
Terracle
Infinite **recycling of plastics**
without environmental pollution

History SINCE 2021.07.28.

Terracle

AWARD 25

2021

- B-Start up Challenge, Silver statue
- Hyundai Heavy Industries technical contest, Excellence Award
- Boo ul kyung Startup Day (Samsung Electronics) Excellence Award
- Ministry of Environment's Environmental Start-up Competition Winner
- Challenge K Startup Regional Qualification Excellence Award
- Bustaraxel Excellence Award
- Dandi Venture Forum Excellent Company IR Award

2022

- Grand Prize in the Public Technology Start-up Competition
- Winning SKC New Material Technology Contest
- Ministry of Environment X Shin-han HERO IRDAY Excellence Award
- Busan World Class Top 3 Selection
- Winning 3rd place in the New Business Contest for Circular Economy
- Busan Startup ESG Challenge Gold Prize
- BUG's DAY Final 2nd
- Shin-han Financial Group's Eco-Friendly Demo Day Excellence Award
- K-camp 4th generation Demo Day 1st place

2023

- K-camp National Final Round Grand Prize
- Climate Tech Startup Challenge Excellence Award
- Winner of Busan Slush'D 10
- Weconomy challenge
- Winner of Hansol V Frontier 4th

2024

- Taiwan Inno Tech Gold Award
- Vietnam Ho Chi Minh DTINO 3rd Place
- Gyeonggi Climate Tech Challenge 1st Place
- Minister of Environment Commendation for Green Industry

INVEST – $7.6M (Series A)

HYUNDAI
LOTTE VENTURES
envisioning partners
NEWBORN VENTURES
DSC investment
Schmidt
KDB Korea Development Bank
BNK Busan Bank

TEAM – 26

Certifications

- Green Tech Certification 1, ISCCPULS
- ISO 9004
- ISO 14001

LOCATION

H.O	#303, Centum Green Tower, 78, Centum Jungang-ro, Haeundae-gu, Busan
R&D	Laboratory and Pilot Test Laboratory, Environmental Industry Research Complex, 410, Jeongseojinro, Seo-gu, Incheon
Plant	Yeosu chemical plant

1 Intro

Terracle

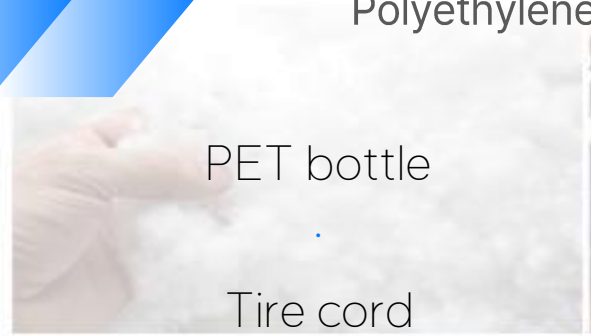
PET is synthesized by polymerization of TPA(Terephthalic acid) and EG(Ethylene glycol). PET is the largest single-plastic market with broad applicability across diverse products, making it Terracle's primary target segment.

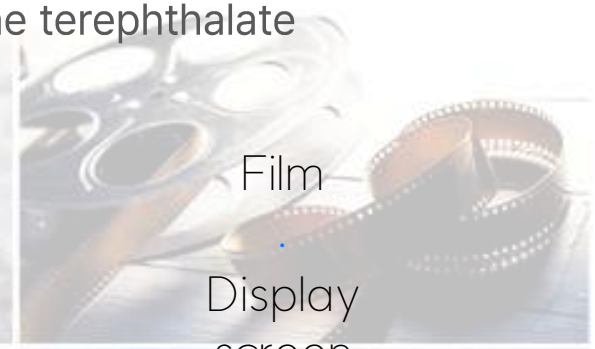
TPA
Terephthalic acid

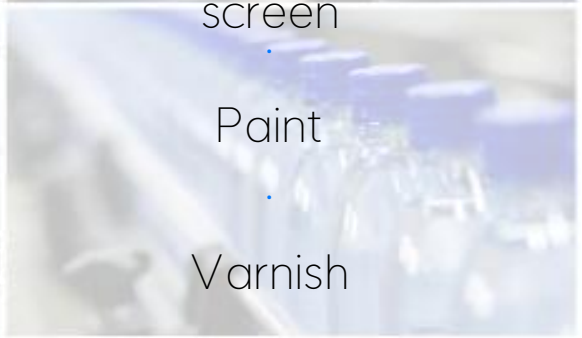
+

EG
Ethylene glycol

PET
Polyethylene terephthalate







ETC.

