

Containers and Packaging Past Efforts Toward a Recycling-Oriented Society

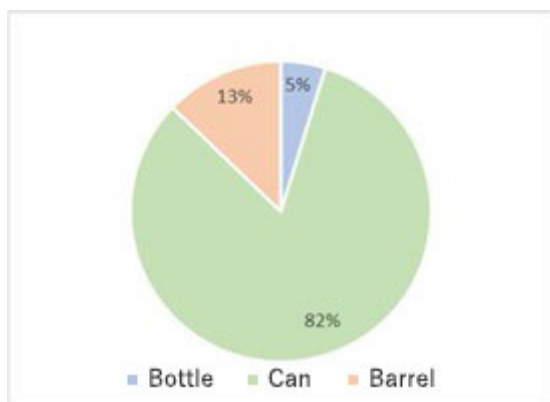
As of June 2023

The products and services provided by the Sapporo Group use a variety of containers and packaging. To date, we have been gradually expanding the use of environmentally friendly containers and packaging to prevent global warming and promote the 3Rs. Here, we introduce some of the major efforts made by Sapporo Breweries, Ltd. to date.

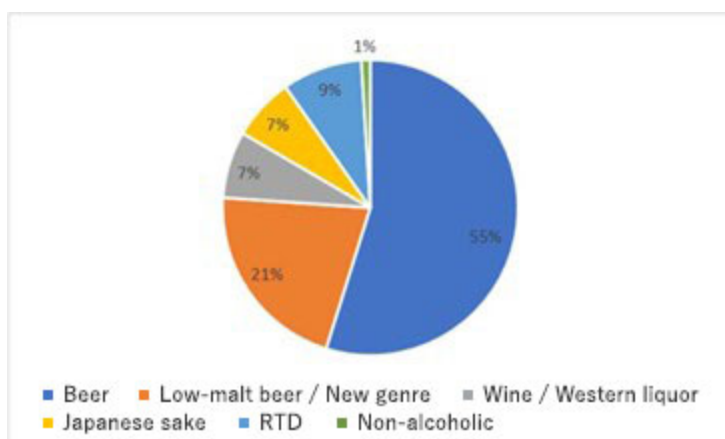
We will continue to aim for 100% use of containers and packaging that are compatible with a recycling-oriented society based on the "Sapporo Group Container and Packaging Vision." We will also promote new initiatives to achieve this goal.

◆ Container Composition Ratio in Sapporo Beer

The containers and packaging used for most of Sapporo Beer's products include cans, kegs, and bottles for beer products. In addition, PET bottles and paper cartons are used for some wines and Japanese liquors, while paper packaging such as corrugated cardboard is used for the outer packaging.



Beer Ratio by Container (in terms of sales volume)



(Reference) Composition of domestic alcoholic beverage sales by category

◆ Sapporo Breweries' Major Initiatives to Date

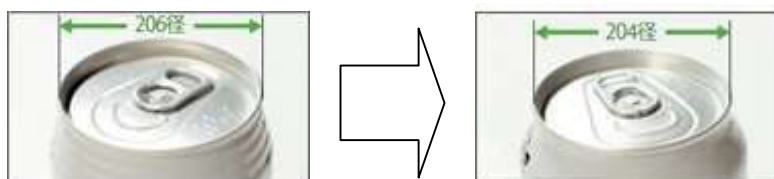
◇ Reduce

1. Aluminum Cans

We are continuously reducing the weight of aluminum cans. Specifically, we are reducing the weight of aluminum cans by (1) reducing the diameter of the can lid and (2) making the can lid and can body thinner.

< Diameter of Can Lid >

- ♦ The diameter of the can lid was originally 209 (approx. 69.8 mm (before tightening)), but was changed to 206 (approx. 64.7 mm (before tightening)). The current diameter is 204 (approx. 62.3 mm (diameter)).



Diameter: approx. 64.7mm (before tightening) Approx. 62.3mm in diameter (before tightening)

< Thinning of can lids and can bodies >

- ♦ The amount of aluminum used per can lid has been reduced by 0.2g (approx. 7%) from 3.1g to 2.9g. The new can lids were introduced in 2018. This weight reduction is achieved by adding a bead (groove-like unevenness) to the can lid to increase the strength of the surface and reduce the thickness of the plate.
- ♦ In 2018, we introduced a 350ml can body with a weight of 10.7g per can. (The previous lightest can body weighed 10.9g per can.) The weight has been reduced while maintaining a balance between strength and weight.

		206 Diameter	204 Diameter		
Year of adoption		—	2007	2011	2018
Weight per can	Can body	13.8g	12.1g	11.7g	10.7g
	Can lid	3.7g	3.1g	3.1g	2.9g

* The weight data for aluminum cans of various diameters is the lightest among the materials used at the time when we started using them.



Lightweight can lids

2. Paper Packaging for 6-Can Packs

We are continuing our efforts to reduce the weight of paper packaging for 6-cans.

- ♦ We reduced the amount of paper used per sheet by approximately 6% in 2011 and by approximately 8% in 2016 compared to 2011. The new cans, which have been used since 2016, have a revised shape, with a lock at the bottom to prevent the can from falling out. The top of cans are now partially exposed on the end face, making them easier to remove and handle for customers.



Paper packaging for 6-can packs

3. Corrugated Fiberboard

In reducing the weight of corrugated fiberboard, we have achieved reductions in paper consumption by (1) making the paper used lighter and (2) reducing the area of the corrugated fiberboard by devising its shape.

- ♦ The "Raku-mote Case" is shaped with the top and bottom corners of the long side and the top corner of the short side angled, reducing the amount of corrugated board used per sheet by approximately 1.9%, from 210g to 206g. The new shape also makes the product easier to hold and reduces the force applied when opening the package.



