

LABEL
ACADEMY

MASTER CLASS

FLEXIBLE PACKAGING

Sustainability in Flexible Packaging

Tuesday, 9/10/2024 11:30 am – 12:00 pm

Dan Halkyard, Sr. Director Product Development

S-One Labels and Packaging



Sustainability in Flexible Packaging

Today's Topics






- S-OneLP introduction.
- The 3 life stages of sustainable flexible packaging.
- Working with mono materials and compostable and recyclable structures.
- Selling sustainability: Strategies for reducing carbon footprint.
- Staying compliant with environmental regulations.

S-One Labels and Packaging

A division of S-One Holdings Corporation.



Global provider of...

- Ink adhesion primers and WB, UV, eBeam & overprint varnish coatings.
- Thermal lamination films. 
- Flexible packaging materials: Film and paper roll stock. 
- Integrated finishing solutions.   
- Technical expertise.



Primary customers

- Digital and analog label and flexpack print providers / converters who value:
 - Low MOQ's, Fast delivery times and Innovative custom solutions.

www.SoneIp.com, Booths 1353 (Hall A) and 6385 (FlexPack Factory)



Sustainable Flexible Packaging - 3 life stages

1. Creation

- Material choices and processes.
- Examples: Choose thickness /gauge (**R**educe), mixed, recyclable or compostable material, PCR content. Sustainability vs function.
- Recyclability: APR Design Guide - <https://plasticsrecycling.org/apr-design-guide>.

2. Usage

- “One and done” or **R**eusable?
 - Flexible packaging is mostly single-use. Sustainability is focused Creation and EOL.

3. End of Life





- Landfill and Ocean avoidance.
- **R**ecycle or **C**ompost – May meet corporate goals but low actual flexpack capture rates.
 - Single digit % of flexible packaging ends up being recycled or composted.



Note: Life Cycle Assessment - assesses a product's cradle-to-cradle environmental impact. There are many LCA service providers.

Working with mono materials, compostable and recyclable structures

Working with **Mono** Flexpack Materials

- A single component package made from ~100% of one material.
 - Examples – Paper, PET ,PE, PP.  
- Not mixed plastic
 - Examples (PET/LLDPE) or (PET / EVOH / Lldpe). 
- Mono-materials have higher success rates with recycling 
 - Exceptions made for some functional coatings or additives, typically 5% max.
 - Examples: LDPE /HDPE /<5% EVOH coextrusions can be recycled as PE.
 - Although there is still a flexible packaging **identity crisis** at MRF's.
- Functionality may be limited. (Barrier properties, strength)

Working with **Recyclable** FlexPack Structures

- Best to source mono materials – PET or HDPE or PP.
- SPC How2Recycle or NextTrex Certified.
- <5% by weight of additives, co-extrusion or coating typically required to maintain easiest recyclability without excessive contamination.
- Bleached or Natural (Brown) Kraft Paper or Clear and White PE most popular.
- Still low % recovery rate – If recyclable, sorting challenge at MRF.



End of Life **Recyclable** FlexPack

- Curbside to **Municipal Recovery Facility**

- Blue Bin –paper, plastic, glass, metal.
- Bale and sell, if sortable. Water bottles easy, flexpack not so much.
- If not sortable, manual or IR optical - sent to Landfill, Energy from Waste facility or Advanced Recycler.



- SPC How2Recycle

- **Store Drop Off** – Specifies cleaned package type per bin.
- How 2 Recycle testing and certification.
- Grocery chains sell to reprocessors like TREX – repurpose into decking.
 - Testing and Certification **NexTrex**



Biodegradable Products Institute (BPI)



TÜV Austria



Compost Manufacturing Alliance (CMA)



SPC Membership & How2Recycle

Brand owners need to be members of the [How2Recycle](#) program to put the logo on their package and they need to submit the finished package to get the official approval process.

Converters need to be [SPC members](#) if they plan on marketing themselves as producing How2Recycle compliant packaging, etc. But if they are purely just manufacturing the materials and not posting that on their website or materials, they don't necessarily need to be members.

How2Recycle membership fee is based on revenue.



