# Metal Food Cans do Wonders!

*Essential elements for essential living*

SILGAN CONTAINERS
The Power of Partnership®

**The metal food can for more than 200 years remains one of the most economical, environmentally friendly and, above all, safest packaging forms.[1] Metal food cans offer a comprehensive range of advantages.**

## Keeping Consumers Safe & Healthy

**The metal food can is one of the safest and most robust forms of food packaging. Cans are compact, unbreakable, tamper-proof and tamper-evident.[2]**

- The canning process delivers long-term food quality and product shelf life. Food nutrients are locked in at their peak of ripeness and freshness.[13] Once the cans are sealed and heat processed, the food maintains its high quality for more than two years.
- USDA database shows that canned foods contain comparable nutrients to cooked fresh or frozen products, without the need for additive and preserving agents.[4]
- Some canned products actually contribute more health-promoting nutrients than their fresh counterparts. Fresh vegetables, such as spinach and green beans, lose up to 75% of their vitamin C within 7 days of harvest. Canned tomatoes, carrots, spinach, and pumpkin are rich in antioxidants, such as carotene and lycopene which appears to reduce the risk of certain cancers.[11]
- Americans waste an estimated 27% of the food available for consumption.[16] Canned fruits and vegetables do not spoil like fresh produce resulting in far less waste is produced.

One-half cup of canned tomatoes provides11.8 milligrams of lycopene compared to just 3.7 milligrams found in one medium fresh, uncooked tomato.[11]

Mild heat treatment on canned corn, carrots and spinach enhances the body's absorption of carotenoids, which convert to vitamin A.[11]

- Steel cans have a 100% total barrier performance against light, water, and air.[8, 15]
- There are more than 1,500 varieties of canned food with more unique offerings continuously added. Consumers reported benefits of the metal food container are strength, longer shelf life, ability to stack neatly, economic, quicker to prepare, and good taste.[18]

*"Remember that we put things in cans when they're at the peak of flavor so, you're getting them at their best."* ~Chef Jose Andres, ThinkFood Group.

## Metal Cans are the Recycling Champion

**Steel cans are 100% infinitely recyclable; without loss of its intrinsic properties, no matter how many times it's recycled. Steel's infinite open loop recycling saves energy, protects and conserves resources, and minimizes landfill waste.[2]**

- Steel cans boast the highest recycling rate of all food and beverage packages combined in the world, with a rate of 65% [3] in 2008. During the same period, approximately 20 billion steel cans were recycled into new products.[8]
- Metal packaging is very easy and inexpensive to collect and recycle. Magnetic properties of steel make it easily separated, which contributes to its high recovery rates.[9]
- Steel that is not recycled is harmless to the environment and simply rusts and returns to its natural components.[12]
- Steel is produced with iron ore, carbon and limestone.[5] Every 2,000 pounds of recycled steel saves 3,600 pounds of $CO_2$, 2,500 pounds of iron ore, 1,400 pounds of coal and 120 pounds of limestone.[6]
- Steel cans, on average, contain 28% post-consumer content.[21]
- Making new steel products from recycled steel instead of virgin ore reduces water use by 40%, water pollution by 76%, air pollution by 86%, and mining wastes by 97%.[7]
- Metal is the most valuable commodity in the post-consumer waste bin. The high scrap value offsets collection costs which helps finance the extensive collection and recycling infrastructure for plastics, papers, and glass.[10]

A single recycled steel can conserves enough energy to:

- Wash a load of laundry
- Watch TV for an hour
- Make a pot of coffee
- Power a 60-watt CFL light bulb for 26 hours[8]

# Metal Food Cans do Wonders!

*Essential elements for essential living*

SILGAN CONTAINERS
The Power of Partnership®

## Delivering Supply Chain Efficiency

**Easy handling, fast filling with low spoilage make cans a natural choice for streamlined, eco-efficient production and liable distribution.**

- Food cans don't require any energy for storage.[10]
- Food cans require up to 70% less energy throughout the supply chain compared to frozen foods.[10]
- Cans require only minimal secondary or transport packing during shipment because of its inherent strength.
- Due to cans unique stacking ability, products packed in steel are easily stored and offer a more energy efficient system than refrigerated or frozen food.
- In the retail environment, steel packaging can also be easily stored, handled and stacked. It is virtually impossible to spill or break.
- Canned foods' long shelf-life and preserved taste let consumers stock up, stack up and stay supplied.
- The production process of steel for packaging now accounts for far fewer emissions than ever before—they are 45% lower since 1975.[8]
- $CO_2$ emissions from food canning can be 28% less than by freezing in plastic bag.[19]
- Silgan has begun converting from wood to plastic pallets made of recycled material, resulting in the equivalent of 85,455 trees saved spanning across 2,136 acres.

