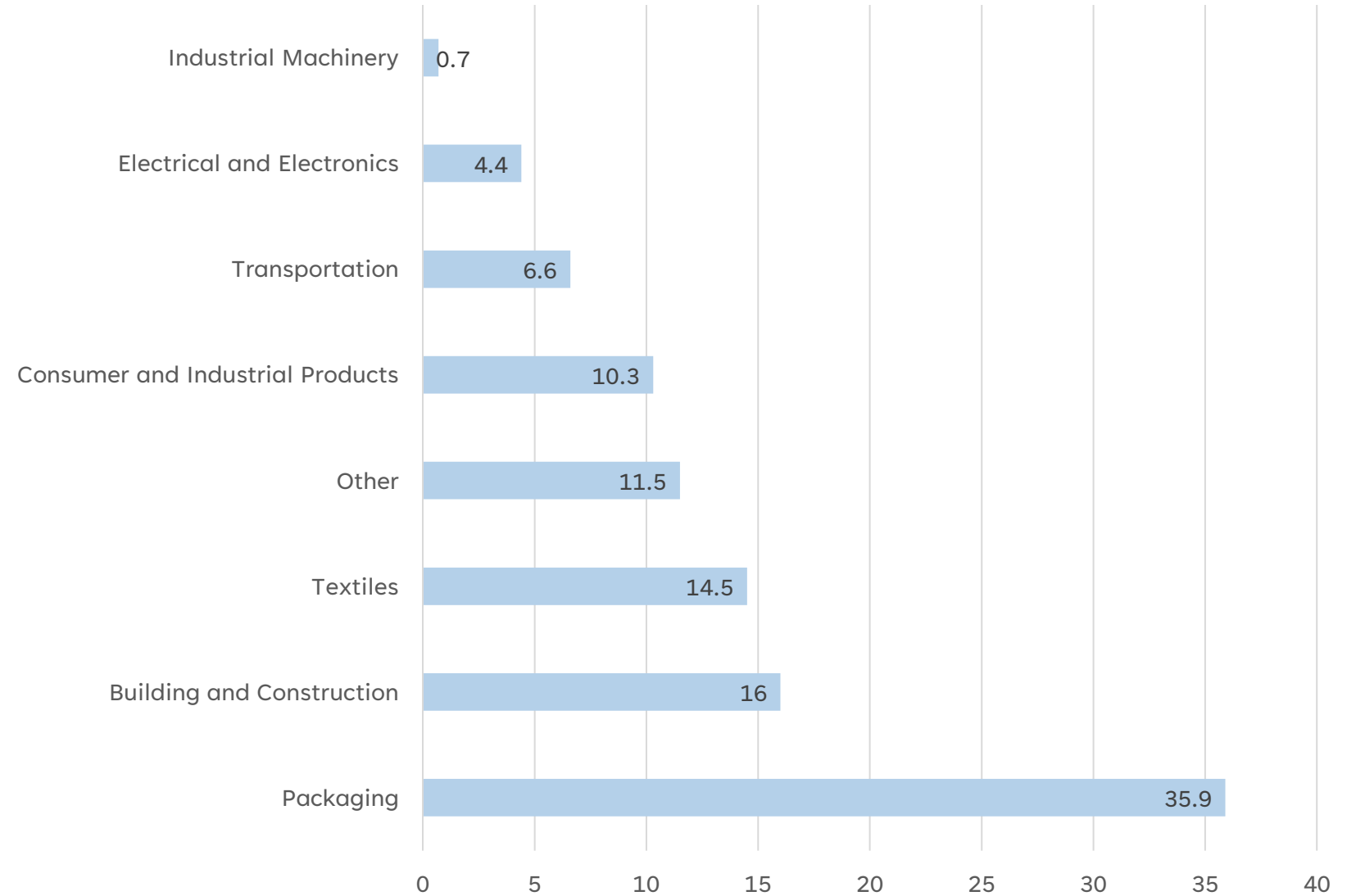
About 60% of all the material in clothing is made from plastic



