

Strategy for Eco-Friendly Tires

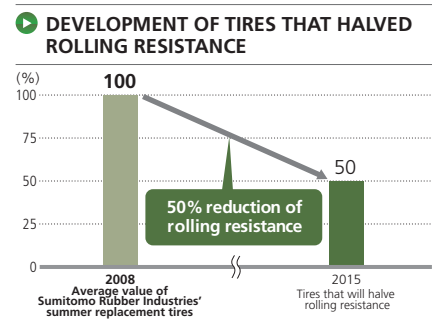
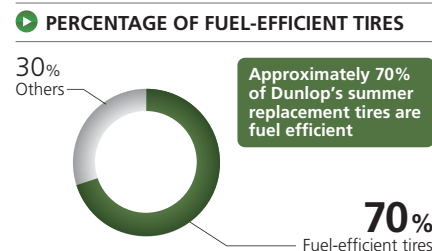
Reflecting growing concern over global warming, competition in the development of fuel-efficient tires and other eco-friendly tires is expected to intensify. Amid such circumstances, Sumitomo Rubber Industries engages in the development and product enhancement of eco-friendly tires, specifically in the three areas of fuel-efficient tires, fossil resource-free tires, and runflat tires.

1. Fuel-Efficient Tires

In January 2010, a system that labels tires according to their fuel efficiency commenced in Japan. Before starting this system, each company had its own standards for "fuel-efficient tires," making it difficult to distinguish differences in performance. Thanks to this new system, however, categorization based on unified industry standards enables the clear differentiation of performance characteristics. The introduction of the labeling system will likely further accelerate the popularization of fuel-efficient tires. The ENASAVE series, which is the Company's eco-friendly flagship brand, includes three items in all 105 sizes that conform to the system's standard of fuel efficiency. Therefore, approximately

70% of Dunlop's summer replacement tires are fuel-efficient tires.

In addition, in its medium- to long-term technological theme for fuel-efficient tires, Sumitomo Rubber Industries is focusing on the development of a tire that reduces rolling resistance by 50%. When realized, the new tire will enhance an automobile's fuel efficiency by approximately 10% compared with conventional products, and therefore, early commercialization is expected. To complete development by 2015, Sumitomo Rubber Industries is leveraging its digital simulation technologies to move forward on R&D activities on both the materials and fuel efficiency fronts.



Fuel-Efficient Tire Labeling System

Established by the Japan Automobile Tyre Manufacturers Association (JATMA) as the industry's voluntary standard, this labeling system defines fuel-efficient tires as tires that meet a certain value in both good rolling resistance and wet grip performance. In tandem with this, a system is being created that provides appropriate labeling information for consumers.

ENASAVE **ET**



ENASAVE **EC202**



ENASAVE **RV 503**



2. Fossil Resource-Free Tires



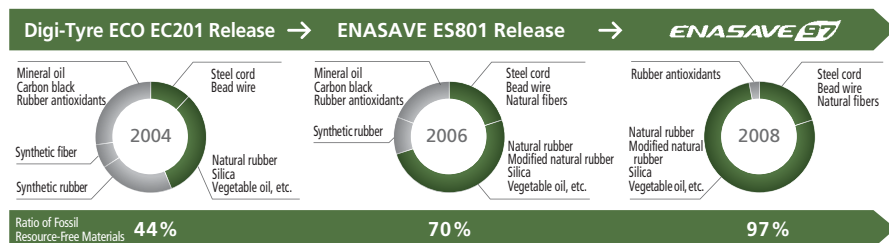
One of Sumitomo Rubber Industries' proprietary approaches is eco-friendly tires that make use of fossil resource-free materials. The Company is currently working to reduce the proportion of fossil resource-based materials from almost 60% in conventional tires. Efforts to accomplish this reduction are undertaken as an original project themed, "What the tire can do to

help realize a recycling society." After conducting various research projects, Sumitomo Rubber Industries succeeded in the development of technology that makes efficient use of modified natural rubber, and in 2006, it introduced the ENASAVE ES801 tire, of which 70% is made from fossil resource-free materials. Then in 2008, the Company developed EN rubber, the "third rubber" made mainly from natural rubber and featuring airtightness and durability equivalent to synthetic rubber, and also completed the development of the ENASAVE 97 tire comprised 97% of fossil resource-free materials. Compared with the

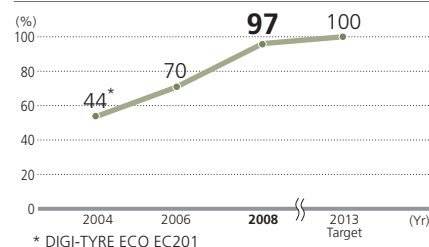
previous model, the Digi-Tyre ECO EC201 tire, the ENASAVE 97 tire reduced rolling resistance by 35%, while decreasing CO₂ emissions per vehicle-kilometer driven by 36% through its entire product lifecycle, from raw materials and production to utilization, disposition and recycling.

