pdi

PLASTIC
DRUM
INSTITUTE

RIPA
REUSABLE INDUSTRIAL PACKAGING ASSOCIATION

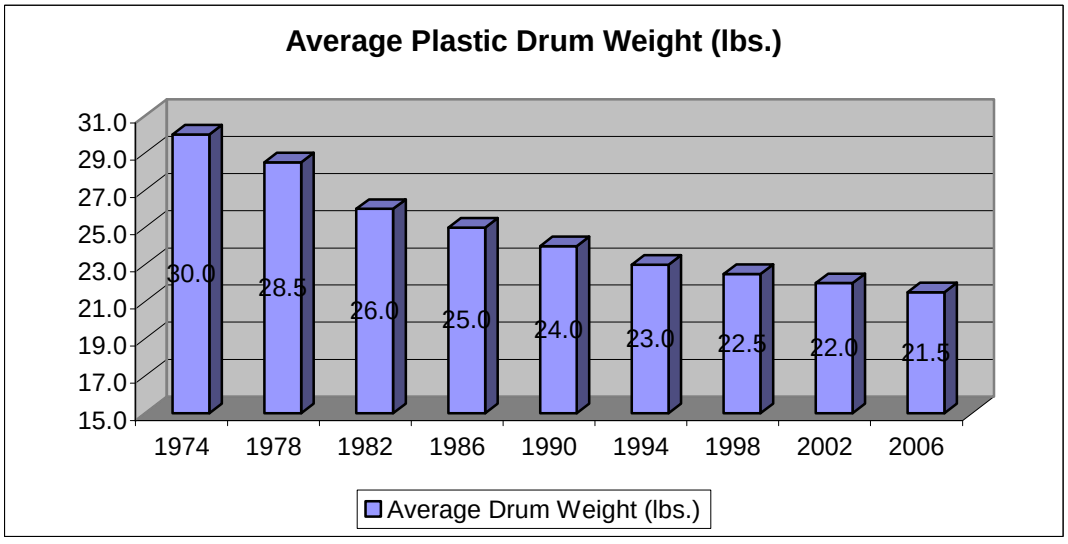
# PLASTIC DRUM LIFE CYCLE MANAGEMENT

***The plastic drums life cycle is more sustainable than many realize.***
***And the story just keeps getting better!***

Using all three parts of the Waste Hierarchy (REDUCE, REUSE, RECYCLE), the plastic drum industry, along with the reusable industrial packaging industry has built a remarkable record of responsible packaging stewardship, often outperforming its consumer packaging counterparts. This is how all three management strategies are being implemented.

REDUCE

Since their introduction into the industrial packaging marketplace over 40 years ago, plastic drums have made significant progress by becoming lighter, while continuing to meet rigorous field performance requirements. The chart below shows industry average drum weights for 55-gallon tighthead drums.

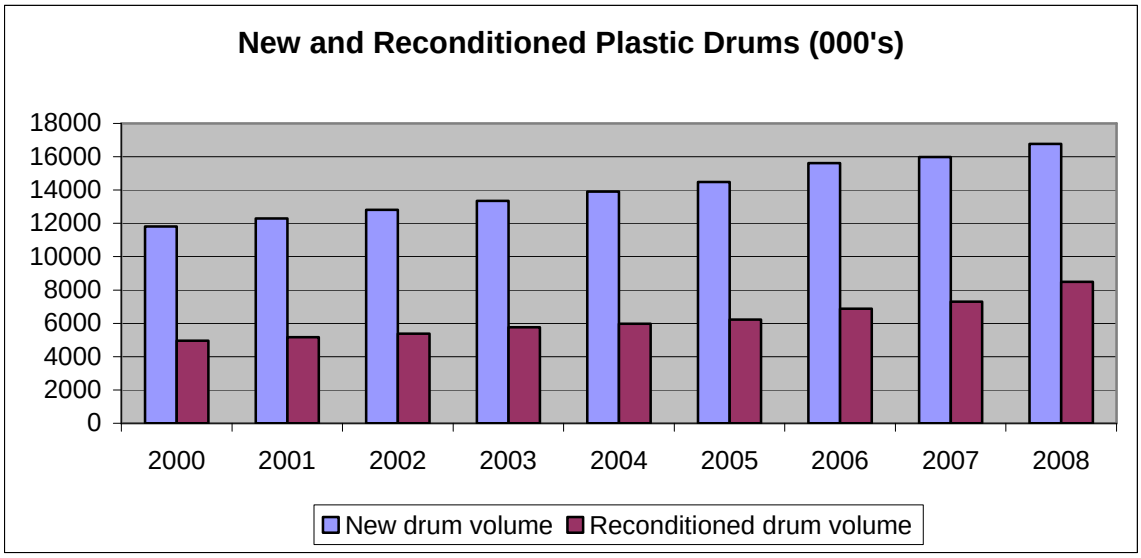



Source: PDI industry estimates

The combination of improved designs, advancements in processing technologies and materials has led to this continuous improvement record. Customer demands for lighter, stronger and more cost-effective packaging has led to ongoing research by drum and resin manufacturers. They promise more (that is, less) to come.