NexTrex

Alternative Approach

TREX is plastic composite decking company that uses recycled #2 and #4 PE-based materials to produce their products

They manage **over 70%** of the store-drop off locations

NEXTREX – a program by TREX to recycle #2 HDPE and #4 LDPE. To add their logo to a package, TREX will test and certify your package

ReTrove GreenArrow™ films have been approved by TREX, however the final package will still need to be submitted to TREX for logo use.

Recycle your Clean, Dry, Empty Plastic Bags and Film Packaging!

Plastics to Collect:

- LDPE / HDPE Films
- Newspaper Sleeves
- Bread Bags
- Product Wrap
- Cereal Liners
- Food Storage Bags
- Ice Bags
- Pellet Bags
- Produce Bags
- Dry Cleaning Bags
- Grocery Bags
- Case Overwrap
- Packaging Air Pillows
- Salt Bags

Look for bins and signage near store entrances and drop off collected plastics and wraps.



Working with **Compostable** Flexpack Structures - Creation

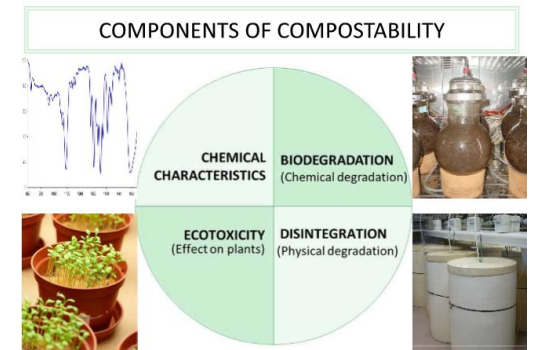
- Compostable packaging:
 - Serves as a vehicle to divert food waste from land fills or incineration, transforming it into compost while preventing food contamination of the recycling stream.
 - Examples: Tea bags, Coffee pods.
- Package Design: source certified compostable materials.
 - Commercial/Industrial or Home.
- Mono materials - limited applications. (candy wraps, produce bags).
- If duplex or triplex structures – stronger, higher functionality.
 - Thinner gauge of same design may bypass testing and be certified by default.
- Packages made from certified roll stock must be tested (and certified) to label as compostable.
 - Seals, compostable zippers, print, varnishes all impact test results.
 - Fewer test requirements if using certified component(s).



End of Life **Compost** Testing and Certification



- Testing – Use a BPI or TÜV certified lab if planning to certify package.
 - First contact the 3rd party certifier to apply and create a pre-assessment with a test protocol!
- ASTM D6400, ASTM D6868, EN13432 – Industrial composting test methods.
 - Pass 4-part test.
 - Roll stock or package specific.
- Home Compost Testing.
 - Similar to Industrial but at lower temp (ambient), longer time (26 weeks).
- Real-World testing – CMA (Windrow, Static pile, In-vessel...).
- USDA BioPreferred Program. 
- Lomi Approved™ 



Biodegradable Products Institute (BPI)



