



SUSTAINABLE

SOLUTIONS



ENTEC’S COMMITMENT TO SUSTAINABILITY

As a member of the Ravago Group, Entec is proud of its foundation in sustainability. Ravago was established as a recycling center when founder, Raf Van Gorp, saw potential in discarded products.

At Entec, we challenge ourselves to implement this novel way of thinking across our business to advocate for responsible behavior. Looking to our roots and building off of Ravago’s *Four Pillars of Sustainability: Recycling Excellence, Community Engagement, Environmental Footprint, and Strategic Partnerships*, Entec has identified its core competencies which have helped us improve our strategy.

CORE PRINCIPLES OF SUSTAINABILITY

- Solution Community
- Materials
- Development & Design
- Supply Chain
- Services

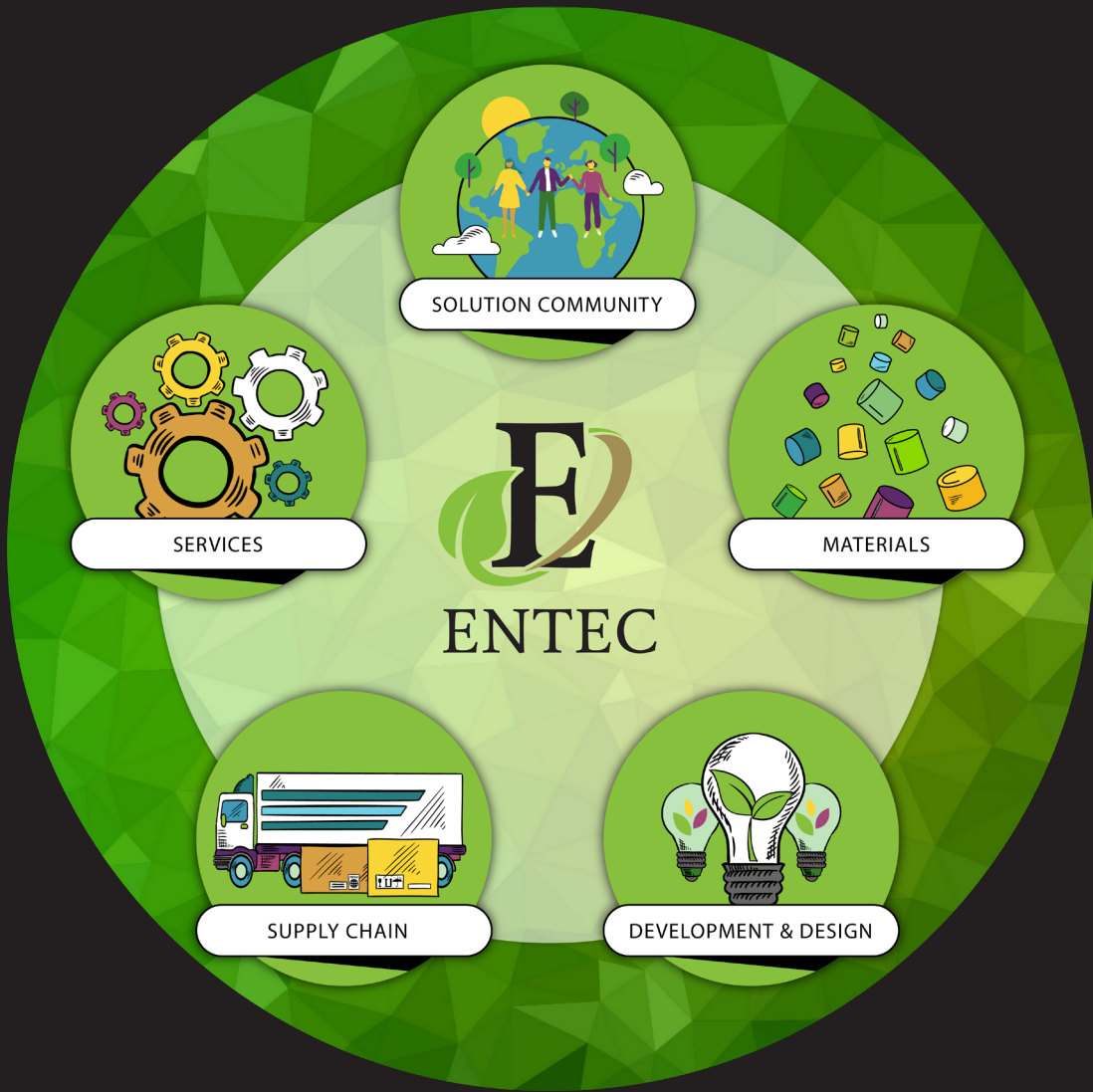
“

“The beauty of Ravago lies in the fact that the notion of sustainability is engrained in our culture, in our history, and thus in our DNA”

~ Axel Roussis
Commercial Director
Ravago Group

OUR PLEDGE

Leading and inspiring collaboration to develop comprehensive sustainable solutions in plastics distribution through our *Core Principles of Sustainability*.



As a distribution leader, we pride ourselves in collaborating for a sustainable tomorrow.

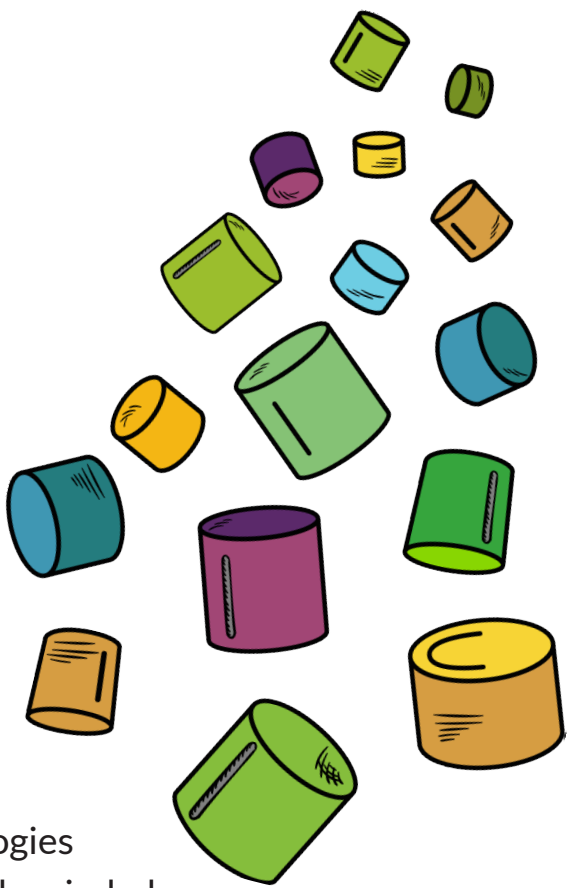
SOLUTION COMMUNITY

Plastics play an essential role in everyday life, making it safer and easier. At the heart of our sustainability mission is our group of passionate team members advocating for responsible behavior to protect the longevity of our environment. Knowing that great change cannot be achieved alone; Entec is educating and inspiring a like-minded community of employees, service providers, customers, and industry partners to take action and promote ecological stewardship. This collaboration ignites our passion to be responsible for our community behaviors and we will continue to provide plastic developments and product offerings that promote a circular economy.



MATERIALS

Valued relationships with suppliers allow us to provide our customers with innovative sustainable material options. Our line card includes recycled, bio-based, and compostable polymers. We continue to develop new innovative technologies and relationships with sustainably minded companies that provide products that meet our quality standards and help our customers achieve their sustainability targets.



PROUD MEMBERS & PARTNERS



RECYCLED MATERIALS

Corporate social responsibility, government regulation, and consumer environmental consciousness in plastic packaging are driving brand owners to rethink their long-term packaging approach to meet demanding sustainability goals. Entec’s recycled plastics include Post-Industrial Recycled (PIR), Post-Consumer Recycled (PCR) and Advanced Recycling products, offering a wide range of sustainable solutions.



