

Scrap Tires

Banned from most landfills, tires can be recycled or used to generate fuel.

SIXTY PERCENT of the rubber consumed in the United States is used to make tires. Raw materials used to make tires include rubber (41 percent), carbon black (28 percent), steel (15 percent) and other materials (16 percent).

In 2005, 325 million new tires were shipped for use by cars and trucks. Of these, 258 million (79 percent) were for passenger cars and 67 million (21 percent) were for trucks. In addition, 67 million (20 percent) were "original equipment" tires and 258 million (80 percent) were replacement tires.

In 2003, 291 million scrap tires were generated. Two-thirds were from passenger cars, and the remainder came from trucks, heavy equipment, aircraft, off-road and scrapped vehicles.

Scrap tires present unique recycling and disposal challenges because they are heavy, bulky and made from a variety of materials. The biggest market for scrap tires is tire-derived fuel (TDF), which is a low-sulfur, high-heating value fuel. Scrap tires can be recycled as whole or split tires, or as crumb (ground) or shredded rubber. Whole tires are used for artificial reefs and playground equipment; split tires for floor mats, belts and dock bumpers; crumb rubber for mudguards, carpet padding, tracks and athletic surfaces, and rubberized asphalt; and shredded tires for road embankment or roadfill material.

Chaz Miller is state programs director for the National Solid Wastes Management Association, Washington, D.C. E-mail the author at: cmiller@envasns.org.

Sources:

"Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2003," Office of Solid Waste, Washington, D.C., www.epa.gov/osw
 "U.S. Scrap Tire Markets 2003," Rubber Manufacturers Association, Washington, D.C., www.rma.org
 Tire Retread Information Bureau, www.retread.org

*2003 EPA estimates.

Scrap Tires Municipal Solid Waste (MSW) Facts:

Generated:

- 4.7 million tons or 2.0% by weight.*
- One scrap tire per person per year.
- A car scrap tire weighs 20 pounds.
- A truck scrap tire weighs 100 pounds.
- A steel-belted radial car tire contains 2.5 pounds of steel.

Recycled:

- 1.7 million tons or a 36% recovery rate.*
- 233 million tires for an 80% recovery rate in 2003 (industry data).

Recycled Content:

- New tires can have a small amount of recycled rubber.
- Retreads contain 75% recycled content.

Composted:

- Shredded tire chips can be used as a bulking agent in composting wastewater treatment sludge.

Incinerated or Landfilled:

- 3.07 million tons or 1.9% of discarded MSW by weight.*
- 15,000 Btus per lb., slightly higher than coal.
- Unlandfilled scrap tires can be a mosquito breeding area.
- If landfilled tires fail to compress,

they can rise up and resurface.

- 33 states ban whole tires from landfills.
- 12 states ban all scrap tires from landfills.

Scrap Tire Stockpiles:

- 275 million scrap tires remain in stockpiles.
- 75% reduction since 1990.

Landfill Volume:

- EPA landfill volume data does not include tires.

Source Reduction:

- Rotate and balance tires every 6,000 miles and maintain recommended air pressure levels to ensure long life.
- 17 million retreads sold in North America in 2005.

Scrap Tire Markets:

- 45% of recovered tires go to tire derived fuel (TDF).
- Civil engineering (19%) and ground rubber (10%) are next largest markets.

End-Market Specifications:

- Each market has its own specification.

Scrap Tire Value:

- Generators usually pay a tip fee.

