MICHELIN CROSSCLIMATE 2

205/55R16 94V XL M+S

EPD®

THE INTERNATIONAL EPD® SYSTEM

Environmental Product Declaration

In accordance with ISO 14025:2010

EPD® REGISTRATION NUMBER: S-P-04336

ISSUE DATE: 2021-10-04

VALIDITY DATE: 2026-10-04

Michelin is proud to communicate this new
Environnemental Product Declaration (EPD),
in accordance with the International EPD® System,
for the new ***MICHELIN CROSSCLIMATE 2*** **tire**
(205/55R16 94V XL M+S) launched in 2021.

The EPD is based on verified life cycle analysis (LCA) data.
It summarizes and communicates transparent and comparable information about the environmental impact of the product at each phase of its life cycle, to inform our customers and other interested parties.

Following the first EPD of the tire industry released in 2020 for the MICHELIN e·PRIMACY tire, this document demonstrates the Michelin group's strong commitment to put the reduction of environmental impacts at the heart of its sustainable growth strategy.

OUR PURPOSE

OFFERING EVERYONE A BETTER WAY FORWARD

Because we believe that mobility is essential for human development, we are innovating passionately to make it safer, more efficient and more environmentally friendly.

Our priority and firm commitment is to offer our customers uncompromising quality.

Because we believe that all of us deserve personal fulfillment, we want to enable everyone to do his or her best, and to make our differences a valuable asset.

Proud of our values of respect for customers, people, shareholders, the environment and facts, we are sharing the adventure of better mobility for everyone.

Tomorrow, everything at Michelin will be sustainable.
Florent Menegaux, Chief Executive Officer

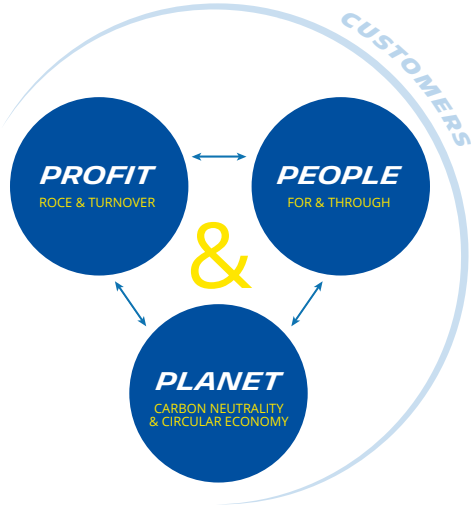
MICHELIN ALL-SUSTAINABLE APPROACH

Our vision of the future is founded first and foremost on the realities of today and tomorrow.

Our growth is based on fostering the **right balance**, as expressed in our future-facing **All-Sustainable** approach, between:

- **Development and personal fulfillment** of all **PEOPLE** inside and outside the company
- **Economic development** **PROFIT**
- **Protection of the planet and its inhabitants** **PLANET**

Leveraging our unrivaled capabilities, we innovate to help humanity conquer new frontiers for a better life in motion.