Material that was generated in the manufacturing process or has not been used for its intended purpose.



Material that is generated from items that have been used for their intended purposes. This material is most often discarded from households or commercial/retail establishments.



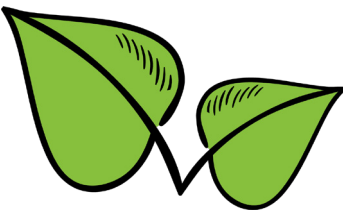
Advanced recycling also known as chemical recycling, breaks down polymer materials into their fundamental building blocks (monomers). This allows for a new polymerization of the recycled material.

RECYCLED POLYMERS

SUPPLIER	BRAND	POLYMER TYPE	RECYCLE TYPE	COLOR	PROCESSING
AMSTY	POLYRENEW®	PS	AR	NATURAL	EXTRUSION/INJECTION
BLUE POLYMERS	PCR HDPE <i>(Coming Soon)</i>	HDPE	PCR	BLACK/NATURAL	EXTRUSION
BLUE POLYMERS	PCR PP <i>(Coming Soon)</i>	PP	PCR	BLACK/NATURAL	INJECTION
CELANESE	CELANEX® ECO-R	PBT/PET	PCR/PIR	BLACK/NATURAL	INJECTION
CELANESE	ECOMID®	PA	PIR	BLACK/NATURAL	INJECTION
CELANESE	FRIANYL® ECO-R	PA	PIR	BLACK/NATURAL	INJECTION
CELANESE	IMPET®	PET	PIR	BLACK/NATURAL	INJECTION
CELANESE	RYNITE® ECO-R	PET	PCR	BLACK/NATURAL	INJECTION
CELANESE	SANTOPRENE® ECO-R	TPV	PCR	BLACK	EXTRUSION/INJECTION
CHIMEI	ECOLOGUE™	ABS, PC, PC/ABS	PCR	BLACK/NATURAL/WHITE	INJECTION
DOW	REVOLOOP™	PE	PCR	NATURAL	EXTRUSION
ENPLAST	EZPRENE® R	TPV	PCR/PIR	BLACK/NATURAL	INJECTION
ENTEC	ECHO®	PP & HDPE	PCR/PIR	BLACK/NATURAL	EXTRUSION/INJECTION
INEOS STYROLUTION	ZYLAR® ULTRA BLACK	MBS	PIR	BLACK	INJECTION
RAVAGO MANUFACTURING	ENVIRAMID®	PA6, PA66	PCR	BLACK	INJECTION
RAVAGO MANUFACTURING	HYLAC® & ECHO®	ABS	PIR	BLACK	INJECTION
RAVAGO MANUFACTURING	HYLEX®	PC	PIR	BLACK	INJECTION
RAVAGO MANUFACTURING	HYLON®	PA6, PA66, PA612	PIR	DARK COLORS	INJECTION
RAVAGO MANUFACTURING	HYLON® OCEAN	PA6	PCR	BLACK/NATURAL	INJECTION
RAVAGO MANUFACTURING	MABLEX® R	PC/ABS	PIR	BLACK/COLORS	INJECTION
RAVAGO MANUFACTURING	MAFILL®	PP	PIR	BLACK/NATURAL	INJECTION
RAVAGO MANUFACTURING	RAVAPLEN®	PP	PIR	BLACK	INJECTION
RAVAGO MANUFACTURING	RAVAPURA®	LLDPE	PCR	NATURAL	EXTRUSION
RAVAGO MANUFACTURING	RAVATUF® R	TPO	PCR/PIR	BLACK/NATURAL	INJECTION
RAVAGO RECYCLING	RRG	HIPS	PIR	BLACK	EXTRUSION
RAVAGO RECYCLING	RRG	PE/FIBER	PIR	BLACK	EXTRUSION/INJECTION
SAMYANG	TRIECO®	PC, PC/ABS	PCR	BLACK/NATURAL	INJECTION
TRINSEO	PULSE™ ECO	PC/ABS	PCR	BLACK	INJECTION