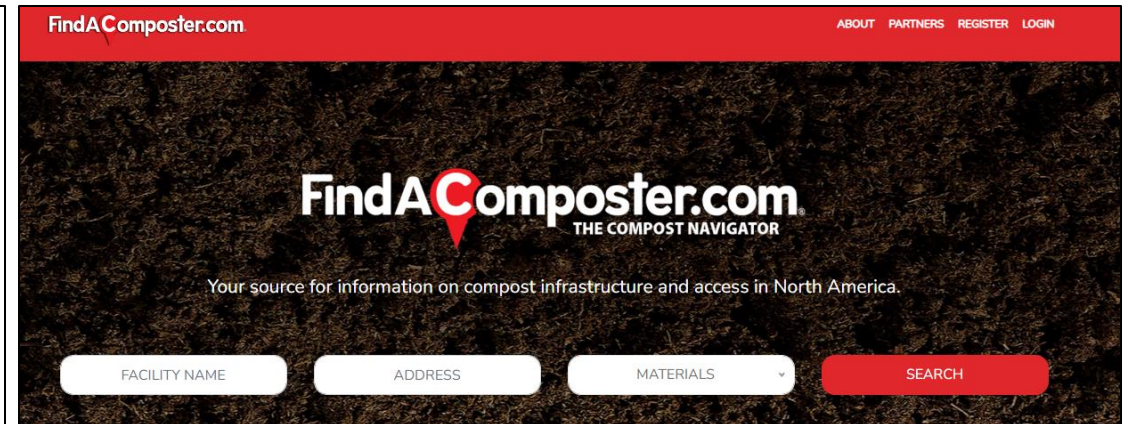
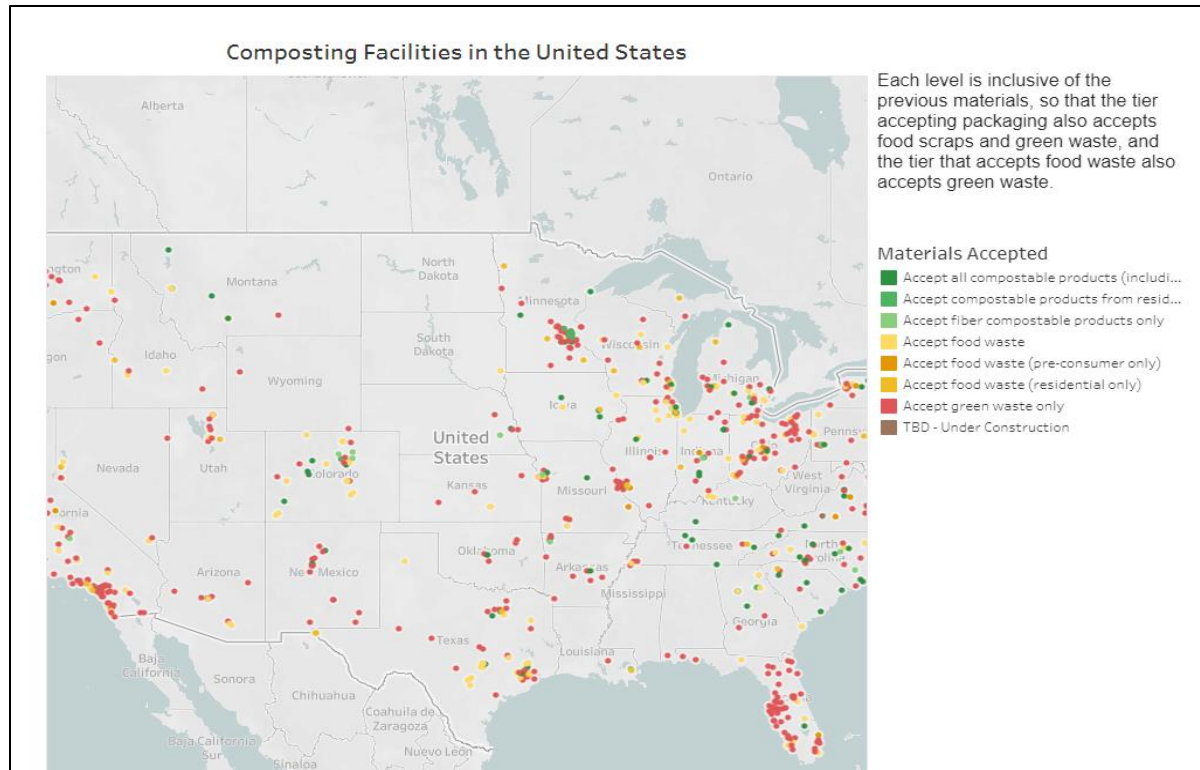
TÜV Austria



Compost Manufacturing Alliance (CMA)



EOL – Compostable Packaging. Commercial Compost Facilities.



SPC sustainablepackaging.org



Selling sustainability: Strategies for reducing carbon footprint

1. Use compostable and recyclable materials.
2. Embrace reusable packaging.
3. Use PCR content packaging.
4. When possible, use thinner gauge material.
5. Implement sustainable printing techniques.
 - Inks with low VOC's.
 - Practice energy efficiency, use renewable energy.
 - Lower your landfill waste – file management, roll widths, recycle scrap and trim.
6. Streamline your supply chain.
 - Bundle shipments, Optimize transport methods and routes.
7. Education / Collaboration
 - Employees, customers, suppliers.

Staying Compliant with Environmental Regulations

- In the USA - Federal, State, Municipal governments may have different regulations.
 - The EU has its own standards and laws.
 - California leading the charge for sustainable packaging.
- Many small to medium size packaging companies do not have a regulatory department.
- So, who can help you to navigate all of the changes?
 - Associations
 - Suppliers
 - Service Providers

Staying Compliant in CA (CalRecycle.ca.gov/packaging)

California Assembly Bill AB 1201 – 2021 Law to separate organic feedstock (bifurcation) by Jan. 2026, Compostable packaging must be certified as Organic to be labelled as “Compostable” (Industrial or Home).

