

Solo Cup in 2007: Dollars in the Details

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A collage of images related to plastics. It features several clear plastic bottles in various orientations (upside down, right side up). In the top left, there is a document titled "History of Plastics". In the top right, there is a circular diagram titled "Properties of Plastics" with several small icons around it. At the bottom, there is a row of recycling symbols (triangles with numbers) and a small graphic of a recycling bin. The word "Plastics" is written in a large, bold, blue font in the center.

Plastics

A plastic material is any of a wide range of synthetic or semi-synthetic organic solids that are moldable. Plastics are typically organic polymers of high molecular mass, but they often contain other substances. They are usually synthetic, most commonly derived from petrochemicals, but many are partially natural.

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What is rubber? Thecasesolutions.com
Natural rubber, also called *rubber* or *caoutchouc*, as initially produced, consists of soluble polymers of the organic compound isoprene, with minor impurities of other organic compounds plus water.



History of Rubber

Manufacturing process

Advantages and Disadvantages of Rubber

Uses of Rubber

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History of Rubber

In the early 1920's Stalin directed the Soviet agricultural community to find an alternative source of natural rubber to overcome dependence upon British colonies. A number of plants were identified but it was not until 1931 that a botanist identified TKS in the mountain plateaus of Kazakhstan and Uzbekistan.

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Remarkably by 1940 Soviet scientists reported two TKS varieties with roots weighing 25 grams and containing 15% rubber by dry weight.

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The Soviet
program terminated by
the end of WWII as most
TKS growing areas were
destroyed and the promise of
new synthetic rubber
was on the horizon. ..

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From 1942

to 1945 the USDA conducted a feasibility study which included growing the crop in 28 states, developing a process for extraction of the rubber and production of tires for testing.

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Using
Hevea-derived
natural rubber as a
standard, the investigations
included Guayule,
Parthenium agentatum,
and Russian Dandelion,
Taraxacum kok-saghyz
(TKS).

TKS was demonstrated to be a viable source of domestically-produced natural rubber, compatible with associated rubber manufacturing process, comparable to Hevea, and superior to Guayule.

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