2 Business

Terracle

Terracle specializes in transforming challenging-to-recycle plastic wastes—including plastics, textiles, automobile parts, and marine waste into high-quality recycled materials using low-impact chemical recycling methods.

We directly recycle waste materials and supply high-quality recycled raw materials.

Main Product

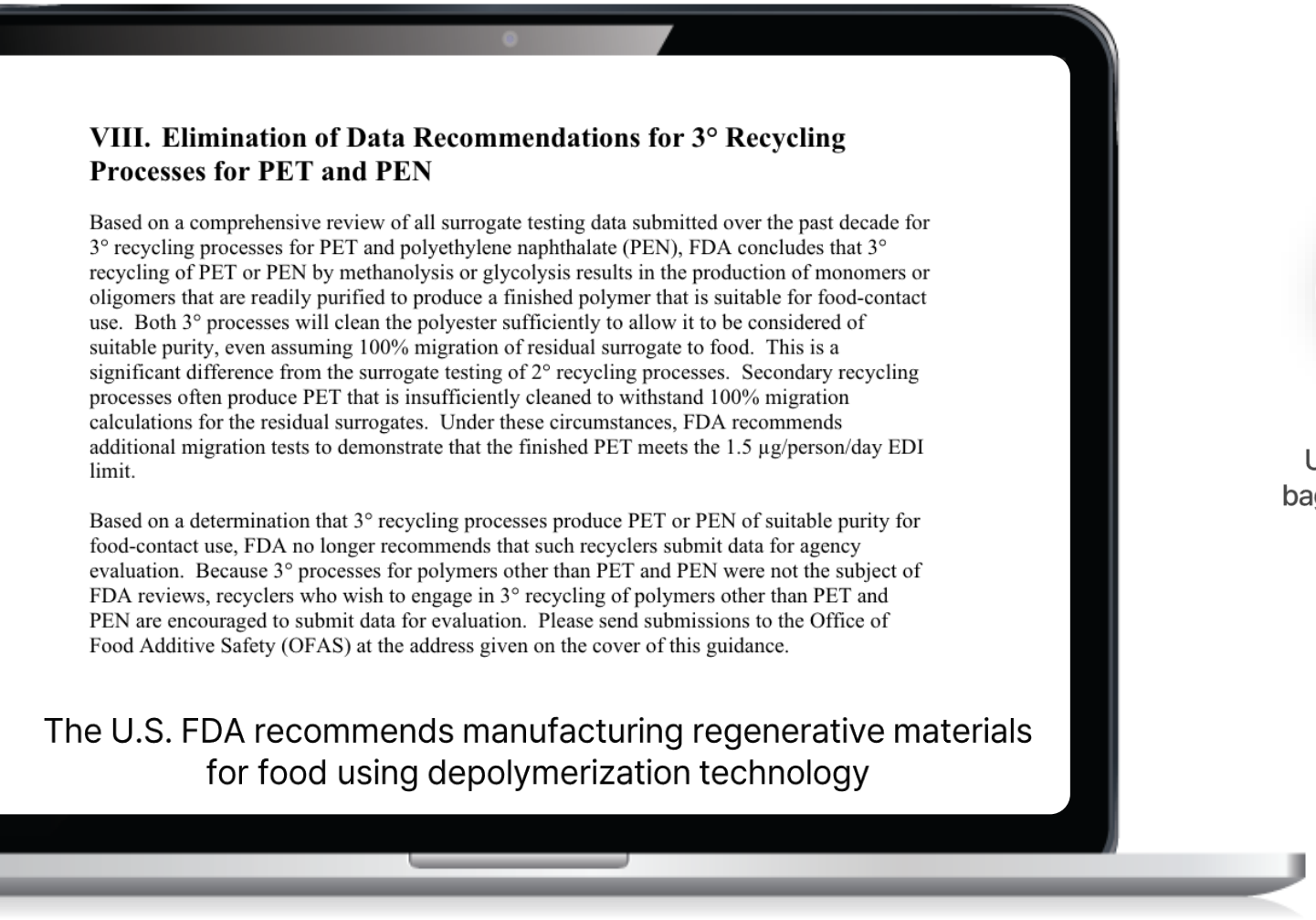
Chemical Recycled TPA 99% ↑

Chemical Recycled EG

3 Problems with Existing Technologies

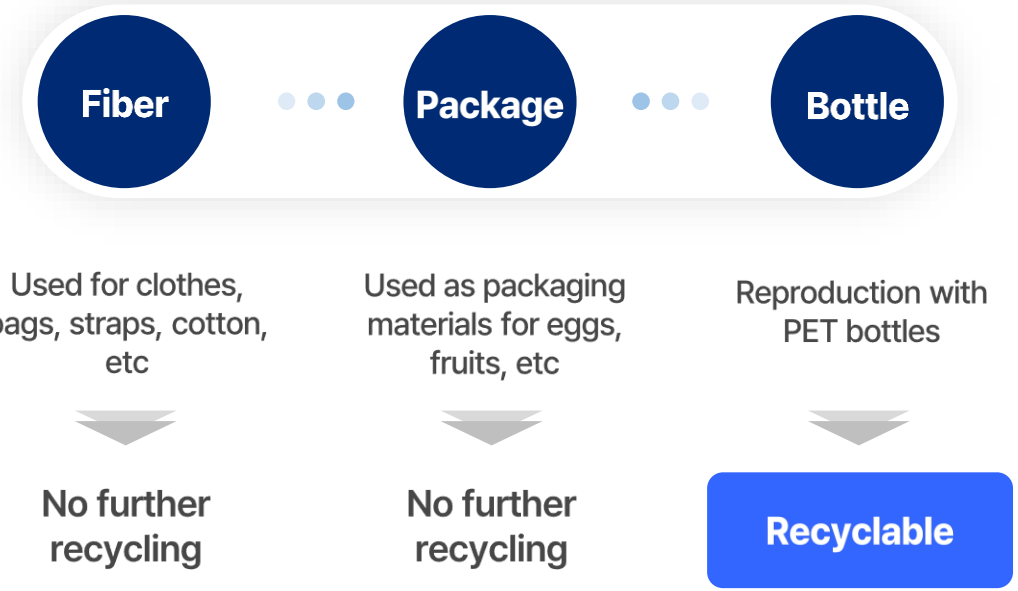
Terracle

Mechanical recycling of PET faces fundamental limitations that hinder circularity. It is only suitable for clean, colorless, and transparent PET waste. The recycled PET chips show inconsistent quality and degraded physical properties, marking them unfit for high-value or safety-critical applications. With each recycling cycle, the polymer weakens, further reducing its usability.



The U.S. FDA recommends manufacturing regenerative materials for food using depolymerization technology

Limitations for sustainability



4 Terracle's Solution

Terracle

Terracle's technology is that depolymerizes plastic synthesized by polymerization to make monomers.

Terracle uses a **hydrolysis-based depolymerization technology** among various depolymerization methods.

"Depolymerization Technology to Return Waste Plastic(PET) to TPA and EG"

5 Difference

Terracle

Terracle does not perform color sorting, material separation, or washing, except for shredding the waste.

We primarily recycle **composite and colored waste materials** that are difficult to process through mechanical recycling.

