

# Application of Crumbler® Technology to Recovered Plastics and MSW for Chemical Recycling and Waste to Energy

**Fifteen years of processing biomass into uniform flowable 1.5 - 6 mm feedstocks set the stage for rapid adaption to the challenge of plastics and MSW**

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# Problem and Solution

Shredded wastes are currently optimized for automated sorting in MRF, not for subsequent chemical recycling, pelleting, etc.



Recovered streams and end-of-belt commingled materials need subsequent preparation.

**Crumbler® rotary-shear technology from Forest Concepts is the solution to produce high quality feedstocks.**



# Uniform Size and Shape

- Uniform size
- Highly flowable
- Efficient bulk handling





# Miscible Feedstocks – Designer Blends

- OCC (Amazon boxes)
- Wood chips (forest health)
- Poly mailers (Amazon bags)
- Soft drink bottles (Mt. Dew)
- Water bottles (Costco 500 ml)



**The pile in the center includes all these components in a stable blend of 2mm nominal particle size.**

# What About Shredded End-of-Belt MSW?



Raw from MRF end-of-belt

6 mm Crumbled

2 mm Crumbled

# Acknowledgment of Support

In March 2019, DOE BETO asked us to process PET water bottles, Amazon boxes, and poly pouches into 2mm Crumbles® to show elected leaders that federal investment in biomass feedstock processing technologies can rapidly be translated to the context of recyclable and non-recyclable MSW.

In February 2020, our technology and success were featured at the DOE *Advancing the Bioeconomy: From Waste to Conversion-Ready Feedstocks Workshop* in Crystal City, VA.

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*Thank you!*



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