## Silgan Containers is Committed to Sustainable Practices

**In today's environmentally aware marketplace, choosing packaging formats with clear sustainability credentials can deliver a competitive advantage for businesses.**

As the leading U.S. manufacturer of steel and aluminum food cans, Silgan Containers strives for continuous improvement in quality that benefits each tenet of sustainability.

- Silgan Containers' manufacturing facilities recycle 100% of scrap metals.[17]
- Silgan Containers' manufacturing plants utilize high energy efficient light systems. The estimated energy conserved in just one year is equivalent to planting 1,476 acres of trees, removing 1,161 cars from the road, or saving 523,000 gallons of gas.[20]
- Over the last two years, Silgan has spent $2MM on lighting projects that are estimated to save up to 45% in kWh where new lighting systems have been installed.
  - ~Estimated 45% waste reduction of kWh in 2009
  - ~Estimated 43% waste reduction of kWh in 2010
- Between the year 2000 and 2009, Silgan Containers has reduced Hazardous Air Pollutant (HAP) emissions by 76%.[17]
- Silgan Containers has reduced Volatile Organic Compound (VOC) emissions by 42% since 2000.[17]
- Silgan Containers backs the *Curbside Value Partnership* — a community based recycling program, to further increase already impressive recycling participation. Since its inception, there has been a 22% average increase in overall recycling volume in 40 partner communities.[8]

### Sources


1 "Food Cans Overview." The Can Manufacturers Institute. 2010.
2 "Canned Food. Feeding the World for 200 Years." The Can Manufacturers Institute. [Report]. 2010.
3 "2008 Overall Steel Recycling Rate Hits All-Time High." Steel Recycling Institute. December 10, 2009.
4 Samonds, K. Nutrition Study Phase I, Phase II, Phase III. University of Massachusetts. 2000.
5 Ashby, Michael F.; David R. H. Jones (1992) [1986]. *Engineering Materials 2* (with corrections ed.). Oxford: Pergamon Press. ISBN 0-08-032532-7.
6 "Steel Recycling Starts In at the Home." Steel Recycling Institute. Retrieved June 29, 2010.
7 Weld, William F.; Coxe, Trudy; and Struhs, David B. The Solid Waste Management Resource Guide for Massachusetts Schools, 1996.
8 Woods, Jim. Steel Recycling Institute. June 21, 2010.
9 "Collection of Steel." Recycle-more.uk.org [Online]. Retrieved June 29, 2010.
10 "Food Cans: Infinitely Recyclable." The Can Manufacturers Institute. 2007.
11 U.S. Department of Agriculture, Agricultural Research Service. USDA National Nutrient Database for Standard Reference, Release 18. Nutrient Data Laboratory Home Page. http://www.ars.usda.gov/ba/bhnrc/ndl. 2005.; Dewanto, V., X. Wu, and R.H. Liu. Processed sweet corn has higher antioxidant activity. Cornell University. 2002.
12 International Iron and Steel Institute Brochure. Ca. 2006.
13 Rickman, J., Barrett, D. and Bruhn, C. "Nutritional comparison of fresh, frozen and canned fruits and vegetables." Journal of the Science of Food and Agriculture, Vol. 87. Issues 6 and 7. April and May 2007.
14 Klein, B. and Kaletz, R. Nutrient conservation in canned, frozen, and fresh foods. University of Illinois. 1997.
15 FDA's Center for Food Safety and Applied Nutrition, Centers for Disease Control and Prevention, Moffett Center – National Center for Food and Safety Technology, FDA, *Journal of Food Protection*, *International Journal of Food Microbiology*, *International Journal of Food Science and Technology*, U.S. Department of Health and Human Services, United States Department of Agriculture (US DHHS/USDA), Iowa State University Extension, *USA Today*, *Food Chemical News*, *Chicago Daily Herald*, Canadian Food Inspection Agency, Packaging Glossary, Food Product Design, National Institute for Health and USDA Food Safety and Inspection Service.
16 Martin, Andrew. *One Country's Table Scraps, Another Country's Meal.* New York Times. May 18, 2008.
17 Cornish, Dennis. Director of Environmental Engineering, Environmental Services, Silgan Containers. July 7, 2010.
18 "Can Contemporization Quality Initiative." MarketVision Research®. December, 2007.
19 "US Life Cycle Assessment Study." Network for Business Innovation & Sustainability (NBIS) and the Institute for Environmental Research & Education (IERE). 2007.
20 Barger, Scott. Director of Project Engineering, Silgan Containers. July 21, 2010.
21 Woods, Jim. Steel Recycling Institute. October 18, 2010.