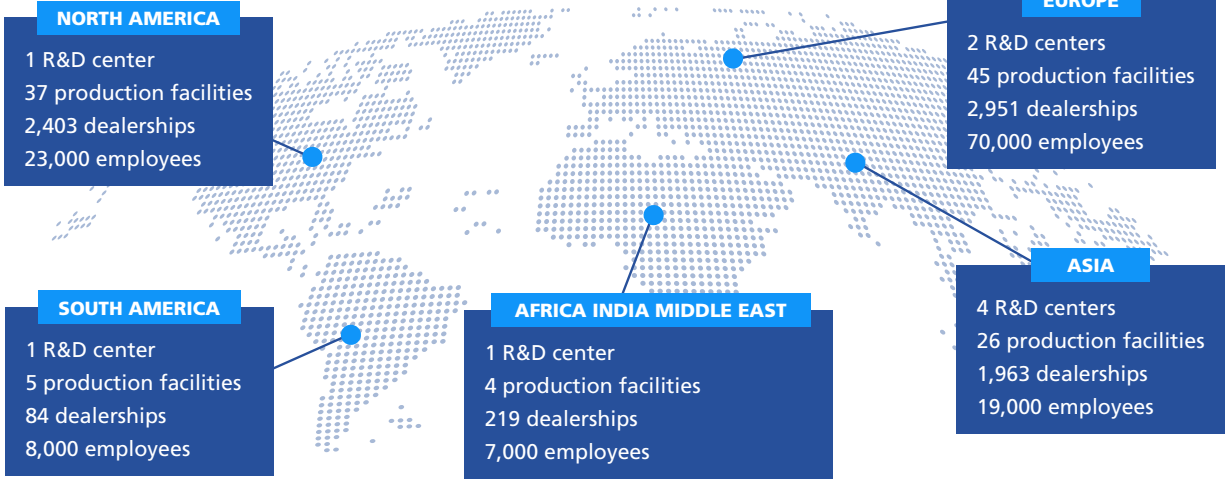


All-Sustainable
is both a daily imperative
and a compass for the future.

MICHELIN AT A GLANCE

Sustainable mobility enabler

For more than a century, Michelin has constantly innovated to improve the mobility of people and goods. Today, the Group is the leader in tire technology for every form of mobility, delivering services that improve their efficiency and solutions that make travel easier and more fulfilling. Michelin enjoys unrivaled expertise in flexible composites and their applications, which it markets, in addition to tires, to a broad range of customers and industries.



R&D
6,000
people
in **9** countries

PRODUCTION
117
facilities
in **26** countries

DEALERSHIP
7,600
proprietary or
franchised centers
in **30** countries

SUSTAINABILITY IS PART OF MICHELIN'S HISTORY OF INNOVATION

1946 — 1987

The radial tire: safer, longer lasting – offering up to four times higher mileage than a conventional tire – and more economical. Michelin's extensive research resulted in this major technological breakthrough. The first radial car tire MICHELIN X was released in 1949, followed by truck (1952), earthmover (1959), aircraft (1981) and motorcycle (1987) tires with radial technology.

1992

The "green" tire: a breakthrough in tire energy efficiency with increased safety and longevity. Michelin's innovation of adding silica to the rubber mix led to the launch of the first generation of tires in the MICHELIN Energy™ line.

2000

The new generation wide base truck tire: increased payloads and lower fuel consumption. Michelin replaced traditional twin truck tires with its MICHELIN X-One™ single truck tire.

2001

Tires as a service: improving safety, energy efficiency, longevity, while optimizing fleet management and reducing costs. From per-kilometer tire maintenance in the 1940s to the creation of Michelin Fleet Solutions in 2001 to the current Services & Solutions offer, Michelin delivers sustainable benefits to fleets.

2003

The low-impact agriculture tractor tire: reduced soil compaction and rutting, better efficiency, higher farm yields. The MICHELIN Ultraflex™ technology's sidewall flexion enables the tractor to operate with lower tire pressure which in turn protects soils.

2012

Tires made for electric mobility: safety combined with energy efficiency. The MICHELIN Energy™ E-V tire was the first tire specifically designed for electric vehicles to receive the A rating for both wet braking and energy efficiency on the European label.

SUSTAINABILITY MEANS BUILDING A CIRCULAR ECONOMY

2014

Well before Michelin baptized its approach to the circular economy in 2014, it was already applying the 4R principles of reducing, reusing, recycling and renewing tire design, manufacturing, logistics, services for tires in use and end-of-life recovery.

Transitioning from a linear economic model based on "take-make-dispose" to a circular economy in which waste and pollution are designed out, products and materials are kept in use and natural systems are regenerated* is imperative for responsibly using the Earth's limited resources.

The 4R framework guides our innovations and research, our environmental policy for operations, as well as our partnerships and involvement in sustainable mobility ecosystems

*Michelin embraces this circular economy concept as articulated by the Ellen MacArthur Foundation. https://www.ellenmacarthurfoundation.org/circular-economy/concept.

MICHELIN CROSSCLIMATE TIRE

2015

The benefits of a summer tire and the advantages of a winter tire

- In 2015, the European All-Season tire market was shaken up by the launch of MICHELIN CrossClimate: it quickly became the leader in its category, and the best-selling tire range in Europe*.
- MICHELIN All-Season tires are hybrid tires that can be used all-year round. They combine technologies employed for summer and winter tires to enable them to be used safely in dry, wet or snowy conditions, at any time of the year. They address the need for safety expressed by European motorists who chiefly use summer tires and simplify the lives of those who live in regions where winters are mild and who are accustomed to switching their tires as a function of the seasons by eliminating the need to swap them.
- This popularity has led to the creation of a particularly comprehensive range that covers all types of vehicle, from passenger cars to SUVs and small vans, with the MICHELIN CrossClimate+, MICHELIN CrossClimate SUV and MICHELIN Agilis CrossClimate.

