



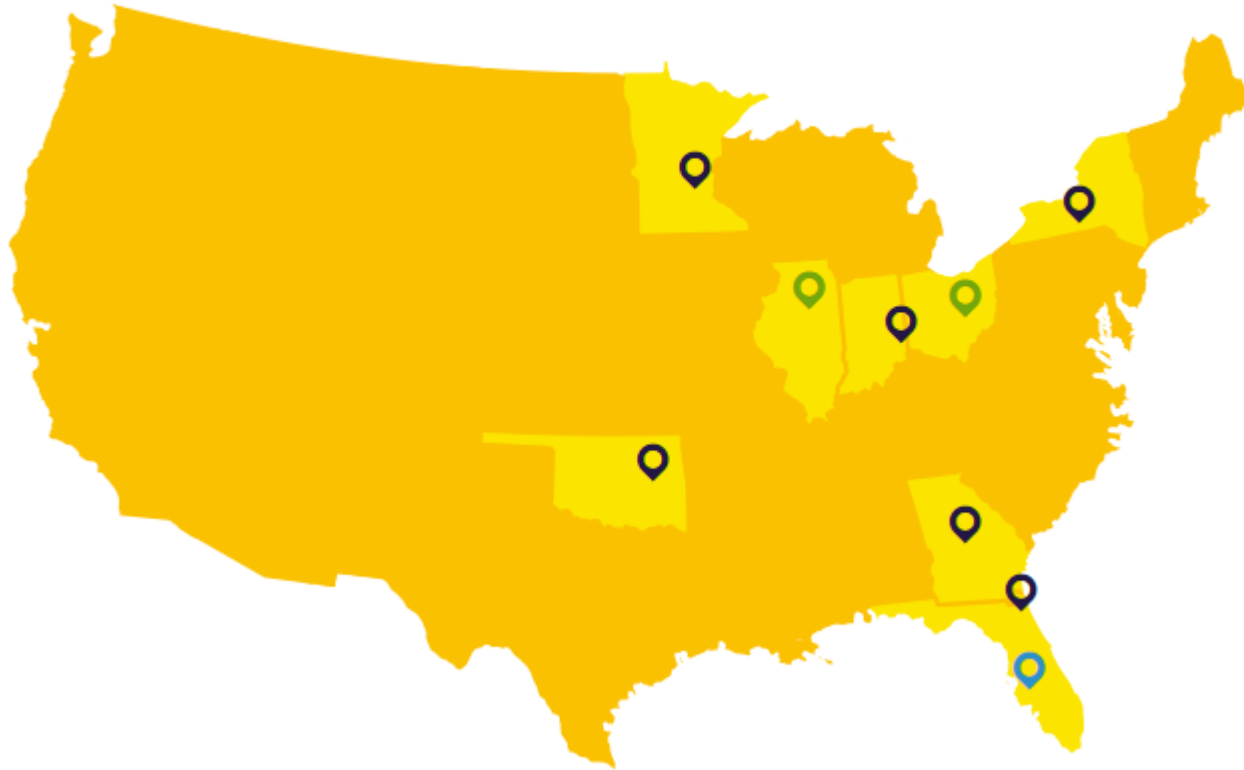
## Effects of Glass Recycling in the Glass Container Industry

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# Anchor Glass Container Locations

## Locations



### Map Legend

-  Corporate Headquarters
-  Glass Manufacturing Facility
-  Support Facility

# Cullet Impact By Location – 10-45% usage today

- **Elmira, NY**
  - Bottle Bill cullet excellent quality excess suppliers in the region
- **Shakopee, MN**
  - Bottle return that we process ourselves
  - MRF Processed cullet – quality issues
- **Jacksonville, FL**
  - Brewery return cullet very clean
  - MRF Processed cullet – major quality issues
- **Henryetta, OK**
  - MRF Processed cullet – quality issues
  - Local cullet processors no quality issues
- **Warner Robins, GA**
  - Good clean cullet from the East Coast BB region
  - MRF Processed cullet – quality issues
- **Lawrenceburg, IN**
  - Produces own cullet purchases very little from industry

# Benefits of Using More Cullet

- **Positives**

- Requires less energy to melt than raw material (\$2.00/mmbtu?)
- 100% recyclability (no wasted material) in the melting & forming process
- Lower furnace emissions and temperatures
- Reduces material going to landfills

- **Obstacles**

- Consistent supply and reliability with quality
- Contamination in recycled glass (cullet) supply causes imperfections in glass containers
  - Container rejects due to “stones”
  - Lost production efficiency
  - Increased accident potential from glass-related injury
  - Difficult to identify & reject incoming cullet supply
  - Difficult to prevent all contamination related defects from reaching our customer.