BIO-BASED & COMPOSTABLE MATERIALS

The disposal of plastic materials has been spotlighted as a focus on waste generation and management which have evolved into important environmental aspects in today’s society. Many regions and brand owners often require bio-based or compostable content. These products have been developed for many applications offering different functionalities while mimicking the process and performance attributes to petrochemical-based plastics. Bio-based and compostable polymers are often categorized as bio-polymers. However, each product offers different functionality. A bio-based product is not always compostable and a compostable product is not always bio-based.



Bio-Based materials refer to products that mainly consist of substances derived from living matter that either occur naturally or are synthesized.



Compostable materials are those plastics that undergo degradation by biological processes during composting to yield carbon dioxide, water, inorganic compounds, and biomass.

BIO-BASED POLYMERS

SUPPLIER	BRAND	POLYMER TYPE	PROCESSING
BIOLOGIQ	BIOBLEND®	TPS BLENDS	EXTRUSION/INJECTION/BLOW MOLDING
BIOLOGIQ	NUPLASTIQ®	TPS	EXTRUSION/INJECTION/BLOW MOLDING
CELANESE	CELANEX® ECO-B	PBT	INJECTION
CELANESE	CELCON® ECO-B	POM	EXTRUSION/INJECTION
CELANESE	HOSTAFORM® ECO-B	POM	EXTRUSION/INJECTION
EMS-GRIVORY	GRILAMID® 1S	PA 1010	EXTRUSION/INJECTION
EMS-GRIVORY	GRILAMID® 2S	PA 610	EXTRUSION/INJECTION
EMS-GRIVORY	GRILAMID® TR	TR PA	EXTRUSION/INJECTION/BLOW MOLDING
EMS-GRIVORY	GRIVORY® HT3	PA 10T/X	INJECTION
INEOS STYROLUTION	K-RESIN® ECO	SBC	EXTRUSION/INJECTION/BLOW MOLDING
INEOS STYROLUTION	LURAN® S ECO	ASA	EXTRUSION/INJECTION
INEOS STYROLUTION	STYROFLEX® ECO	SBC	EXTRUSION
INEOS STYROLUTION	STYROLUX® ECO	SBC	EXTRUSION/INJECTION/BLOW MOLDING
INEOS STYROLUTION	TERLURAN® ECO	ABS	INJECTION
LUBRIZOL	ESTANE® ECO	TPU	INJECTION
TRINSEO	MAGNUM™ BIO ABS	ABS	EXTRUSION/INJECTION

COMPOSTABLE POLYMERS

SUPPLIER	BRAND	POLYMER TYPE	PROCESSING
BIOLOGIQ	NUPLASTIQ®	TPS	EXTRUSION/INJECTION/BLOW MOLDING

COMPOUNDING MATERIALS

The demand for recycled plastic compounds is rising. Entec has a wide range of compatibilizers, impact modifiers, and other additives which allow compounders to produce quality products from recycled and mixed materials. This diverts millions of metric tons of plastic waste from landfills each year while providing a valuable feed stream to industry for high demand recycled content.



COMPATIBILIZERS

Compatibilizers help tie-together dissimilar or incompatible polymers which would otherwise contaminate a recycled feed stream while boosting the mechanical properties of the final compound and eliminating potential delamination issues during part molding.

IMPACT MODIFIERS

Impact modifiers boost the impact and toughness properties of recycled compounds, preventing degradation and contamination issues that commonly impact the quality of recycled materials.

ADDITIVES

Additives are chemicals that can be added to the base polymer or recycled products to improve processability, prolong the life span, and achieve the desired physical or chemical properties in the final product.

