

Michelin tyres will be 100 per cent sustainable by 2050

- By 2050, Michelin tyres will be made entirely from renewable, recycled, biosourced or otherwise sustainable materials.
- Michelin reveals how to make a tyre 100 per cent sustainable.
- An objective being met with powerful research & development capabilities and bold partnerships with innovative start-ups.

Inspired by the [VISION](#) concept tyre introduced in 2017, an airless, connected, rechargeable and entirely sustainable solution, the Michelin Group is committed to making its tyres 100 per cent sustainable by 2050.

Today, nearly 30* per cent of the components used in the manufacture of tyres produced by the Michelin Group are already made from natural, recycled or otherwise sustainable raw materials.

A Michelin tyre is a high-tech product comprising more than 200 ingredients. The main one is natural rubber, but the many ingredients also include synthetic rubber, metal, fibres and components that strengthen a tyre's structure, like carbon black, silica and plasticisers (resins, etc.). Incorporated in perfect proportions, these materials interact to deliver an optimal balance of performance, driveability and safety, while steadily reducing the tyre's environmental impact.

Michelin reveals how to make a tyre 100 per cent sustainable

Check out [the video](#) showing you the recipe

An objective being met with powerful R&D capabilities....

Michelin's maturity in materials technology stems from the strength of its R&D capabilities, which are supported by 6,000 people working in seven research and development centres around the world and mastering 350 areas of expertise. The commitment of these engineers, researchers, chemists and developers has led to the filing of 10,000 patents covering tyre design and manufacturing. They work hard every day to find the recipes that will improve tyre safety, durability, ride and other performance features, while helping to make them 100 per cent sustainable by 2050.

....and bold partnerships with innovative companies

Michelin is also aware that the speed and nature of innovation requires new forms of cooperation, which is why it has forged partnerships with innovative start-ups whose advances offer unlimited prospects. The developed technologies go well beyond the world of tyres and could be used in other industries, enabling them to benefit as well from recovered raw materials that are infinitely reusable. These technologies will also make it possible to recycle polystyrene and recover carbon black or pyrolysis oil from used tyres.

Axens and IFP Energies Nouvelles, the two companies that are spearheading the BioButterfly project, have been working with Michelin since 2019 on producing bio-sourced butadiene** to replace petroleum-based butadiene. Using the biomass from wood, rice husks, leaves, corn stalks and other plant waste, 4.2 million tonnes of wood chips could be incorporated into Michelin tyres every year.

Signed in November 2020, the partnership between Michelin and Canada-based Pyrowave can produce recycled styrene from plastics found in packaging, like yogurt pots and food trays, or in insulating panels. Styrene is an important monomer used to manufacture not only polystyrene but also synthetic rubber for tyres and a wide variety of consumer goods. Eventually, tens of thousands of tonnes of polystyrene waste could be recycled back into its original products as well as into Michelin tyres every year.

The revolutionary process developed by French start-up Carbios, which will be based on a Michelin site from Autumn 2021, uses enzymes to deconstruct PET*** plastic waste into its original pure monomers, which can be infinitely recovered and reused to make new PET plastics. One of these recovered plastics just happens to be the polyester yarn used in tyre manufacturing. Some four billion plastic bottles could potentially be recycled into Michelin tyres every year.

Lastly, Michelin announced in February 2021 that it will launch the construction of its first tyre recycling plant in the world with Enviro. This Swedish company has developed a patented technology to recover carbon black, pyrolysis oil, steel, gas and other new, high-quality reusable materials from end-of-life tyres. It will enable everything in these tyres to be recovered and reused in several types of rubber-based production processes.

Michelin also supports the circular economy, as attested by its participation in the European BlackCycle consortium. This project, which is coordinated by the Group and financed by the European Union, brings together 13 public- and private-sector partners to design processes to produce new tyres from end-of-life tyres.

* In 2020, 28 per cent of the materials used in manufacturing Michelin Group tyres were sustainable.

** Butadiene is one of the components in the synthetic rubber used to make tyres.

*** Polyethylene terephthalate (PET) is a plastic that is currently oil based, with its two monomers, ethylene glycol and terephthalic acid, being derived from petroleum. It is used to make one of the main polyester fibres used in tyre reinforcements.

For further information on the Michelin tyre range visit <https://business.michelin.co.uk>

Ends

Michelin, the leading mobility company, is dedicated to enhancing its clients' mobility, sustainably; designing and distributing the most suitable tyres, services and solutions for its clients' needs; providing digital services, maps and guides to help enrich trips and travels and make them unique experiences; and developing high-technology materials that serve a variety of industries. Headquartered in Clermont-Ferrand, France, Michelin is present in 170 countries, has 123,600 employees and operates 71 tyre production facilities which together produced around 170 million



tyres in 2020. (www.michelin.com)

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