Chewing gum contains plastic – and does not biodegrade

## PLASTIC PACKAGING

Chart:  
The Conversation, DD-BY-ND  
Source:  
Science Advances (2017)





**91%** Of all plastics end up  
**IN A LANDFILL**

## SOLUTION

**WE HAVE DEVELOPED A LINE OF PLASTICS  
WHICH ARE: RECYCLABLE, BIODEGRADABLE  
AND AFFORDABLE**

Currently we manufacture ULD Covers & all types of poly/plastic sheets & bags validated by an ongoing program of rigorous and highest quality laboratory testing.

Part of bioaqualife used material get systematically recycled and incorporated into virgin material, thus contributing to the global circular economy effort.

## BOAT WRAP

Infused with a blend of organic material, these plastics are specifically designed to biodegrade under landfill conditions

Bioaqualife Boat wrap has the same performance qualities as traditional Boat wrap



## MICROPLASTICS

Bioaqualife Film will not disintegrate into micro-plastic and does not require heat, light or oxygen to biodegrade. Instead, it decomposes into food for bacteria...

(unlike PLA or plastics made with oxo-biodegradable additives)

Disintegration and fragmentation are forms of degradation.

**But they are not biodegradation!**



# COMPARATIVE



|                     | IMPACT                           | RECYCLABLE                          | NO TOXIC RESIDUES                   | SHELF LIFE | TEMPERATURE TOLERANCE               | FOOD CONTACT SEFETY                 | BIODIGRADE IN LANDFILL |
|---------------------|----------------------------------|-------------------------------------|-------------------------------------|------------|-------------------------------------|-------------------------------------|------------------------|
| bioaqualife Film    | Bio Degradable                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Indefinite | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 5-10 Years             |
| Traditional Plastic | NOT Bio Degradable of Degradable | <input type="checkbox"/>            | <input type="checkbox"/>            | Indefinite | <input type="checkbox"/>            | <input type="checkbox"/>            | 500-1,000 Years        |
| PLA Degradable      | Application Dependent Degradable | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Limited    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 500+ Years             |
| OXO Degradable      | Degradable                       | Not Sure                            | <input type="checkbox"/>            | Limited    | <input type="checkbox"/>            | Application Dependent               | 500+ Years             |

# ASTM D5511 FOR BIOAQUALIFE FILM SAMPLES IN 793 DAYS



|                                    | INOCULUM | NEGATIVE | POSITIVE | 2637<br>BIOAQUALIFE MAX80<br>HIGH PERFORMANCE<br>MACHINE STRETCH WRAP | 2638<br>BIOAQUALIFE 16”<br>PRE-STRETCH<br>HANDHELD STRETCH<br>WRAP |
|------------------------------------|----------|----------|----------|-----------------------------------------------------------------------|--------------------------------------------------------------------|
| Cumulative Gas Volume (mL)         | 1,733.7  | 1,604.1  | 9,128.1  | 14,606.9                                                              | 13,935.9                                                           |
| Percent CH <sub>4</sub> (%)        | 43.5     | 41.6     | 37.5     | 53.7                                                                  | 52.9                                                               |
| Volume CH <sub>4</sub> (mL)        | 754.5    | 666.7    | 3420.5   | 7843.0                                                                | 7,369.1                                                            |
| Mass CH <sub>4</sub> (g)           | 0.54     | 0.48     | 2.44     | 5.60                                                                  | 5.26                                                               |
| Percent CO <sub>2</sub> (%)        | 39.6     | 38.8     | 43.5     | 35.7                                                                  | 35.9                                                               |
| Volume CO <sub>2</sub> (mL)        | 686.8    | 622.5    | 3,973.3  | 5,209.3                                                               | 5,007.7                                                            |
| Mass CO <sub>2</sub> (g)           | 1.35     | 1.22     | 7.80     | 10.23                                                                 | 9.84                                                               |
| Sample Mass (g)                    | 10       | 10       | 10       | 20.0                                                                  | 20.0                                                               |
| Theoretical Sample Mass (g)        | 0.0      | 8.6      | 4.2      | 17.1                                                                  | 17.1                                                               |
| Biodegraded Mass (g)               | 0.77     | 0.69     | 3.96     | 6.99                                                                  | 6.63                                                               |
| Percent Biodegraded (%)            |          | -1.0     | 75.6     | 36.3                                                                  | 34.2                                                               |
| * Adjusted Percent Biodegraded (%) |          | -1.3     | 100.0    | 48.0                                                                  | 45.2                                                               |

