



I Present Conditions for Recycling Steel Cans

1. What are Steel Cans? How Many Steel Cans are Produced?

- Steel cans are used for beverages such as juice and coffee (beverage cans), foods such as canned fish and orange (food cans), dried seaweed, Japanese tea and cookies (general-purpose cans), and foods and other products (18-liter cans).
- The production of beverage and food cans together amounted to 245,000 tons in 2016. This was for approximately 70% of all steel cans produced.
- In 2016, 6.8 billion beverage steel cans were produced in Japan and the per capita annual consumption was 54 cans.



Beverage and food cans together amounted to 245,000 tons



General-purpose cans 82,000 tons



18-liter cans 26,000 tons

The data were from the Iron and Steel Statistics of 2016 published by the Ministry of Economy, Trade and Industry, and the National Federation of 18 Liter Cans Manufacturers Corporate Union.

The number of total beverage and food steel cans

(Estimated values: The research conducted by Japan Steel Can Recycling Association)
(million cans)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Beverage cans	12,781	12,596	12,110	11,831	11,601	11,198	10,234	9,577	7,184	6,814
Food cans	1,114	1,042	1,007	993	893	898	858	886	872	850
Total	13,895	13,638	13,117	12,824	12,494	12,096	11,092	10,463	8,056	7,664

Marks of Steel Can

"Law for Promotion of the Utilization of Recyclable Resources" requires putting a mark on beverage cans to indicate their materials. And for general cans (i.e., cans for tea or confectioneries), the All Japan Federation of General Can Industries Association established a mark for their cans to indicate the can material. For 18 liter cans, The National Federation of 18 Liter Cans Manufacturers Corporate Union established a mark so that consumers can easily identify "steel cans" when sorting waste.



(Beverage Cans' Mark)



(General Cans' Mark)



(18 Liter Cans' Mark)

Components of Steel Can

Steel sheets for beverage cans have high durability, workability, and intensity material. Steel cans are recycled in various forms such as in the production of cars, rails, household electric appliances, reinforcing bars, and recycled steel cans.

