White Paper: The State of Paper Cup Recycling

January 27th,2022



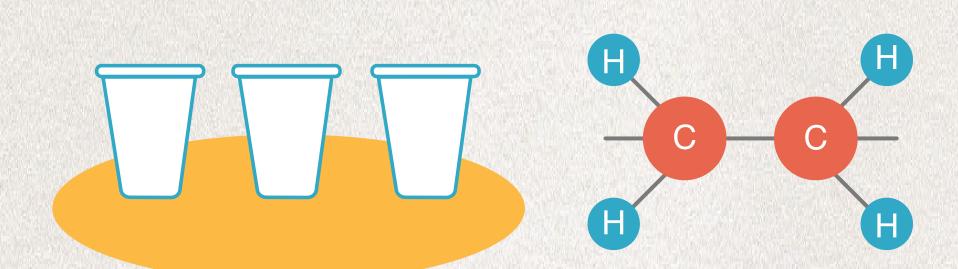
Processing Cups At The Material Recovery Facility (MRF)



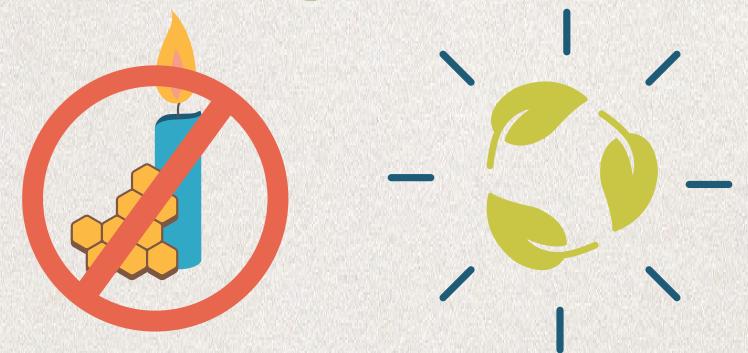
At least half the packaging generated by food service locations makes its way back to the home. In the case of paper cups, 70% leave the store.

70%

Recovery Paper Grade and Cups



The vast majority of paper cups in the US market are made from solid bleached sulfates (SBS) white paperboard fibers with polyethylene (PE) coating.



Wax-coated cups are virtually extinct with new types of coatings are starting to emerge. Unfortunately, they are slow to be used in the US markets.

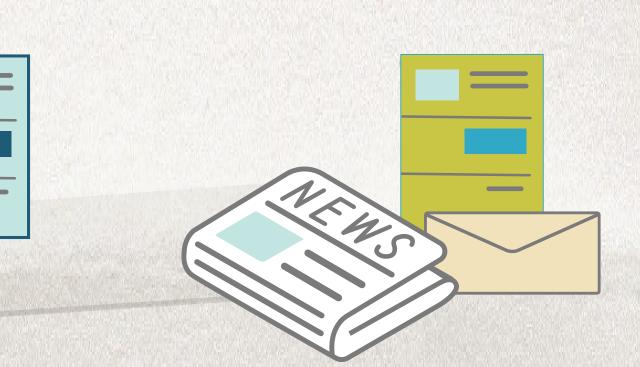
Institute Of Scrap Recycling Industries (ISRI) Standard Grade Designations