Use only by grinding

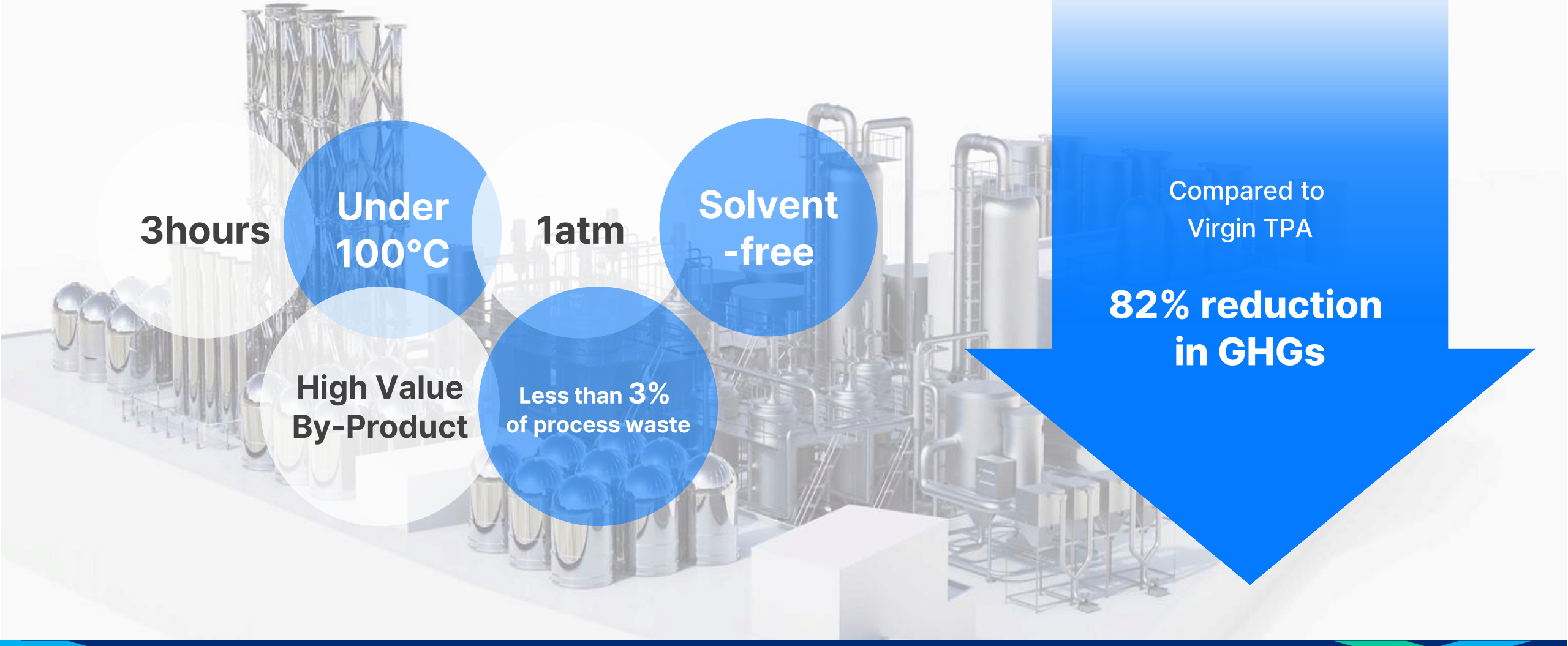
Used waste

Unsorted PET waste, car interior materials, disposable coffee cups, beer PET bottles, textile waste, composite film and industrial waste and more.

6 Key Technology Advantage

Terracle

To minimize carbon emissions, we have solved core challenges in chemical recycling. Our solvent-free process runs at low temperatures and ambient pressure, using only water and cost-effective commercial catalysts. By recovering heat generated during the reaction, our system achieves **exceptional energy efficiency and economic viability**.



7 Our scale

Terracle

Terracle successfully implemented the world's first continuous and automated hydrolysis-based depolymerization process in December 2023. By 2025, we plan to complete the commercial plant capable of producing 10ton.day TPA. From g-scale fundamental research to engineering design, operation, and optimization, we handle every stage internally and will also offer the EPC package.

KRICT

3 Licensed Patents

Terracle

14 Proprietary Patents

10tons/ Day

Built a Plastic Waste Depolymerization Technology Commercial Plant

8 History - Site pictures

Terracle

2021-2022

The possibilities of technology

1g~10kg

Lab

2023-2024

Scale-up feasibility

1ton / day

Continuous

2024-2025

Stability of the process

10ton / day

Batch type

2025-2026

Commerciality of technology

10ton / day

Continuous

9 Product Quality

Terracle delivers recycled TPA (Cr-TPA) and EG (Cr-EG) with high purity and consistent particle characteristics, both validated through third-party analysis and confirmed by key customers. Cr-TPA exceeds 99% purity, while Cr-EG reaches over 99.7%

Cr- TPA

Specification

Common Specification

PARAMETER	Method	Speo. Value
Appearance	Visual Inspection	White Powder
Purity(Acid Value)	Manual Titration	99~101%
Metal contene - Na	AAS	< 50ppm
LOD	Moisture Analyzer	< 1.0%

Cr- Ethylene glycol

Specification

Common Specification

PARAMETER	Method	Spec. Value
Appearance	Visual Inspection	Colorless Liquid
Purity(Acid Value)	Manual Titration	> 99%
Water contents	Karl fischer titration	< 1%
Specific Gravity	Densimeter	1.111~1.116

10 Applications

TPA is an essential chemical building block used in a broad range of applications, including packaging, textiles, films, engineering plastics, automotive parts, electronics, and more.