**Source = Panel Sell Out GFK Passenger Car All Season (all Tier) - Period: 01/2020 to 12/2020. Scope : France, Germany, UK, Italy, Spain*

SUSTAINABILITY MEANS PERFORMANCE MADE TO LAST

2017

Our ongoing efforts to reduce carbon emissions naturally extend to the customer experience, with tires that are increasingly durable, safe and energy efficient. By extending the life of its products, Michelin is proving that tires can and must offer very high performance until the tread wear indicators appear. If drivers used their tires until the legal tread depth of 1.6 mm, this would avoid wasting up to 400 million tires and avoid emitting up to 35 million tons of CO_2 each year.*

Long-lasting tires: a great value for consumers

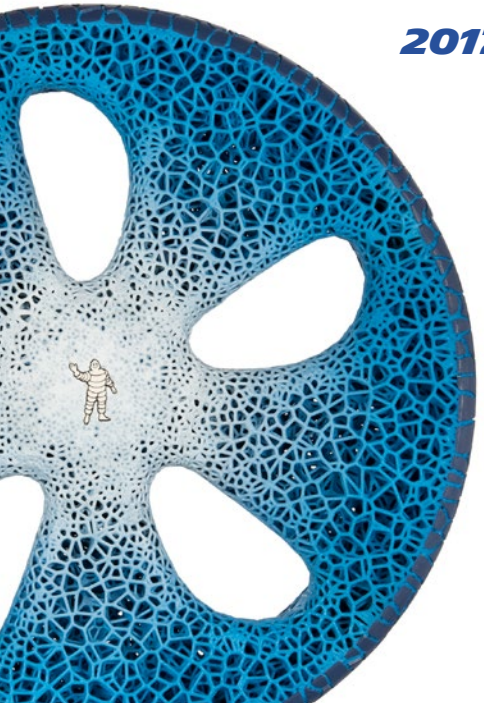
Save time & money
by keeping excellent tire mileage until the legal wear limit (1.6mm or 2/32nds)

Replacing fewer tires means saving resources and reducing waste

Reduce fuel consumption
as tire energy efficiency increases with mileage

*Worldwide estimations based on data from the EY report "Planned obsolescence is not inevitable", June 2017, and an internal study "Worldwide calculations_2016-09-27".

SUSTAINABILITY IS GUIDING OUR INNOVATION AND DESIGN PROCESS WELL INTO THE FUTURE



2017

VISION Concept Tire

It all started with design thinking around sustainable mobility. From a collaborative, user-centric process drawing on a diversity of expertise the Vision tire was born.

Combining technologies and services, Vision is a light, highly robust airless tire-wheel combination made from recycled and bio-sourced materials that last the life of the vehicle. The tread can be recharged on demand using a 3D printer, and connectivity enables the driver to receive advance warning of a potential problem.

Protected by 19 patents, Vision's innovations are inspiring our R&D teams across the organization, guiding advanced research on sustainable materials, light-weight designs and connectivity to build sustainable performance into future tire lines.

1 100% SUSTAINABLE MATERIALS

2 RECHARGEABLE TREAD

3 CONNECTED

4 AIRLESS

DELIVERING ON THE SUSTAINABLE VISION

2019

A new generation of airless solutions

Drawing on the sustainable features of the VISION concept, Uptis* is a prototype airless passenger car tire featuring ground-breaking improvements in architecture and composite materials which enable it to bear the car's weight at road-going speeds. Developed with General Motors, Uptis eliminates any risk of flats and blowouts, while making pressure checks obsolete. These advantages improve driving safety, reduce down time for repairs and optimize the productivity of vehicle fleets. Moreover, Uptis is adapted to the emerging forms of mobilities, whether electric, shared, autonomous or other.

Environmental benefits: Uptis eliminates the need for a spare tire and therefore the need to produce one, avoiding all the inputs – raw materials, energy, water – and the outputs – waste, CO_2 and other emissions, wastewater. Widely deploying Uptis innovations would result in considerable environmental savings: approximately 200 million tires worldwide are scrapped prematurely every year** as a result of punctures, damage from road hazards or uneven wear from improper air pressure.

