



544 Bryant St., San Francisco, CA 94107

BLACK HAMMER GLUTEN-REMOVED BEER: THE SCIENCE

At Black Hammer Brewing Company we understand the importance of limiting gluten intake to those with gluten sensitivities, allergies, or celiac disease. However, we also understand that small-batch craft beer is delicious and is a fundamental component of a happy and fortuitous life.

Since we want everyone to be able to enjoy our tasty brews, have happy and fortuitous lives and not need to worry about adverse effects related to gluten when choosing which beer to drink, in mid-2017 we implemented our BHB Gluten Elimination Program (GEP). We rigorously employ proprietary manufacturing processes with industry-proven enzymes and testing to ensure that the gluten concentration in all of our beers is less than 20 ppm gluten, which is the established FDA threshold used for labeling foods "gluten-free".¹

The particular gluten protein which appears to cause many people internal discomfort is called "gliadin", which makes up 70% of the protein in gluten. Our GEP utilizes the approach documented in the 2016 Journal of the American Society of Brewing Chemists paper "AN-PEP, Proline-Specific Endopeptidase, Degrades All Known Immunostimulatory Gluten Peptides in Beer Made from Barley Malt"² to break up gliadin into smaller molecules which tend not to cause adverse reactions for those with gluten sensitivities.

Our process does not change the flavor, aroma, or body of our beer, and we have won most of our awards for our gluten-removed brews in gluten-containing beer categories, including a recent Silver Medal in the 2023 US Beer Open Championships for our Du Hast German Pilsner. Our flagship hazy IPA, Cuddle Puddle, was awarded a Gold Medal in the same competition in the Nearly-Gluten-Free category.

That's right - 100% of Black Hammer Brewing Company beer is "Gluten-Removed" and is generally enjoyable by those with gluten sensitivities without gluten-related adverse effects.

We periodically spot-test our beers using an independent testing laboratory with the medically accepted standard test for gluten and celiac sufferers, the R5 competitive ELISA (enzyme-linked immunosorbent assay) test, and thus far, not one gluten-removed beer has exceeded the 20 ppm limit and most test results have been below 3 ppm.

Note: Although existing evidence supports that gluten levels are greatly reduced in our beers, the current test for measuring gluten has not been scientifically validated.

However, we cannot label our beers "gluten-free" due to the labeling standards set forth by the US Tax and Trade Bureau, which differ significantly from the standards set forth by the FDA. Additionally, we process our beers in a facility that contains gluten, so for those who are extremely sensitive to gluten for whom even minute amounts of wheat or barley dust could cause significant adverse effects, it is recommended that you avoid our beer or experiment with small amounts of our beer first to ensure that it works for you if you so desire, but we cannot guarantee that the beer is gluten-free.

GOVERNMENT DISCLAIMER:

Beer fermented from barley, a grain containing gluten, and crafted to reduce gluten. The gluten content of our beer cannot be verified, and this beer may contain gluten.

¹ <https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/Allergens/ucm362880.htm>

² <https://www.tandfonline.com/doi/abs/10.1094/ASBCJ-2016-2300-01>