TPA is used as a raw material in the production of PET, PETG, PBT, PBAT

Cr-TPA

EG is used as a key raw material in PET, antifreeze, coolants, and solvents

Cr-EG

Fiber

Package

PET film

Tire-cord

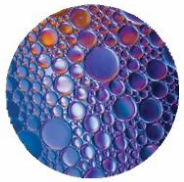
Paints

Chemecal product

Antifreeze

Polyesters

Glycerin substitute



Surfactant

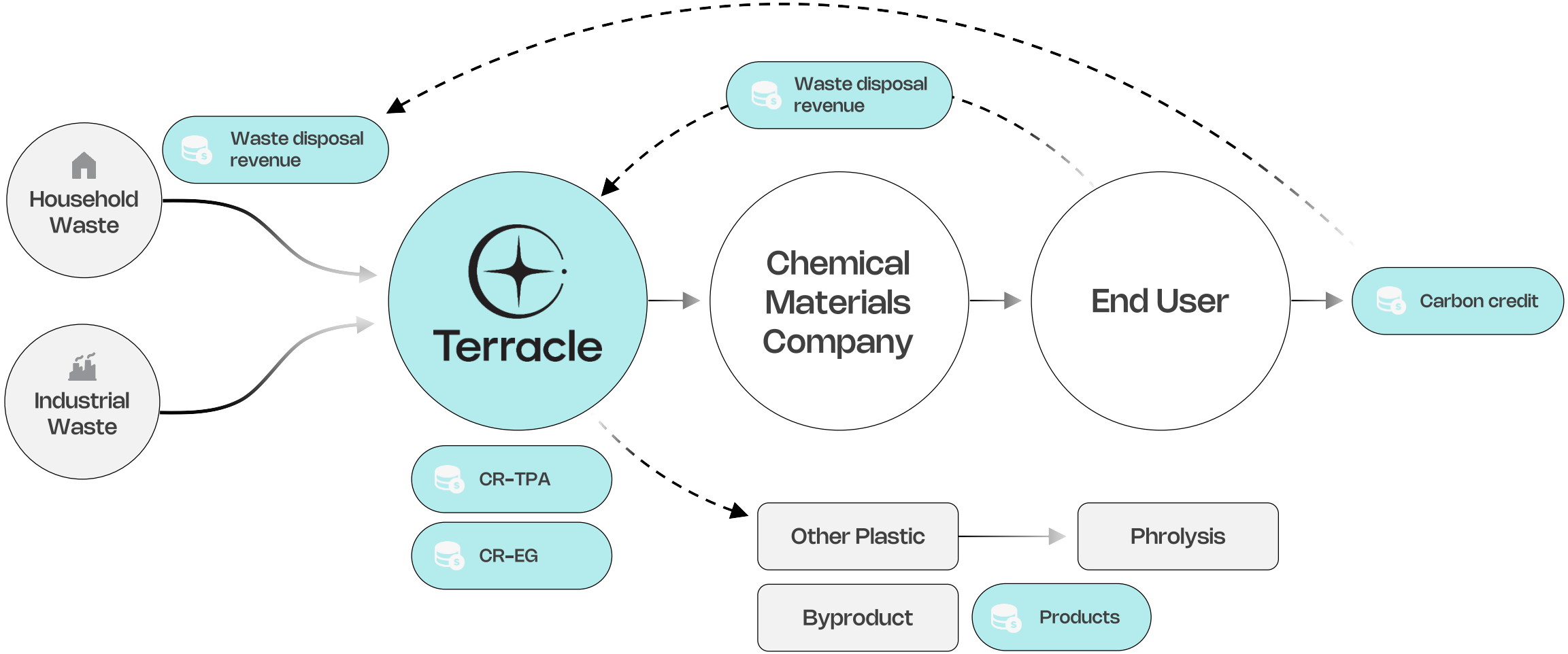
Lubricant

Organic synthesis

11 Value chain

Terracle

Terracle is **not just a supplier of recycled materials**. We recycle the specific waste our customers want to close their own loops, and provide **environmental data and certifications** to support their sustainability goals. While conventional recycling companies mainly handle **non-recyclable waste**, chemical companies focus on **meeting the eco-friendly demands of end users**.



12 Expansion of recyclable waste types

Terracle

Terracle is expanding the type of feedstock to a variety of waste that can be depolymerized and is pursuing joint development and collaboration at the request of customers.

Currently recyclable

PET	O
PC	X
PBT	▲
PU	O
NYLON	▲
Bio-degradable polymer PBAT	O
PLA	O

Expanding

Depolymerization

PET →

- **PU** — 2025,09 launching
- **PS** — 2026,12 launching
- **NYLON** — 2027,03 launching

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