\* Outside of the ASTM D5511 method and on the assumption that the positive control (Cellulose) will fully biodegrade, all value has been proportionally adjusted.

## THE SCIENCE

Organic compounds added to bioaqualife Plastic target micro-organisms capable of processing petroleum molecules.

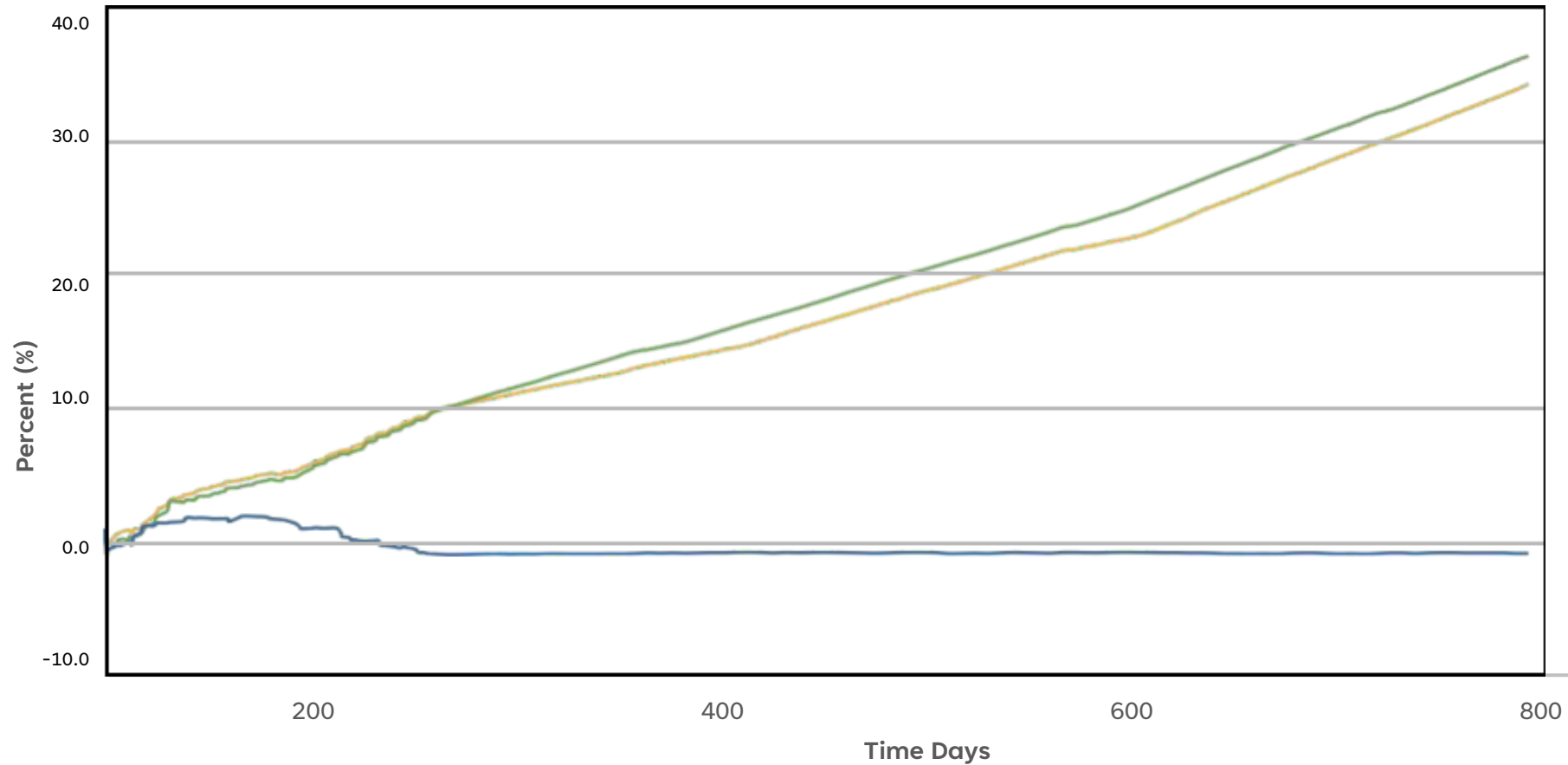
In a landfill or composting environment, they are consumed by the micro-organisms and converted into soil and natural gasses.