IMPACT MODIFIERS

SUPPLIER	BRAND	POLYMER TYPE	POLYMER MODIFIED
DOW	ENGAGE™, INFUSE™	POE, OBC	PP
DOW	ENGAGE™, INFUSE™	POE, OBC	PE
DOW	FUSABOND™, SURLYN™	g-MAH, IONOMER	PA
DOW	ELVALOY™ GMA	g-GMA	PBT/PET
DOW	ELVALOY™ AC	ACRYLATE COPOLYMER	PC, PC ALLOYS
DOW	ELVALOY™ AC	ACRYLATE COPOLYMER	ABS
INEOS STYROLUTION	STYROFLEX®	SBC	ABS
LYONDELL BASELL	ADFLEX, HIFAX	REACTOR TPO	PP

COMPATIBILIZERS

SUPPLIER	BRAND	GRADE	POLYMER TYPE	POLYMER MODIFIED
DOW	RETAIN™	3000	PE g-MAH	OLEFINS > PA or EVOH
DOW	FUSABOND™	P353, P613	PP g-MAH	PP > POLAR POLYMERS
DOW	FUSABOND™	E226	PE g-MAH	OLEFINS > POLAR POLYMERS
DOW	ELVALOY™	PTW	EBA g-GMA	OLEFINS > POLYESTERS
DOW	INFUSE™	VARIOUS	OBC	PE & PP MIXED FEED-STOCK
INEOS STYROLUTION	STYROFLEX®	2G66	SBC	OLEFINS > STYRENIC BASED POLYMERS
TOSAF	TOSAF COMPATIBILIZER	CP8487PE	PE g-MAH	OLEFINS > PA or EVOH

DEVELOPMENT & DESIGN

Our experienced applications engineering group has worked to adapt the way we use and design materials to improve environmental and economic impact, promoting energy and material efficiency. By light weighting conventional products and optimizing design to facilitate recycling, we are able to reduce consumption and provide a new life for materials. Skilled process expertise in bio-based, recycled, and compostable resins allows us to replace traditional plastics while maintaining product integrity. We improve manufacturing efficiency by optimizing cycle times and increasing capacity on existing equipment.



TECHNICAL EXPERTISE

Entec’s team of technical experts utilizes our unique development and design capabilities to replace traditional resins, minimizing weight and reducing waste. We help our customers achieve corporate sustainability goals by incorporating sustainable materials and design fundamentals into various applications.



AUTOMOTIVE

- TPVs containing up to 40% recycled content may be used for center consoles, floor and bin mats, cup holders, and other interior parts with no loss in performance or aesthetics. These TPVs offer customers a fully recyclable part from a closed loop system at a reduced cost.
- Due to their lower density, reinforced olefins can replace reinforced nylons in many underhood and interior/exterior components. This process greatly reduces vehicle weight and raw material cost without performance loss.
- By diverting post-consumer carpet from landfills and utilizing advanced technology, our team is able to produce recycled resins that are used in various automotive applications.



PACKAGING

- Virgin resin consumption can be reduced by 30-50% by incorporating Post-Consumer Recycled olefins into secondary packaging films.
- Stand-up pouches are a rapidly growing segment in the packaging market. Historically, the films utilized to construct these pouches consisted of dissimilar materials to meet performance criteria, but did not allow for recyclability. Addressing these challenges in the design phase provides an opportunity to build film structures using recyclable materials that have minimal impact of performance.
- Our technical experts can down-gauge rigid and flexible film structures by as much as 30% by incorporating higher performing barrier materials, impact modifiers, and abuse-resistant resins.



MEDICAL

- Replacing flexible PVC with TPE or EVA alternatives eliminates non-recyclable PVC and phthalates, allowing for hospital-based incineration or recycling.
- Styrenic and olefin-based materials, which have lower densities and broad recycling capabilities, are commonly used to replace PET, PETG, PC, and PVC. These alternative materials reduce virgin resin consumption and promote material recovery.
- Novel additive technologies support the reduction of wall thickness in rigid medical and pharmaceutical packaging, preserving barrier and key performance properties.

