Growlers, Crowlers®: What you need to know about draught beer to go
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The Original
Growler Types

Glass:
Growler Types

Ceramic:
Growler Types

Plastic:
Growler Types

Stainless Steel:
The Crowler®

- Single-use container
- Seamed at the point of dispense
- Crowler® is trademarked by the Ball Corporation
- Introduced in 2013 through joint venture between Oskar Blues Brewery and the Ball Corporation
- Trademark is licensed to Crowler Nation, an offshoot of Oskar Blues/Canarchy
Currently

The single use containers has never made more sense

The shortage of cans has made it very difficult to get into the single use business
Container Types

- The original 32-ounce Crowler®
  - 300 ends*
- Crowler A® 25.4-ounce
  - 300 ends*

*300 ends ≈ 3.00 inches diameter

Note: ends (lids) are typically ordered separately
Container Options

- 12 oz, 16 oz, 16.9 oz, 19.2 oz also available
- 202 ends*

*202 ends ≈ 2 3/8 inches diameter

Note: Seam rollers are specific to ends being used
Growlers

Pros
- Convenient
- Come in different sizes
- No special equipment needed
- Containers widely available

Cons
- Vulnerable to UV exposure
- Carbonation loss
- Oxygen pickup
- Shelf life
- Questionable closure
- Re-use sanitation questions
- Breakage
<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Convenient</td>
<td>• Shelf life</td>
</tr>
<tr>
<td>• Robust seal</td>
<td>• Specialized seamer required</td>
</tr>
<tr>
<td>• Opaque – UV protection</td>
<td>• Containers can be hard to acquire</td>
</tr>
<tr>
<td>• Easy to cap on foam</td>
<td>• Labeling/ recycling questions</td>
</tr>
<tr>
<td>• No re-use, so no cleaning</td>
<td></td>
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<tr>
<td>• Recyclable</td>
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Crowlers®
Cleanliness of Containers

Standard sanitary practices apply

• Store container and caps/ends in clean, dry area
  • Crowlers® inverted or covered
  • Growlers kept in covered area
  • Ends stored stacked and covered
  • Lids kept covered
  • Rinse container with cool water before filling
• Wear nitrile gloves when filling/seaming
Rinsing

• Rinsing helps to clean and cool container.

• An extension to a standard rinser helps to get the water past the “bottle neck”

• A cold plate coil can be used to cool the rinse water even more.

Water is blocked by the growler neck

This one made with a ¼” coupler and 5” nipple
Purging

Same principles apply as with can or bottle filling

- Evacuate Oxygen
- Lower DO/TPO
Purging

Is it effective?

- Preliminary evidence from three minor sensory studies from breweries
- Indication of benefits of CO2 purge
  - Purged showed better results in sensory than no purge
  - Lower DO/TPO with 5 second purge than none
  - TPO still higher than expected from professional packaging line
- Better sensory results than growler after 3 days
Purging

Recommendations

• Purge for 5 seconds
  • Not longer than 10 seconds due to safety concerns
• Purge from the bottom with tube or long directional nozzle
Purging

All devices need to have self shut off. CO2 monitors are suggested.
purging

All CO2 should be directed to the bottom of the container.
Filling

Filling properly is very important:

• Straight faucet fill is the most disruptive
• Bottom fill with a faucet-fitted tube is better
• A counter-pressure filling machine is the most ideal

Note: Faucet-fitted tubes and other filling equipment must be sanitized, rinsed and dried after each use
Tube Filling

• ½” OD Vinyl tubing fits snuggly in standard faucets.
• Angles cut on the ends make insertion easier
  • Also lessens the chance of plugging the tube with the bottom of container
Counter Pressure Filler

Adapters can be made to fit various sized containers to counterpressure fillers
Safety

Filled growlers can shatter or explode

- Dependent on temperature, fill volume and carbonation level

<table>
<thead>
<tr>
<th>2.7 Vols/Vol, 5% ABV, at a 95% fill</th>
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</thead>
<tbody>
<tr>
<td>Temperature</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Refrigerated</td>
</tr>
<tr>
<td>Cool</td>
</tr>
<tr>
<td>Room Temp</td>
</tr>
<tr>
<td>Hot Day</td>
</tr>
<tr>
<td>Car</td>
</tr>
</tbody>
</table>
Safety

- Only use growler containers specifically designed for packaged carbonated beer and
- Ask the container supplier to verify container pressure ratings

Many containers currently in use are not designed for carbonated beverages.
Safety

For counter-pressure filling

• Know the pressure rating of the system

• Ensure system shielding
Safety

Do not overfill a growler

- Always leave 5% headspace or fill to the manufacturers recommended fill line if one is shown.

<table>
<thead>
<tr>
<th></th>
<th>Temperature</th>
<th>PSIG at 95%</th>
<th>PSIG at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerated</td>
<td>38</td>
<td>13.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Cool</td>
<td>50</td>
<td>20.3</td>
<td>20.4</td>
</tr>
<tr>
<td>Room Temp</td>
<td>68</td>
<td>32.4</td>
<td>33.2</td>
</tr>
<tr>
<td>Hot Day</td>
<td>100</td>
<td>57.5</td>
<td>60</td>
</tr>
<tr>
<td>Car</td>
<td>120</td>
<td>74.2</td>
<td>78.4</td>
</tr>
</tbody>
</table>
Safety

- Fill heights can be deceptively low
- Fill heights will vary by container

Proper fill line
Imperfections in glass can cause weakness in glass

- Visually inspect every growler before filling.
- Do not fill glass or ceramic growlers with:
  - Cracks or chips
  - Engravings
  - Pitted or unsmooth glass surfaces as found in older growlers
System Maintenance

Having a clean draught system is imperative,

Following guidelines from the Draught Beer Quality Manual:

- Clean every two weeks
  - Caustic chemical solution at 80-110°F
    - 2% solution, 3% for old or problem lines
    - Recirculate 15 minutes with an electric cleaning pump
- Disassemble and clean faucet at every cleaning
- Scrub Coupler at every cleaning
- Quarterly acid line cleaner – descaling
- Semi-Annual
  - Disassemble and detail FOBs
  - Disassemble and detail couplers
Seamer

- Semi-automatic
- Can is spun mechanically
- Seaming is done manually

Note: This style can be made to seam a variety of heights of the same ends
Seamer

The original All American

- Seaming is done automatically
Seamer

Production
• Designed to run continuously
All seaming machines need to be maintained

- Daily lubrication
- Seam checks
Seams
Seam Checks

- Check first and second seams on a regular schedule.
- Easily done following seamers manufacturers instruction.
- Each container’s manufacturers has its own specific tolerances.
Shelf Life

Recommendations for minimizing TPO

• Purge 5-10 seconds from the bottom
• Fill from the bottom until foam crowns the top Crowler
• Cap on foam, then seam
• No delay between steps

Bottom Line

• Not the same as packages filled from a professional packaging line
• Impossible to recreate the same oxygen evacuation
  • Elevated TPO is inevitable
  • Consumer education is critical
• Date coding on the label is recommended
The average customer doesn’t understand shelf life like a brewer does:

Educate the end user. Verbiage is available from BA

Remind customers:
• It’s not a commercially filled can/bottle
• Store cold
• Consume growlers within 72 hrs
• Consume Crowlers® in 7 -10 days
Available Publications

https://www.brewersassociation.org/educational-publications/draught-beer-quality-for-retailers/
THANKS!

Questions?