REUSE

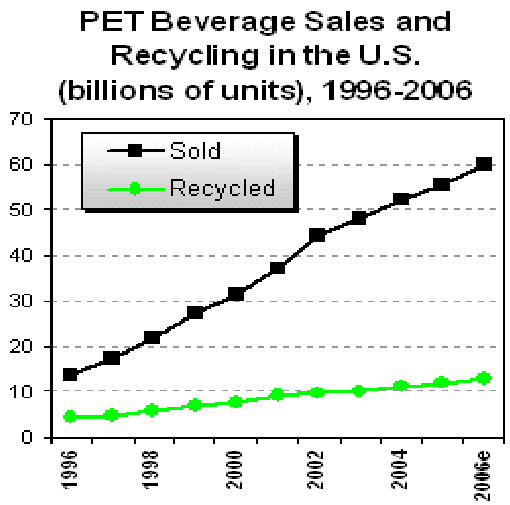
By combining industry statistics from plastic drum manufacturers and plastic drum reconditioners, we can see that each year, nearly 50% of new drum volume is returned to the reconditioning industry:




Source: PDI and RIPA industry estimates

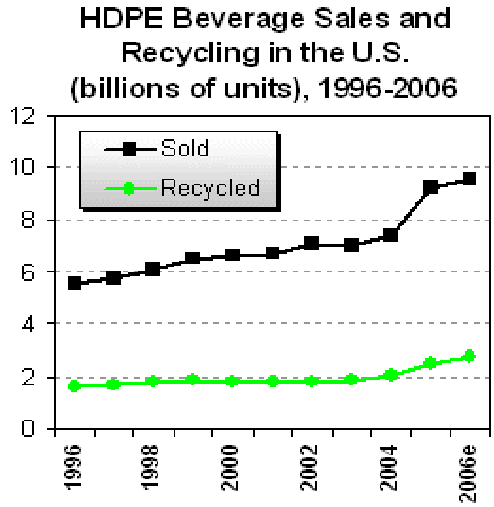
Of these returned drums, approximately 70% are reconditioned annually, and put back into service as industrial containers. This process saves energy, reduces waste, and significantly reduces greenhouse gas emissions.

These rates can be compared to return rates of consumer market containers that, on average, are typically in the 25 – 28% range:




CRI data derived from American Plastics Council, National Association of PET Container Resources. Includes dairy.





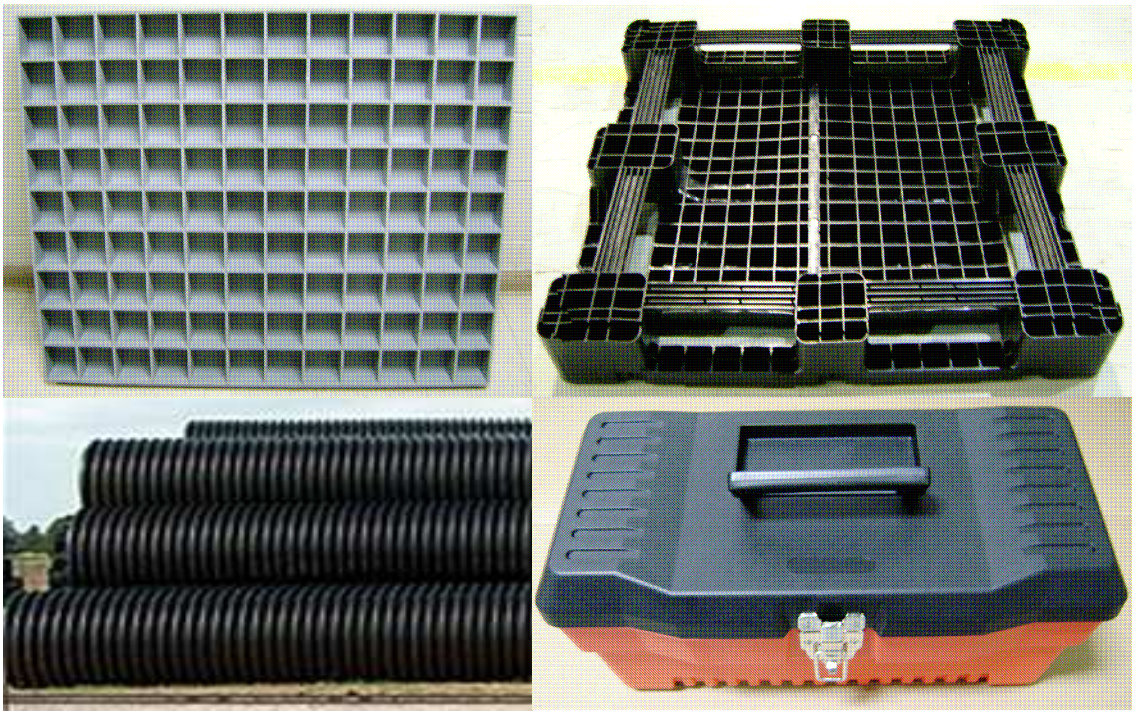

CRI data derived from American Plastics Council. Includes dairy.

