

Q&A about Toyo-Sasaki Glass Products

Question 1) About Bubbles

Q1-1: What are the causes for the bubble generation in the process of producing glassware?

A1-1: The main cause is CO₂, which is generated by the decomposition of the components of which, soda ash (Na₂CO₃) and limestone (CaCO₃), the main raw materials for glassware, are melted. While some of the bubbles can be removed by auxiliary ingredients, all of them cannot. In addition, some of them are caused by entraining air during molding.

Q1-2: Does the bubble affect quality? Does it mean that glassware with less air bubbles is better quality? Is there an industry standard? (For example, how many millimeters should not be exceeded, how many pieces should not be exceeded)

A1-2: Crushed or large bubbles can cause breakage. We have the quality standards for the bubble position, size, and number according to the shape, size, and manufacturing method of the product. We don't ship the products which don't meet the standard as the defective ones. We don't ship the products which don't meet the standards as the defective ones.

Q1-3: Are the products broken easily due to the poor heat resistance if there are many bubbles?

A1-3: No. The heat resistance of glassware is determined by the coefficient of thermal expansion of the composition instead of the amount of bubbles.

Question 2) About Glass Materials of TOYO-SASAKI GLASS Products

Q2-1: Are all the glass materials of TOYO-SASAKI GLASS products Soda-lime Glass or other materials also?

A2-1: Almost all of our machine-made products are made of Soda-lime Glass. Some of them are made of Fine Crystal Glass, Lead-Free Crystal Glass, and Borosilicate Glass also. Our hand-made products are made of Semi-lead Crystal Glass mainly. Some of them are made of Fine Crystal Glass, Lead Crystal Glass 24% PbO, Soda-lime Glass, and Borosilicate Glass.

Q2-2: What are the advantages and disadvantages of Soda lime glass?

A2-2: The advantages are to melt and mold it easily and to save the batch cost. That's why it is the most popular glass and is used not only for tableware but also for glass containers and flat glass. In addition, it is Lead-Free ecofriendly. There are no particular disadvantages.

Q2-3: What are the ingredients of soda lime glass?

A2-3: The main raw ingredients are silica sand (SiO₂), soda ash (NaCO₃), and limestone (CaCO₃).

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Q2-4: Which component is vulnerable to heat?

A2-4: If the coefficient of thermal expansion is large, it becomes vulnerable to heat.

Ingredients that increase the coefficient of thermal expansion include Sodium oxide and Potassium oxide. On the other hand, the component that lowers the coefficient of thermal expansion is Boron oxide. Heat-resistant glass (Borosilicate glass) is the glass which contains Boron oxide and few Sodium oxide and Potassium oxide. Therefore, it has a small coefficient of thermal expansion and is resistant to heat.

Q2-5: What is the heat and cold resistance limit of TSG products?

A2-5: The heat resistance standard of TSG's machine-made soda lime glass is 35 degrees difference. (For example, if the room temperature is 20 degrees, it can handle hot water up to 55 degrees.)

Question 3) About Thickness of Cup

Q3-1: Why does the tolerance of the thickness, thinness, and weight of the cup occur?

A3-1: Regarding handmade product, each one is slightly different because the amount of liquid glass melted from the furnace, which is taken out by rod, is based on the experience of the craftsman and can be a little different. Therefore, the tolerance of thickness and weight can be occurred. Regarding machine-made products, the tolerance for the glass amount isn't large basically.

Q3-2: Can the tolerance of the thickness, thinness, and weight of the cup affect the quality? Is thicker glass more resistant to heat and more unbreakable?

A3-2: We set the tolerances of the thickness, thinness, and weight of the cup for quality control. Generally, if the cups of the same shape and material are compared, the thicker one is stronger against the physical impact. However, it may not be stronger although it is thicker due to the problem due to the problem of the amount of strain. As for heat, thick glass is vulnerable to heat. For tumblers, it cracks from the thick bottom. Heat-resistant glass is thin, including the bottom, to make it resistant to heat.

Question 4) Are they dishwasher-safe and available to use in high temperature disinfection cabinets?

A4: Almost machine-made products, including cut glasses, are dishwasher-safe. Some over-decorated items may be detached and are not dishwasher-safe. Please check the user's manual. Hand-made products are not dishwasher-safe. Both of machine-made and hand-made item are not available to use in high temperature disinfection cabinets. The heat resistant temperature difference of machine-made soda lime glasses is 35 degrees.

Question 5) Why are there vertical line marks on both sides of the cup body of some products?

A5: The vertical lines on both sides of the glass body are considered to be the seams of the mold (split mold).