Furthermore, Sumitomo Rubber Industries is currently striving to develop tires that are 100% free of fossil resources by 2013. Sumitomo Rubber Industries makes every effort to research biomass and other materials to replace the remaining 3% of fossil materials being used—research that will help complete the development of the ultimate eco-tire.

▶ WHAT IS NON-FOSSIL MATERIAL TECHNOLOGY?—A TECHNOLOGY TO REPLACE SUCH FOSSIL RESOURCES AS PETROLEUM AND COAL WITH OTHER NATURAL RESOURCES



▶ HISTORY OF DEVELOPMENT OF TIRES MADE FROM FOSSIL RESOURCE-FREE MATERIALS AND TARGET



■ Team ENASAVE: A Customer-Participation-Type Afforestation Promotion Activity

Team ENASAVE is a campaign that plants one mangrove seedling for each set (four tires) of Dunlop ENASAVE eco-friendly tires purchased by a customer. In 2009, in Ranong Province, Thailand, a total of 137,424 seedlings were planted.

- Name of afforestation project: Dunlop "Creation of Mangrove Forest for the Future Project"
- Afforestation Location: Ranong Province, Thailand
- Supported by: OISCA International, the Ministry of Natural Resources and Environment, Thailand, Ranong Province and other organizations



We plant trees in cooperation with local people in Ranong Province, Thailand

3. Runflat Tires



Runflat tires are able to run for some distance, even when flat. Given this, they can be considered eco-friendly as they conserve resources and improve fuel efficiency by reducing the weight of automobiles—they eliminate the need to carry a heavy spare tire.

In the 1970s, Dunlop developed the world's first runflat tire system. Then, in 1995, they developed the first-generation runflat tire with reinforced sidewalls. This tire could use standard wheels and was available with the

practical application of Dunlop Self-Supporting Technology (DSST), a technology compatible with standard tires. Following this achievement, in 2000, Dunlop developed the second-generation runflat tire by adopting a unique shape, the CTT profile, and in 2003, it developed the third-generation runflat tire, for which a new low-heat-generation component was developed and adopted. These efforts contributed to the realization of reduced weight and a more comfortable ride.

In 2009, the fourth-generation runflat tire was released, realizing a ride comfort equivalent to or better than standard tires, while securing runflat performance. When tires go flat while driving, the flat tire will flex significantly with each rotation, generating heat in

the reinforcement layer. In order to address this issue, Sumitomo Rubber Industries applied a heat-control technology and succeeded in improving the tire's driving distance when flat by 2.3 times compared with third-generation products. This enabled a 30% reduction in the thickness of the reinforcement layer, thus realizing ride comfort equivalent to or better than standard tires.

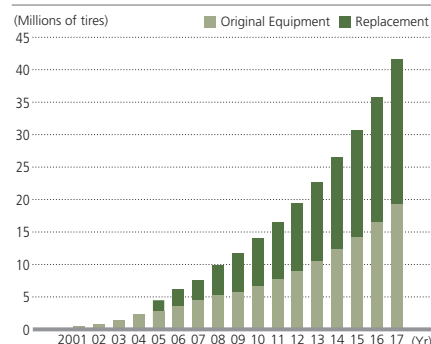
Demand for runflat tires was approximately 10 million units worldwide in 2008, and demand is expected to rise to 40 million over the next 10 years. Given this situation, Sumitomo Rubber Industries will make every effort to advance the development of runflat tires, contributing to society from the aspects of both safety and the environment.

HISTORY OF RUNFLAT TIRE TECHNOLOGY DEVELOPMENT

1970 DENOVO	1972 DENOVO2 (DENLOC)	1979 TD tire	1995 DSST	2000 CTT runflat	2003 Low-heat-generation component for CTT runflat adopted
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WORLDWIDE DEMAND FOR RUNFLAT TIRES (INTERNAL ESTIMATE)



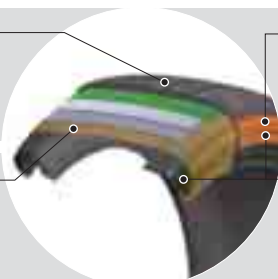
Heat-Control Technology Applied to the Fourth-Generation Runflat Tires

CTT profile

Adopting the involute function, the new tire realizes runflat performance with a reinforcement layer in the sidewalls and enhances general performance, including ride comfort through a round tread profile, while achieving lighter weight.

Aramid case

A rigid aramid case reduces deflection when the tire goes flat and curbs heat generation in the reinforcement layer of the sidewalls.



Dimpled side

Dimples on the sidewalls generate turbulent airflow, displaying excellent heat-release effects.



Heat conductivity enhancement compound

Enhanced heat conductivity in the reinforcement layer in the sidewalls; the rubber used in the sidewalls will dissipate the heat concentrated in the reinforcement layer while driving with a flat tire.