Where do the rest of the new drums go? While no comprehensive statistics have been kept on this question, industry experts indicate most drums go to one of the following uses:

- Filled and exported to other countries
- Reuse in private drum fleets (returned and re-filled)
- Long term (> 1 year) storage containers
- Other non-industrial uses (trash bins, rain barrels, ballast, dock floats, etc.)
- Incineration, as part of a lading disposal process
- Sold to recyclers outside of the industrial container industry

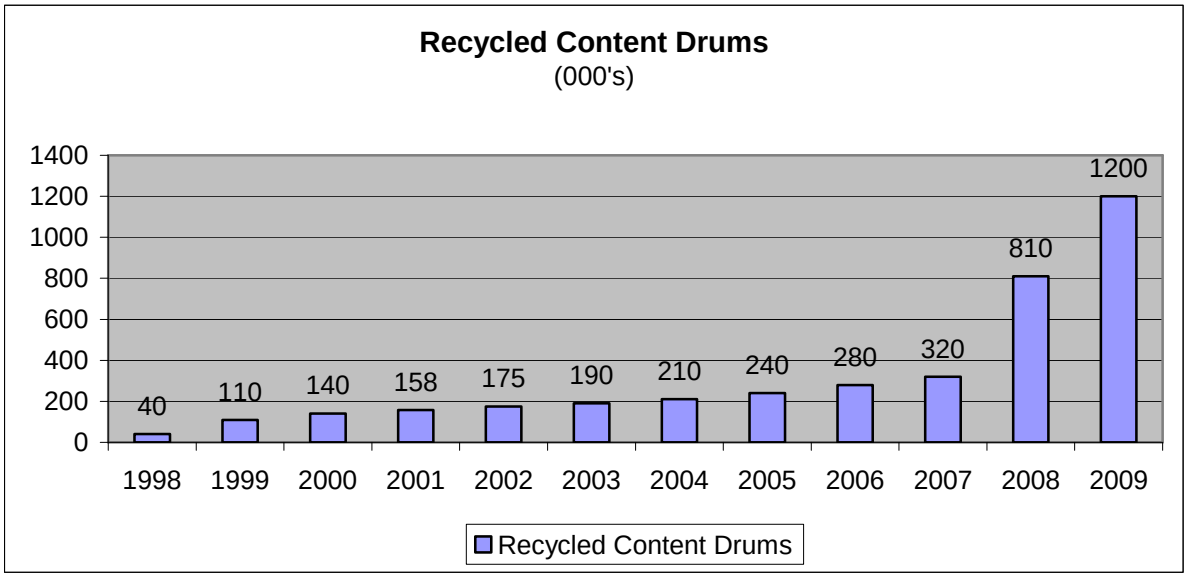
RECYCLE

At the end of their useful life, drums that don't go into the use-categories cited above are typically cleaned and shredded, to recover the material value of the plastic. After grinding, the plastic is then re-molded into a wide variety of new products, such as pallets, truck bed boxes, corrugated drainage pipe, tires, and even park benches.



Recycling just one plastic drum is equivalent to recycling 500 beverage bottles, or over 2,000 plastic grocery bags!


Even new plastic drums can be made from recycled drums, a growing industry trend. Since the US Department of Transportation (DOT) gave approval in 1997 to make new drums from recycled material the growth in this trend has accelerated. These drums are manufactured under carefully monitored quality controls, as mandated by the DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA).




Source: PDI industry estimates

The application of co-extrusion molding technology has also greatly increased the use of recycled materials in recent years. This trend is expected to continue as new raw material prices rise, and recycled material drums gain wide industry acceptance.

## CONCLUSIONS

Throughout its history, the plastic drum industry has been a responsible packaging steward, using a combination of strategies to effectively manage the life cycle of its products. These strategies include reduced container weights, increased reuse of empty containers, and recycling the materials into new consumer and industrial products. These practices have helped to limit the waste streams associated with this type of industrial packaging, and have reduced greenhouse gas emissions. The industry continues to support and advance this progress through continuous improvement of practices, designs and materials.

The industry will continue to expand its responsible packaging management efforts through innovative, industry-led container recovery and reuse programs, including positive incentives to recover drums with remaining economic value.

This paper was prepared and endorsed by the Plastic Drum Institute (PDI) and the Reusable Industrial Packaging Association (RIPA)

The Plastic Drum Institute (PDI) is a trade association, which represents manufacturers of industrial plastic containers, polyethylene resin manufacturers, closure and ring manufacturers, industrial container recyclers and equipment manufacturers in North America.

The Reusable Industrial Packaging Association (RIPA) is a trade association, which primarily represents industrial packaging reconditioners whose membership also includes manufacturers of industrial plastic and closure and ring manufacturers in North America.