From prototype to reality: The first on-road application of Uptis is planned for 2024.

*Unique puncture-proof tire system.
**In-house "scrapyard" survey (2012-2015) based on a sample of 135,000 tires and extrapolated on a global scale (~1 billion end-of-life tires are discarded/year).

Uptis development is supported through:

1 INNOVATION & TECHNOLOGY

2 VALUED PARTNERSHIPS

3 SUSTAINABLE DESIGNS

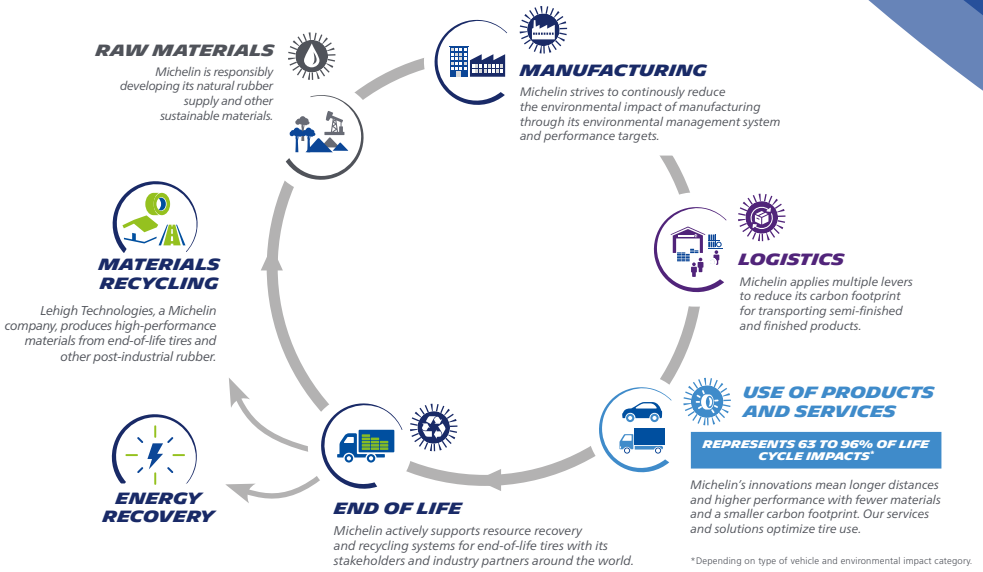
SUSTAINABILITY MEANS REDUCING THE LIFE CYCLE IMPACTS OF OUR PRODUCTS AND SERVICES

Across the value chain Michelin is:

- Reducing CO_2 emissions to achieve its targets validated by SBTi*
- Taking multiple actions under its biodiversity commitments
- Integrating life cycle assessment into the tire design process

We are developing a range of sustainable materials solutions, including micronized rubber powders from scrap tires and bio-sourced butadiene and resins.

As one of the world's leading users of natural rubber, Michelin was the first tire manufacturer to pursue a sustainable sourcing strategy built on the principles of zero deforestation, land conservation and respect for supplier communities.



*Depending on type of vehicle and environmental impact category.

*Science Based Targets initiative: https://sciencebasedtargets.org/.

ON THE PATH TO REACH CARBON NEUTRALITY

MANUFACTURING
Scopes 1 & 2

2030

Reduction in energy consumption + Shift towards clean energy

-50%
CO_2 emissions vs 2010

2050
CARBON NEUTRALITY

LOGISTICS
Scope 3

2030

Transport less, better and differently

-15%
CO_2 emissions vs 2018

2050
CARBON NEUTRALITY

SUPPLY CHAIN
Scope 3

2024

70%
of emissions from suppliers covered by science-based targets

2050
CARBON NEUTRALITY

EN ROUTE TO REACH FULL CIRCULARITY OF PRODUCTS

REDUCE REUSE RECYCLE RENEW

with 40% of sustainable raw materials in 2030, 100% in 2050

NATURAL RUBBER

ResiCare BLACK CYCLE* BIOIMPULSE

PLASTIFIERS

CARBIOS

TEXTILES

SYNTHETIC RUBBER

BIOBUTTERFLY** PYROWAVE

FILLERS

enviro LTLehigh TECHNOLOGIES BLACK CYCLE

METALS

OTHER

* European project funded by Horizon 2020, project number: 82068

** With the support of ADEME (ADEME: French Environment & Energy Management Agency)

SUSTAINABILITY MEANS REDUCING THE LIFE CYCLE IMPACTS OF OUR PRODUCTS AND SERVICES

2020

MICHELIN e•PRIMACY

The first MICHELIN tire created through an eco-design process. It delivers the lowest rolling resistance of its category[1][2] to offer fuel and CO_2 savings[3], and better battery range[4].