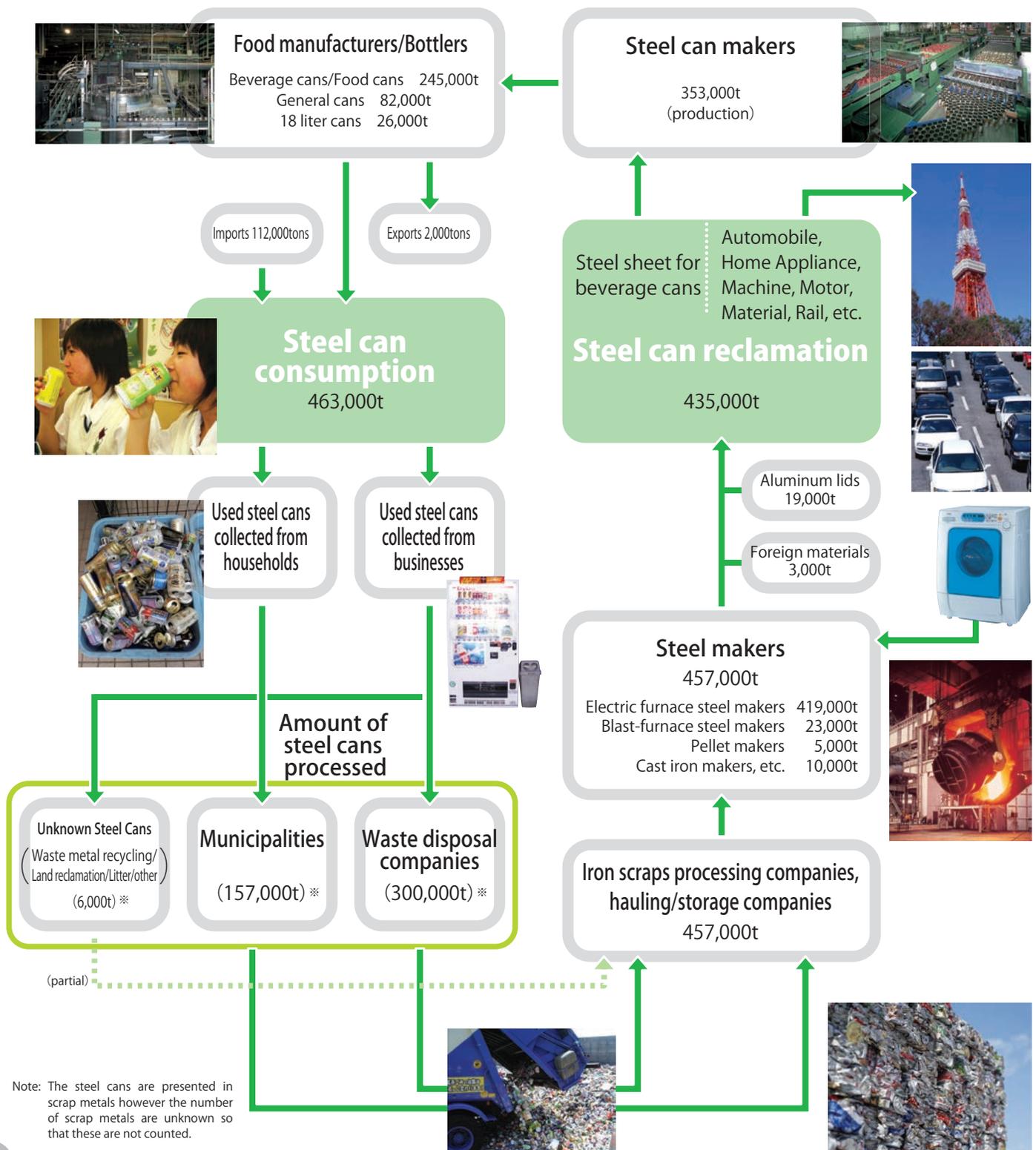
Material ():reference number	Ratio of major and alloy components (%)	Major alloy components (%)
Steel sheets for beverage cans (SPTE T-4 CA)	Fe 99.9 + Carbon 0.02 to 0.06	Aluminum 0.005 Manganese 0.03
Steel plates for cars (SPCE)	Fe 99.99 + Carbon 0.005 to 0.01	Titanium 0.0001
Steel plates for construction (SPCC)	Fe 99.8 + Carbon 0.1	Manganese 0.5 max
Steel wire for construction (SWRM)	Fe 98 + Carbon 0.1 to 0.4	Manganese 0.3 to 1.5
H-type steel (SG415H)	Fe 98 + Carbon 0.1 to 0.4	Manganese 0.4 to 1.7 Chromium 0.85 to 1.25



I Present Conditions for Recycling Steel Cans

2. What Routes are Used to Recycle Steel Cans?

- Used steel cans are collected using separate collection systems or noncombustible collection routes operated by municipalities as well as through business-operated recovery routes for collecting from automatic vending machines, offices and plants. In both cases, steel cans are separated by magnetic separators at recycling facilities and processed into pressed blocks state for easy transportation.
- This iron scrap is purchased by iron and steel makers (mostly electric furnace steel makers) from scrap processors. The steel cans are recycled in many ways such as raw material for producing steel materials for construction, and steel plates for automobiles, refrigerators, washing machines, and new steel cans, etc.



Note: The steel cans are presented in scrap metals however the number of scrap metals are unknown so that these are not counted.

※ () … estimated values



I Present Conditions for Recycling Steel Cans

3. How Much Steel Can is Recycled in Japan ?

The recycling rate for steel cans in FY2016 was 93.9%

The recycling rate in FY2016 achieved the target set by the Industrial Structure Council of the Ministry of Economy, Trade and Industry.