- Who certifies? USDA NOP “National Organic Program”.
- What are the test standards?
- Exclusions? (“synthetics” currently include only Newspaper or de-inked recycled paper).
- BPI petition – Include materials that meet designated ASTM conditions. NOP directed USDA standards board to review.
- Related to SB1383- a 2022 law mandating residential and commercial organic waste collection.

CA SB 54 – 2023 Law – Plastic Pollution Prevention

Law to address the impact of **Single Use Plastic** packaging and food service ware by 2032. Impacts.

How? EPR vs. Consumers., Raise \$5bb over 10 yrs.

- Producers join a PRO
- Pay PRO fees
- Provide funding /services for managing products



Sustainable Packaging Resources



E- Newsletters

- **Bioplastic News**
- **Cannabis Products Insider**
- **Labels and Labelling**
- **Packaging Strategies**
- **Sustainable Packaging News**
- **TLMI**

<https://bioplasticnews.com>

www.bnppmedia.com/subscriptions

www.labelsandlabeling.com

www.packagingstrategies.com

<https://spnews.com>

tlmi.com/insight/news

Suppliers

- **S-One LP Sustainability Guide**
- **Your suppliers**

info.sonelp.com/sustainability

Sustainable Packaging Resources

Associations



- **APR: The Association of Plastic Recyclers** plasticsrecycling.org
plasticsrecycling.org/apr-design-guide
- **Beyond Plastics** beyondplastics.org
- **BPI: Biodegradable Products Institute** bpiworld.org
- **Cal Recycle** calrecycle.ca.gov/packaging
- **CMA: Compost Manufacturing Alliance** compostmanufacturingalliance.com
composterapproved.com
- **Ellen MacArthur Foundation** ellenmacarthurfoundation.org
- **Finat** finat.com
- **Find a Composter** findacomposter.com
- **FPA Flexible Packaging Association** flexpack.org
- **FTC: Greenwashing guidelines** ftc.gov/legal-library/browse/rules/



Sustainable Packaging Resources



- **GreenBlue** greenblue.org
 - **SPC Sustainable Packaging Coalition** sustainablepackaging.org
 - **How2Recycle. How2compost** <https://how2recycle.info>, <https://how2compost.com>
- **Lomi** lomi.com
- **NexTrex Store Dropoff Locations** nextrex.com
- **Packaging Legislation Monitor** industryintel.com/market-intelligence-legislationmonitor
- **The Compost Cooperative (Local)** thecompostcooperative.com
- **TLMI** tlmi.com/sustainability
- **TUV Austria** tuv-at.be/okcert
- **TUV Rheinland / Din Certco** dincertco.de/din-certco/en/
- **USDA Biopreferred** biopreferred.gov/biopreferred/
- **USCC US Compost Council** compostingcouncil.org



Sustainable Packaging Resources



How To Start A Compost Pile

1. Begin your compost pile on a patch of bare ground. This will invite useful organisms. Organisms like worms and bacteria. They will aerate the compost prior to being applied to your garden or yard.
2. First, drop some straw or hay on the chosen spot about two inches deep. This step will allow for superior aeration and draining of water.
3. Next, you will want to add multiple layers of biodegradable materials. Switching between moist and dry materials such as food waste and coffee grinds. Banana peels, wood chips, and other similar items are also good. Mix in some ash with each layer to aid in clumping.
4. Next, you will want to add some animal poo (manure). Cow manure is an excellent option for this. This step will kick start the composting process. And set you up for successful composting.
5. To ensure proper moisture levels, water your pile regularly. But, do not thoroughly saturate it. You want a moist pile, not a soaked one.
6. Cover your pile with a tarp between watering.
7. Aerate your pile by blending it with a pitchfork or shovel once every two weeks. Mix in new organic and biodegradable items. Items like food waste and biodegradable shrink film.

LABEL
ACADEMY

MASTER CLASS

FLEXIBLE PACKAGING

Questions?



dan.halkyard@sone.com

www.sonelp.com

Booths 1353 and 6385