

Industry Guidance:

Tips to Help Control Internal Pressure in Packaged Beer



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Introduction

This document is meant to provide brewers with advice on how to control internal pressure in packaged beer in order to reduce the potential for containers bursting in the marketplace. While there can be a number of causes for why internal pressure may rise in packaged beer to the point where a container bursts, the primary cause is secondary fermentation. As such, the following are some tips that can assist brewers in reducing the potential for secondary fermentation and bursting containers.

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Tip #1: Control the amount of fermentable extracts present in packaged beer

A beer that has not completed its fermentation will continue to do so after it is packaged, thereby increasing CO₂ levels and the internal pressure of the container.

To avoid secondary fermentation and a rise in internal pressure, brewers must have a well-controlled process in place to manage the amount of fermentable extracts/priming sugars present in a packaged beer. A beer that contains an estimated 1 gram/litre or higher of fermentable extract, either residual from incomplete fermentation, or added by way of priming sugars, would be susceptible to bursting.

Tip #2: Practice pasteurization and maintain a sterile production area

A combination of inadequate pasteurization practices and non-sterile filling conditions can create an environment suitable for unwanted microorganisms and in turn secondary fermentation.

We encourage all brewers to flash pasteurize their beer prior to packaging. Doing so can ward off unwanted microorganisms and reduce the risk of unintended secondary fermentation.

Even with pasteurization, special attention still needs to be paid to how containers are stored and handled in the production area before and during packaging. Cans should be kept covered and clean from environmental and/or brewery contamination at all times (i.e. until they are loaded on the conveyor for filling). In addition, rinsing inverted cans with clean, sterile water immediately prior to filling is highly recommended.

Tip #3: Control filling and CO₂ levels

We recommend that brewers maintain a headspace of 3% in each container. A 3% headspace will allow for moderate increases in CO₂ without significantly increasing the potential of a container bursting due to excessive internal pressure.

We also encourage brewers to monitor the CO₂ levels in a beer prior to packaging. We recommend keeping CO₂ levels below 2.9%. At levels higher than this, the risk of a can bursting may increase.

Tip #4: Store packaged beer in a cool, dark place

In certain beers, light and heat can help to promote secondary fermentation and can increase the CO₂ levels and therefore internal pressure in a container. Storing packaged beer in a cool, dark location can help to reduce the likelihood of secondary fermentation occurring in packaged beer.

Tip #5: Establish a microbiological monitoring program

Establishing a microbiological monitoring program in the filling area of a brewery and also in the finished product liquid can help to evaluate and identify unwanted microbial growth in high risks products.

Depending on the size of the brewery and resources available, a simplified micro sampling program designed to 'predict' potential issues may not be complicated to establish and maintain.