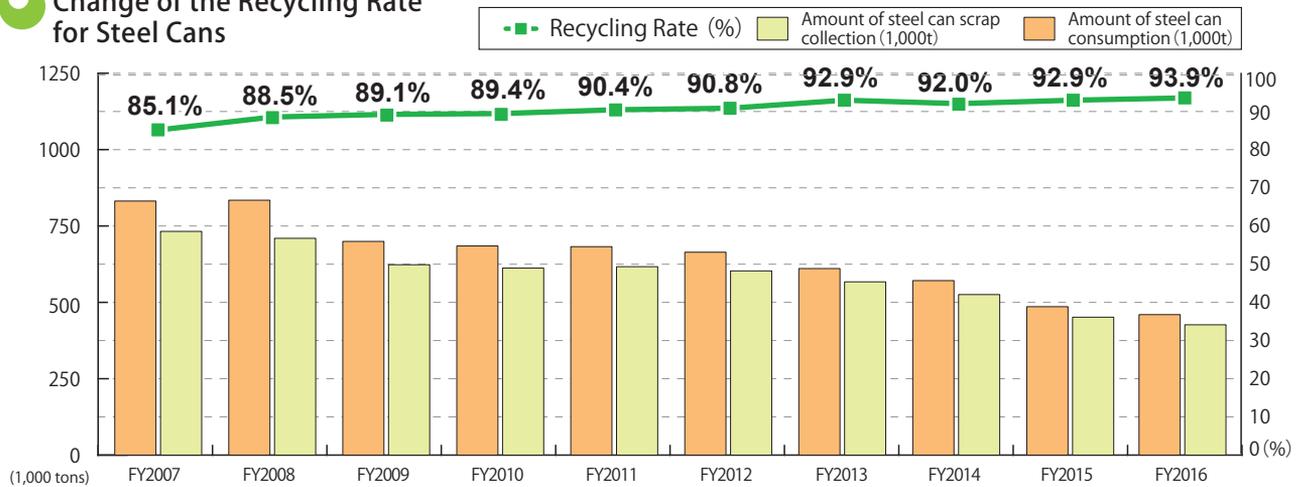
Factors of high recycling rate

- ① The world crude steel production in 2016 was 1,630,000,000 tons, lower than a record high of 1,670,000,000 tons. Furthermore, crude steel production in Japan has surpassed 105,000,000 tons per year, and the demand for it is high. The scrap steel cans are high quality and useful so it is increasingly highly regarded.
- ② The quality of raw materials in steel can scraps has improved year by year, since separate collection has well promoted through citizens' cooperation, separate collection system from municipalities as well as business activities has been fully equipped, and the accuracy of separation and processing at the recycling facilities and scrap processors have improved.
- ③ Since FY2008, we have known parts of the amounts which were shredded because a part of the can scraps shredded were distributed as standard except the can scraps.

Steel Can Recycling Rate of FY2016

$$\frac{\text{Amount of steel can recycling } 434,977 \text{ tons}}{\text{Amount of steel can consumption } 463,076 \text{ tons}} = 93.9 \%$$

Change of the Recycling Rate for Steel Cans



The Recycling Rate by Items

Items	Recycling rate (%)	Index	Method of calculation (Note)
Steel cans	93.9 (FY2016)	Recycling rate	Amount of steel can recycling / Amount of steel can consumption (Steel cans=Beverage cans+Food cans+General cans+Some 18-liter cans)
Glass bottles	68.4 (FY2015)	Recycling rate (cullet utilization ratio)	Amount of re-merchandising / Amount of domestic glass bottles consumption
PET bottles	86.9 (FY2015)	Recycling rate	Amount of PET bottles recycled in domestic and overseas / Amount of designated PET bottles sold
Paper containers/packaging	25.0 (FY2015)	Collection rate	Amount of collection / Amount of discharge by households
Plastic containers	45.3 (FY2015)	Recovery rate	Amount of re-merchandising + Amount of self-collected / Prospective amounts of discharge
Aluminum cans	92.4 (FY2016)	Recycling rate	Amount of recycling of aluminum cans in domestic and overseas / Amount of sales of aluminum cans
Cartons	43.1 (FY2015)	Collection rate	Amount of domestic collection / Amount of cartons used (Included loss paper and old paper)
Cardboard	97.2 (FY2015)	Collection rate	Amount of actual domestic collection / Amount of consumption of cardboard + Balance of amount of cardboard accompanied with exported good sand those with imported goods