bioaqualife Plastic has an indefinite shelf life (it will not begin to break down until it is disposed of in a landfill).

Products made from bioaqualife Plastics OUT-PERFORM regular plastics at the same mil thickness with better elongation and puncture resistance!



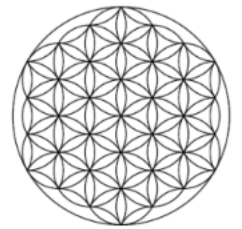
# BIODEGRADATION



NEG

2637 - bioaqualife MAX80 High Performance Machine Stretch wrap

2638 - bioaqualife 16" pre stretch Handheld Stretch wrap



Eden Research Laboratory  
2412 Princeton NE, Suite E  
Albuquerque, NM 87107

# BIOAQUALIFE FILM STANDARDS



**bioaqualife Film has been tested to biodegrade according to the following standards:**

**ASTM D5511** - Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic-Digestion Conditions (44% biodegradation in 934 days under anaerobic (landfill) conditions. Actual rate of biodegradation will vary dependent upon specific environmental conditions.)

**ASTM D5526** - Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under Accelerated Landfill Conditions (36.6% biodegradation in 391 days under landfill conditions. Actual rate of biodegradation will vary dependent upon specific environmental conditions.)

**bioaqualife Film complies with the requirements of the following rules and specifications:**

**US Federal Trade Commission (US FTC) 16 CFR Part 260 section 260.8** - (GUIDES FOR THE USE OF ENVIRONMENTAL MARKETING CLAIMS)

**ISO 14021:2016** - Environmental Labels and Declarations

**ISO 15985:2014 Plastics** - Determination of the ultimate anaerobic biodegradation under high-solids anaerobic-digestion conditions (ISO 15985 testing is equivalent to ASTM D5511 testing)

**US Food & Drug Administration (US FDA)** – Additive generally regarded as safe according to the specifications set out in 21 CFR 177.1630 and 21 CFR 177.1520