SUPPLY CHAIN

Entec consistently seeks optimization in our supply chain to reduce our carbon footprint. With strategic placement of inventory, dedicated shipping partners, and our logistics expertise, Entec aims to reduce road wear and emissions by minimizing miles travelled.



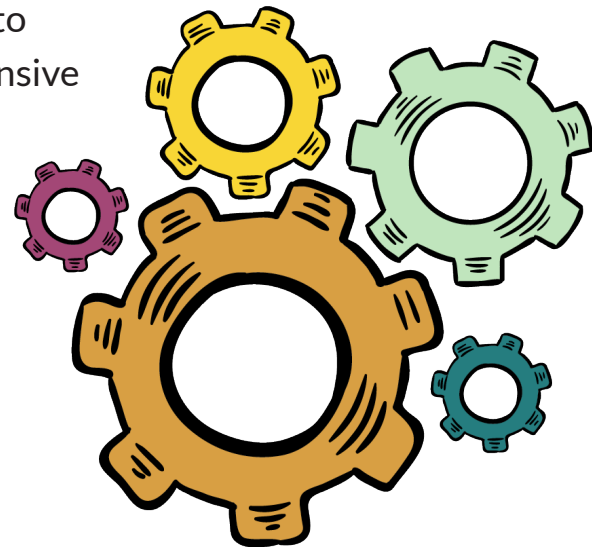
- Headquarters
- Regional Supercenters
- Major Warehouse
- RMA Ravago Manufacturing
- Ravago Owned Warehouses

Entec’s Supply Chain expertise has eliminated **16 metric tons** (100,000 miles equivalent) of Greenhouse Gas Emissions and reduced material transit times to customers through strategic warehousing and dedicated fleet services.

*Greenhouse Gas emission reductions are a good-faith estimate based on Entec Polymer’s 2021 data and calculated using the US EPA’s 2021 SmartWay Shipper Company Partner Tool (U.S. Version 2.0.20), available at <https://www.epa.gov/system/files/documents/2021-10/420b21043.pdf>. These statements have not been audited. Entec does not warrant the accuracy of these statements or make any representation regarding future emission reductions.