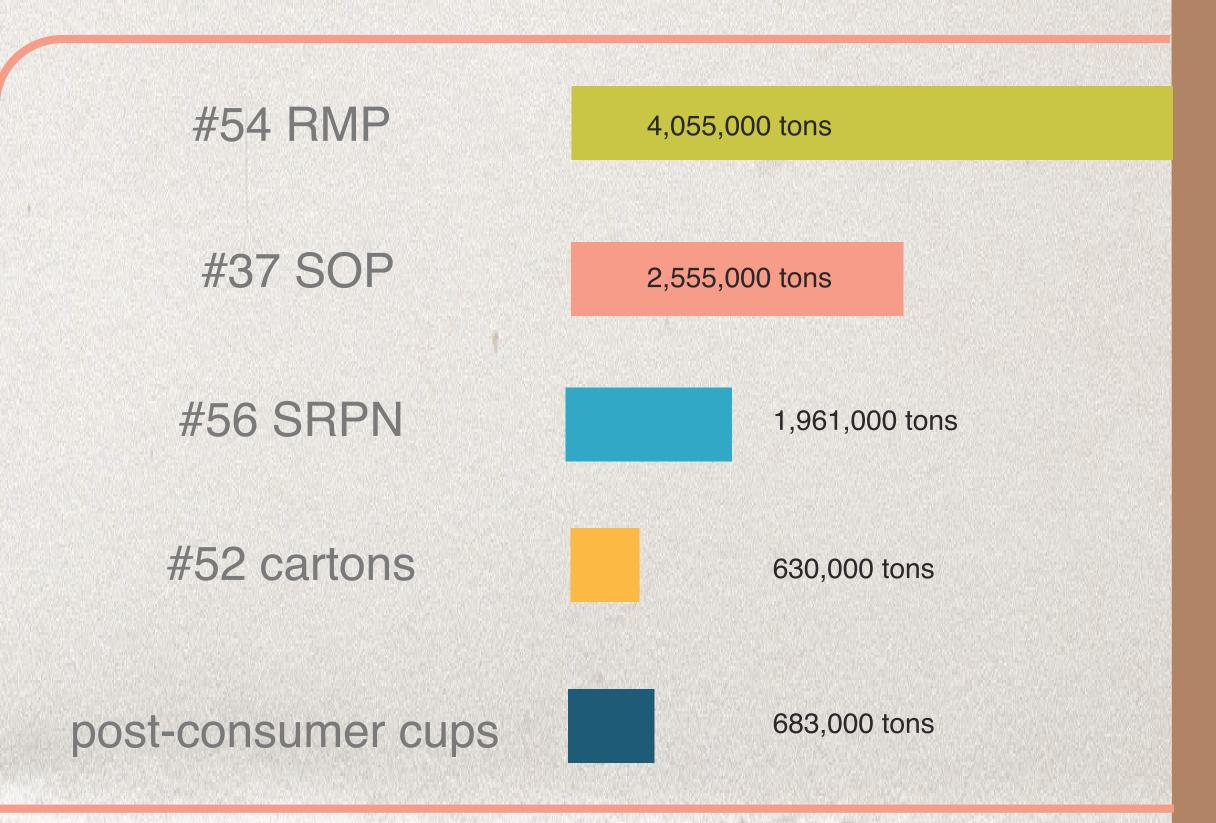
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#37 sorted office paper (SOP)



#52 aseptic packaging and gabletop cartons (cartons)



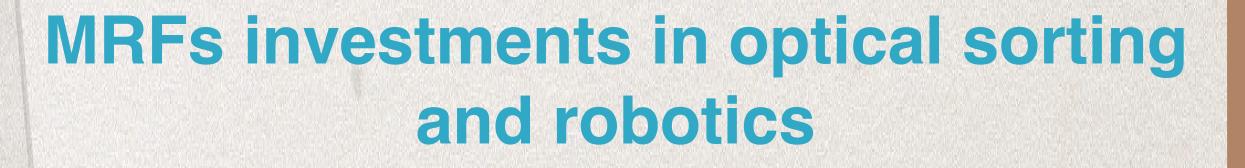


2020 US Production Volume

#56 sorted residential paper & news (SRPN)

Flow of Paper Cups Through the MRF

3 Elements of Paper Cup Recovery



MRFs are primarily focusing on optical sorting, but as of 2021, both optical sorting and robotics have been growing as the prices for mixed paper has improved.



