Glass can present particular difficulties given the nature and prevalence in food operations. These materials can often be transparent and difficult to detect when present in food. Glass is a major contributor to injury when consumed in the product. It can result in claims and on occasion litigation.

These and other factors require glass to be eliminated from food production areas where possible. Where this is not practicable control must be exercised over these materials to ensure the risk of contamination is reduced to an acceptable level.

Sources of Glass Contamination: Bottles, jars, light fixtures, utensils and gauge covers.

Effect on consumers: Cuts, bleeding, may require surgery to find or remove.

Controls:

If glass cannot be eliminated fully from the facility, then some controls could include:

Policy & Procedure
- Clearly define a policy and procedure. This should include a register of items and their auditing and breakage procedure so that employees understand what steps to take in case of a breakage.

Inspection
- Inspect raw materials and food ingredients for contaminants.

Specific Processing Areas
- Any products that need to be packed into glass jars/bottles could be packed in separate processing area to other products.

Non-glass Storage Containers
- Try and purchase ingredients in non-glass containers. If this is not possible, glass containers can be opened away from the processing area and decanted into non-breakable containers prior to entering the processing area.

Protect equipment
- Items such as light bulbs should have a protective cover to effectively contain any potential broken glass such as plastic shields or implement the use of shatterproof bulbs. Thermometers should also have plastic covers.

Maintenance
- Replace any lights during non-production hours when there is no exposed product or if it does have to be done during production hours, all product and packaging materials should be covered or moved to a sufficient distance from the fixture being repaired.
Recall of product due to glass found

<table>
<thead>
<tr>
<th>What</th>
<th>When</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nestle, variety of products such as pizza and lean cuisine meals</td>
<td>2016</td>
<td>Concerns that the products could contain small bits of glass after several consumer reports.</td>
</tr>
<tr>
<td>Green Cuisine recalled 18.5-ton of Trader Joe’s chicken/turkey deli salads</td>
<td>2017</td>
<td>Consumer complaints of hard silica and glass fragments.</td>
</tr>
<tr>
<td>Aldi cashew nuts</td>
<td>2017</td>
<td>Consumers reported finding glass fragments in cans of the nuts.</td>
</tr>
<tr>
<td>Stella Artois beer</td>
<td>2018</td>
<td>It may have contained small particles of glass.</td>
</tr>
<tr>
<td>Sainsbury’s Beetroot</td>
<td>2018</td>
<td>Precautionary measure because the product may have contained small pieces of glass.</td>
</tr>
<tr>
<td>Monster Energy Beverages (Canada)</td>
<td>2019</td>
<td>Recalled due risk of glass fragments.</td>
</tr>
</tbody>
</table>

FDA Compliance Policy Guide 555.425 Foods, Adulteration Involving Hard or Sharp Foreign Objects

The FDA Health Hazard Evaluation Board found that foreign objects that are less than 7 mm, maximum dimension, rarely cause trauma or serious injury except in special risk groups such as infants, surgery patients and the elderly.

Regulatory Action Guidance :: If the product contains a hard or sharp foreign object that measures 7mm to 25mm in length.

SUMMARY TABLE

<table>
<thead>
<tr>
<th>Sources</th>
<th>Effects</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bottles, jars, light fixtures, utensils and gauge covers.</td>
<td>• Cuts, bleeding, surgery may be required in some cases</td>
<td>• Inspection</td>
</tr>
</tbody>
</table>

Published Article

Are you doing all you can to keep glass out of your products? [https://www.foodengineeringmag.com/articles/95037-are-you-doing-all-you-can-to-keep-glass-out-of-your-products](https://www.foodengineeringmag.com/articles/95037-are-you-doing-all-you-can-to-keep-glass-out-of-your-products)

References