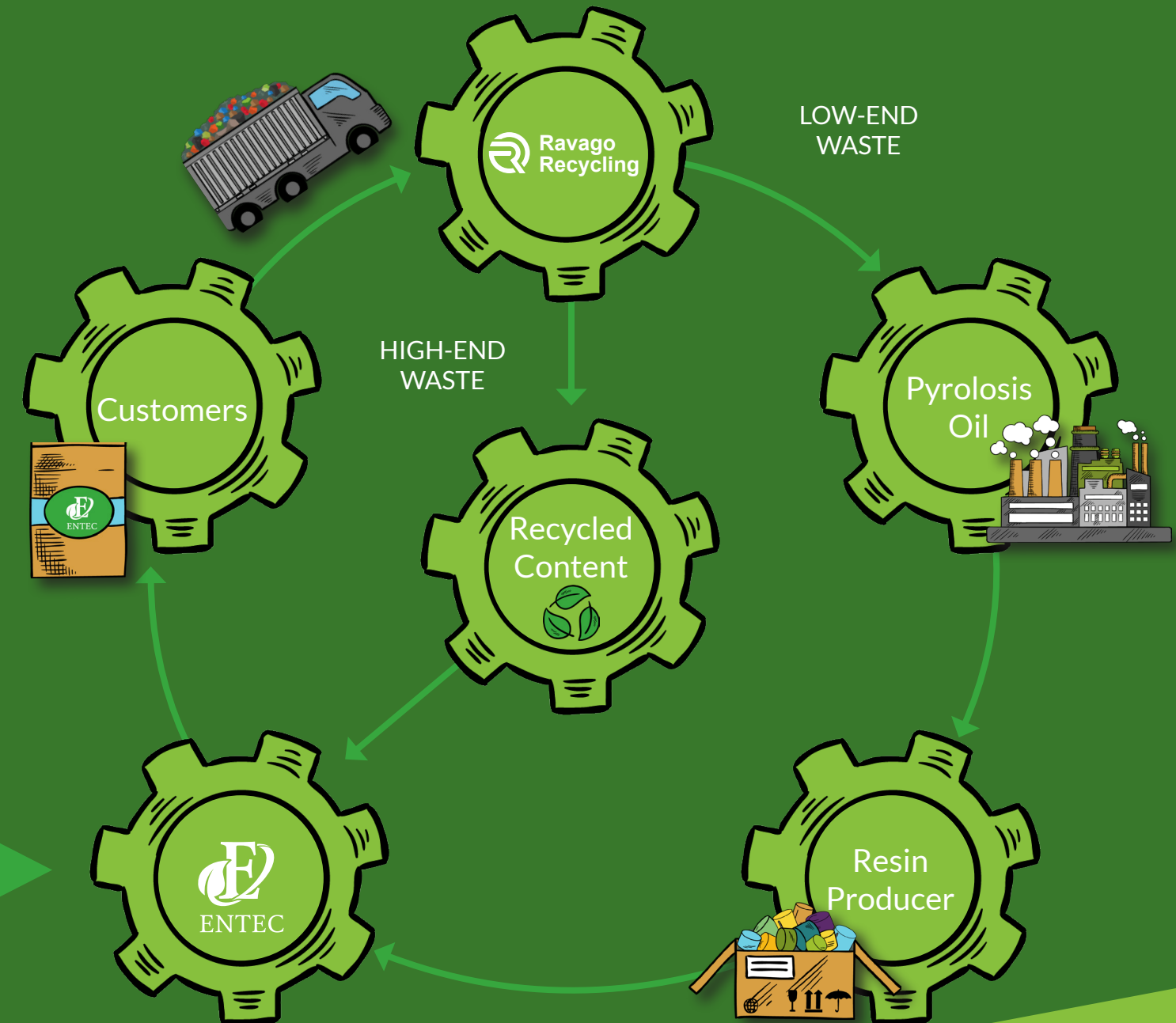
SERVICES

Through our Ravago network, Entec is able to offer recycling and collection services, as well as assistance in guiding our customers along their sustainability journey. Ravago has partnered with industry leaders in advanced and mechanical recycling to offer our customers a novel means to redirect traditional waste into a closed-loop circular economy. Additionally, our material and supply chain expertise allow us to develop comprehensive life cycle analyses to help form and achieve our customers' goals.



CLOSING THE LOOP | SCRAP MANAGEMENT

- Prime Resins
- Recycled Resins
- Additives
 - ▢ Compatibilizers
 - ▢ Impact Modifiers



CLOSED LOOP CIRCULAR ECONOMY | THE EXTENSION OF LIFE

In collaboration with Ravago Companies, Entec continues to focus Sustainability efforts towards developing solutions to continue the life cycle for plastics through both mechanical and advanced recycling. Plastics recovered as part of this robust closed loop circular economy provide restorative and regenerative material options for new products, applications, and services, while promoting environmental responsibility.





At Entec, we are dedicated to providing comprehensive solutions and services that are environmentally and economically sustainable, beyond just the materials we distribute. We believe that at the heart of sustainability is ecological stewardship - responsibly using our natural resources to protect and preserve our environment for future generations. The responsibility falls on everyone to be a contributing member of the solution community. It is our mission to lead and inspire collaboration to develop comprehensive solutions that will guide us as we work towards a more sustainable future, starting with what we can do TODAY!

In the Business of Better: Our Role in a Solutions Based Community





ENTEC POLYMERS

1900 Summit Tower Blvd., Suite 900
Orlando, FL 32810

P: 833.609.5703 | EntecPolymers.com