Partnership with local municipality and provide public education to recycle paper cups

Demand from an end market buyer

for the targeted paper grade

3

Anticipation of how the paper cup will flow through the sorting operation



Technical Considerations in Paper Cup Recycling

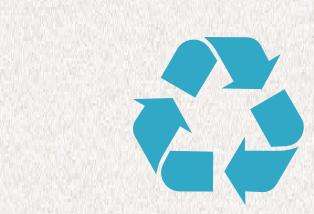


Innovation In Cup Coatings And Materials

Alternatives to PE Coatings



molded fiber





more easily recyclable and/or compostable

Most Common Alternatives To PE Coatings Are Polylactic Acid (PLA) And Water-Based Aqueous

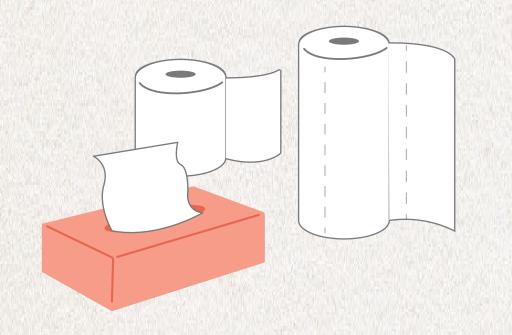
PLA is a "bioplastic" made from the following plant-based materials



• Easier for the mills to re-pulp, due to water being part of the paper-making process.

End Markets for Recovered Cups in North America

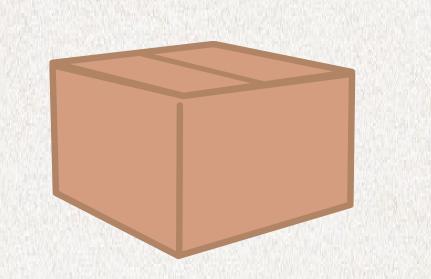
End Market Mills Accepting Paper Cups Include Producers of:

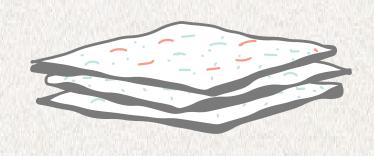


tissues and towels



recycled paperboard (food and other packaging)





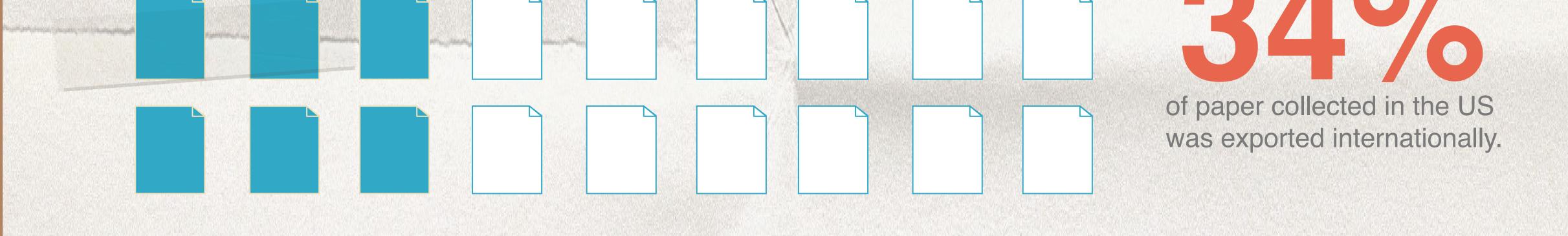
containerboard (brown corrugated boxes) recycled market pulp

In December 2021 Prominent Paper Mill Companies Signed A "Declaration of Acceptance"

They announced their commitment to increasing the recycling of paper cups.

- Essity
- Georgia Pacific
- Graphic Packaging International
- Great Lakes Tissue Company
- ND Paper
- Pratt Industries
- Sustana Fiber
- WestRock

Export Markets





Moving Forward

As the use of alternative barrier coatings to PE begin to expand, cups and other poly-coated packaging will eventually become easier for the mill to manage.