# Cullet Contamination



- **Types of Contamination**

- Ceramics (Coffee Cups, Dinner Plates)
- Opal Borosilicate
  - Hi temp cookware/Corelle, Visionware
- Non-Ferrous Metal
  - Copper, Stainless Steel, Aluminum
  - Bottle Crowns (caps)
- Medical Waste
  - Spent needles

Stones can be very small and hard to detect due to size and location in the container.



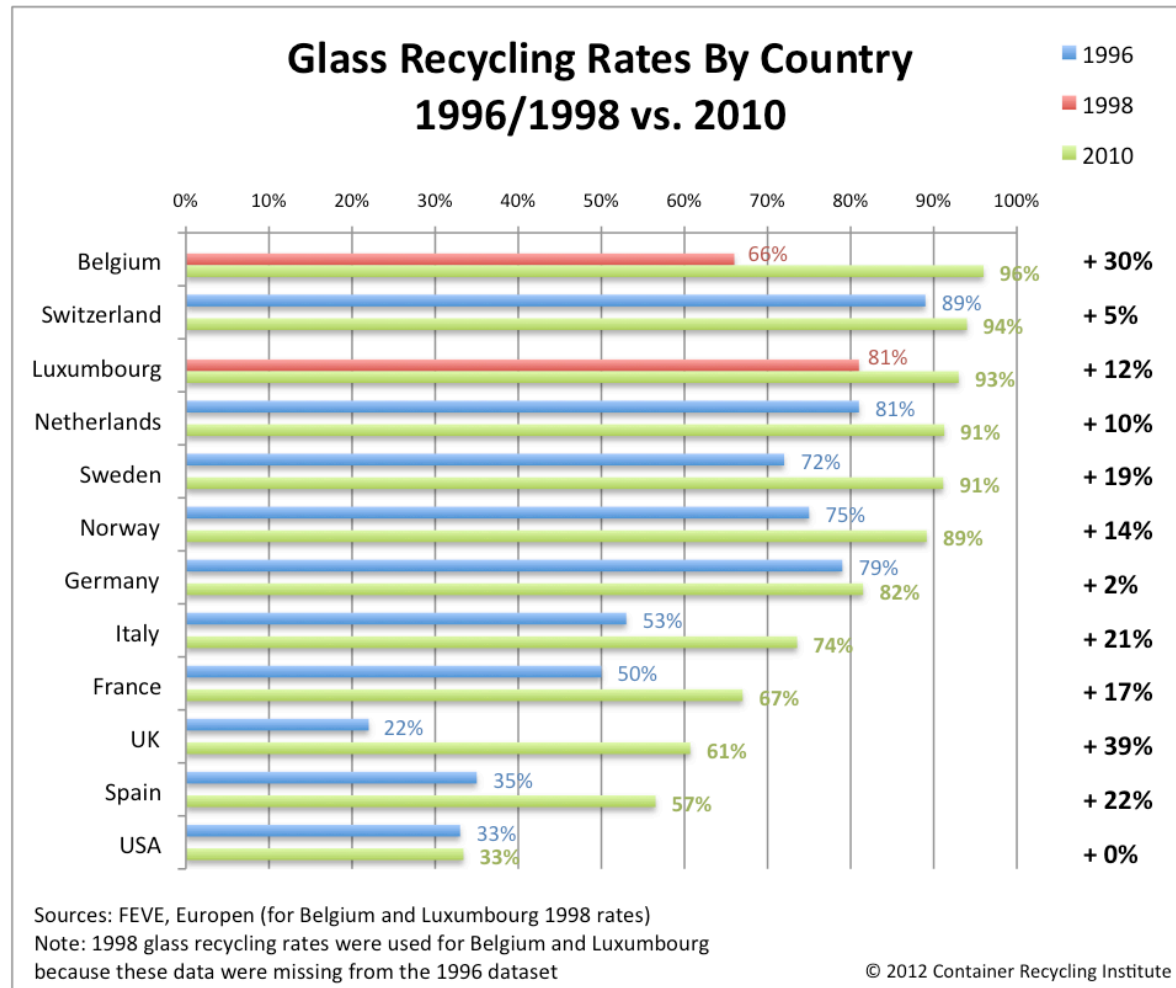
- **Cullet Specifications**

- 1/2 inch in size or slightly larger
- No ceramics/Opal Borosilicates
- No plastic
- No metals
- No medical waste
- Properly color sorted cannot exceed specs in other colors

# Cullet World Keeps Shrinking

- **SMI buys Reflective Industries**
  - SMI advises this is good for everyone in the industry!
- **MRF sellers struggle with relationships but cost to enter market are capital intensive upfront**
- **WM removing glass from recycle stream in Atlanta – no end use claimed (how many more markets will this happen)**
- **How do we expand bottle bill recycling or local recycling such as hospitality bins**
- **Transportation is key to expanding cullet use – we are truck and rail capable at all Anchor sites**
- **We are on board to improving the recycling and consumption of glass in our business**

# Glass Recycling Rates \*



[www.anchorglass.com](http://www.anchorglass.com)



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