Raku-mote Case for environmental friendliness
and ease of carrying

- ♦ "Short flap corrugated fiberboard" is a corrugated fiberboard with the side flaps shortened by 10 mm each at the top and bottom, reducing the paper area by up to 2.8%. The reduction in paper usage reduces CO2 emissions by 149 tons per year (based on actual sales in 2021).



Short flap cardboard

4. PET Bottles

We are sequentially changing to lightweight containers for 4LPET bottles with handles used for shochu products beginning with those manufactured in mid-March 2022. Plastic consumption and CO₂ emissions are expected to be reduced by approximately 16 tons and by approximately 61 tons per year, respectively (based on actual sales in 2021, a reduction of approximately 20% from the previous level).



◇ Reuse

1. Returnable Bottles

Returnable bottles are reused more than 20 times and are commonly used by three beer companies, including our company. The three companies are working together to increase the number of times returnable bottles can be used without increasing their weight.

- ♦ Specifically, in order to increase the strength of the shoulder portion, we have added a pear pattern and made the shoulder portion more gently shaped. The entire body of the bottle becomes whitened due to abrasion and scratches as the bottle is repeatedly collected and used, and even though the mechanical strength of the bottle is sufficient, the product value is lost. Therefore, by making the top and bottom of the bottle body convex by 0.3mm, the area where the bottles come into contact with each other is specified, and the whitening area is partially reduced.



① Shape of the shoulder of the bottle is smooth



② Condition of abrasion on the body of the bottle
The current bottle has limited whitening.

2. Plastic Pallets

Plastic pallets are used in various forms for different industries, logistics, and storage methods.

The plastic pallets we use are 900 mm x 1,100 mm, developed by four beer companies. These pallets are called Type 9 pallets and are used repeatedly. In 2013, the beer companies initiated the establishment of the P-pallet Joint Usage Association to enable joint use across the entire food, beverage, and liquor industries. Currently, 126 companies are members (as of June 2023).

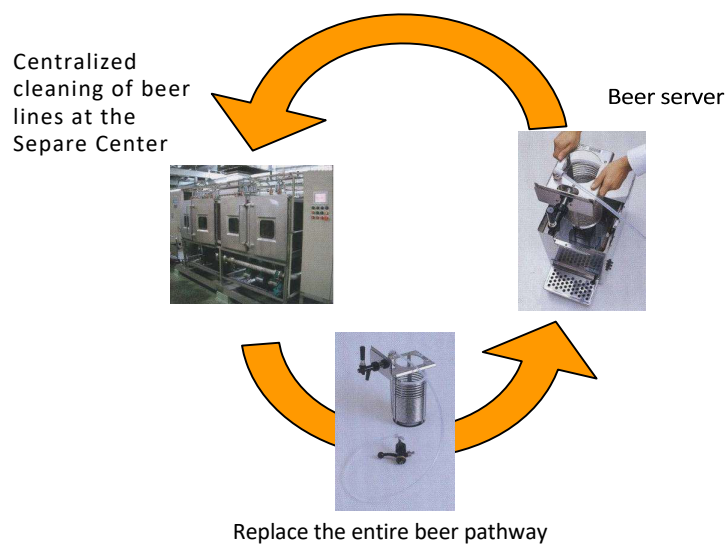
3. Kegs and Beer Servers

Kegs are stainless steel containers that can be reused exclusively for commercial purposes, and they are reused approximately 120 to 200 times. We have also developed environmentally friendly beer servers for use with these kegs.

- ♦ We have developed a beer server that can replace the entire beer line. In 2002, we introduced a system to collect beer lines from restaurants and clean them at our maintenance center. The beer server is called "Separe Server," and the system is named "Sapporo Separe System" from the meaning of "separation."

By separating the beer line and the cooling section into two modules, the beer line can be collected, cleaned, and replaced with a new beer line on a regular basis. In the event of a malfunction, only one side needs to be replaced, thus extending the service life of the server compared to conventional servers and reducing server waste.

The Separe Server was recognized for its environmental friendliness receiving numerous awards, including the President's Award of the Eco-Products Awards Promotion Council at the 8th Eco-Products Awards.



Schematic diagram of the SEPARE system

◇ Recycle

1. PET Bottles



PET bottles for wine products manufactured in Japan are made of recycled PET resin.

- ・ We have adopted materials made from 100% recycled PET resin for 720ml PET bottles manufactured from March 2021 onward.
- ・ Large-volume PET bottles (1.5L, 1.8L) were made from materials containing 20% recycled PET resin from September 2021 onward. The ratio of recycled PET resin has been increased to 30% for bottles manufactured in and after June 2022.

◆ Major Awards for Containers and Packaging

- ◆ Development of a lightweight aluminum can lid for beer-tasting beverages
Winner of the 43rd Kinoshita Award, Improvement and Rationalization Category (June 2019), Japan Packaging Institute
- ◆ Sapporo Separe System, a quality control system for draft beer (Separe Server)
Chairman's Award of the Eco-Products Awards Promotion Council, Eco-Products Category, 8th Eco-Products Awards (2011)
- ◆ Separe Server System, a keg beer server management system
Chairman's Award of the Clean Japan Center, Award for Resource Recycling Technology and System (2009), Clean Japan Center Foundation
- ◆ Sapporo Draft Beer Black Label Can with carbon footprint display
2009 Japan Packaging Contest, Beverage Packaging Category Award (2009), Japan Packaging Institute
- ◆ Raku-mote Case
2008 Japan Packaging Contest, Beverage Packaging Category Award (2008), Japan Packaging Institute