**TRULY  
BIODEGRADABLE**

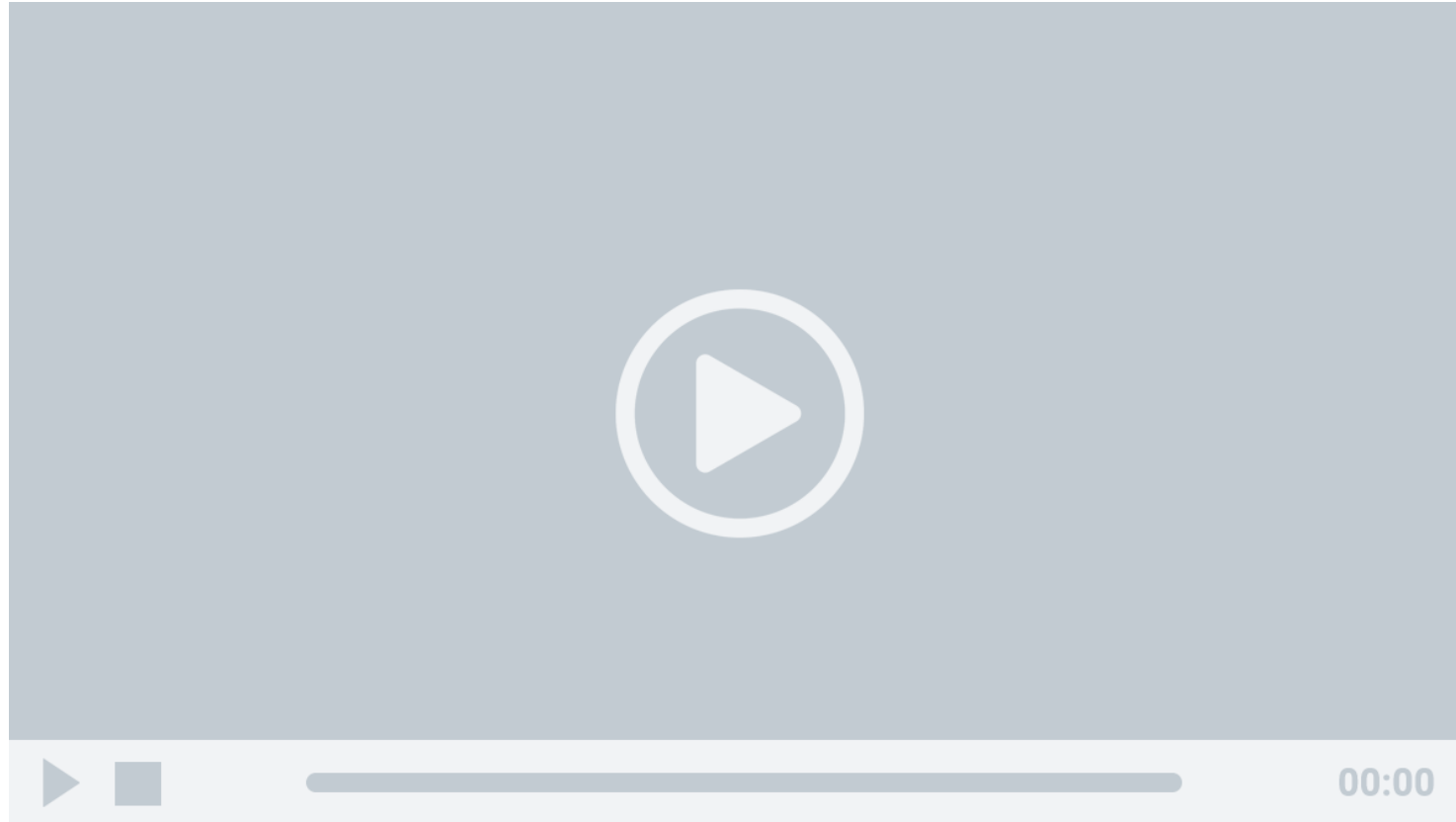
bioaqualife Film has demonstrated in laboratory testing to be truly biodegradable in a landfill (ASTM D5511 & ASTM D5338)

bioaqualife Film will biodegrade in a matter of years.

Regular plastics sit in a landfill for hundreds of years or longer!



## VIDEO PRESENTATION



Please Click Above Image to View Video Presentation

## BIOAQUALIFE FILM CURRENT KEY ACCOUNTS:



**All major airlines and  
cargo carriers**



[www.bioaqualife.com](http://www.bioaqualife.com)

**THANK YOU!**

[info@bioaqualife.com](mailto:info@bioaqualife.com)

+1 (720) 213-6023

\* LDPE Product 36.3% Biodegraded in  
793 days under landfill conditions.