And the first tire in the tire industry for which an Environmental Product Declaration was published*.

*Registration date: July 10, 2020

2021

MICHELIN PILOT SPORT EV

Inspired by MICHELIN Formula E racing, it is the first MICHELIN tire specially designed to meet the demanding requirements of high-performance electric vehicle. The assessment of its environmental impacts has also been published in an Environmental Product Declaration.

(1) MICHELIN e•PRIMACY category of tires is defined as one of the Premium summer tires such as CONTINENTAL, GOODYEAR,BRIDGESTONE, PIRELLI, DUNLOP brands, and which are not dedicated to Original Equipment application (i.e not designed to achieve car manufacturers specific targets) but tires that can be purchased from retailers.

(2) Rolling Resistance test - Rolling Resistance tests conducted on machine by Applus Idiada, on Michelin's request, June (on new) & August (on 2mm buffed) 2020, on dimension 205/55 R16 91V, comparing MICHELIN e.PRIMACY (new: 5.58 kg/t & worn: 5.13 kg/t) versus MICHELIN PRIMACY 4 (new: 7.74 kg/t & worn: 6.25 kg/t); BRIDGESTONE TURANZA T005 (new: 7.17 kg/t & worn: 5.81 kg/t); CONTINENTAL ECOCONTACT 6 (new: 6.39 kg/t & worn: 5.49 kg/t); CONTINENTAL PREMIUM CONTACT 6 (new: 8.93 kg/t & worn: 6,94 kg/t); DUNLOP BLURESPONSE (new: 7.97 kg/t & worn: 5.54 kg/t); GOODYEAR EFFICIENT GRIP 2 (new: 7.01 kg/t & worn: 5.38 kg/t); PIRELLI CINTURATO P7 BLUE (new: 6.96 kg/t & worn: 6.30 kg/t); PIRELLI CINTURATO P7 (new: 8.79 kg/t & worn: 6.97 kg/t).

(3) Increased EV battery range and CO_2 reduction - When new, MICHELIN e•PRIMACY generates 2 kg/t on average Rolling Resistance less than competitors, equivalent in fuel consumption reduction of up to 0,21l/100 km, equivalent of a gain in CO_2 emission up to 5 g for a VW Golf 7 1.5 TSI or equivalent of gain of up to 7% in autonomy for a VW e.Golf.

(4) Increased fuel savings - During usage, MICHELIN e•PRIMACY generates 1.5 kg/t on average Rolling Resistance less than competitors, gain is equivalent of up to 80€ savings on fuel. This gain is equivalent of up to 174 kg of CO_2 saved. Usage gains are estimated on the average of new and buffed 2 mm datas to take into account real life time performance - All gains are estimated on a base of 35,000 km and a fuel price of 1.46€/L (https://ec.europa.eu/energy/data-analysis/weekly-oil-bulletin_en 6/1/2020 weighted on the top 10 countries for motor vehicle movements on national and foreign territory - https://ec.europa.eu/eurostat/web/transport/data/database). Actual fuel and cost savings may vary depending notably on driving habits, vehicle or tire pressure.

SUSTAINABILITY MEANS REDUCING THE LIFE CYCLE IMPACTS OF OUR PRODUCTS AND SERVICES

2021

MICHELIN CROSSCLIMATE² tire was optimized in an eco-design process involving the evaluation of environmental impacts across the stages of the tire's life cycle, in comparison to the equivalent tire range.

Several types of environmental impacts were evaluated in this life cycle assessment (LCA):

- direct impacts to global warming and to ecosystem and human health
- indirect impacts from the use and reuse of resources.

What we learned from the LCA:

The LCA enabled a better understanding of how the tire's design and performance impact the environment.
The R&D team optimized the tire's performance, particularly regarding energy efficiency (rolling resistance) and longevity, to minimize the environmental impacts, notably the contribution to global warming and use of resources.

MICHELIN CROSSCLIMATE 2

Master of the all-season tires [1] designed for a safe drive anywhere, in any weather.

- **Leader in dry braking** [2]
- **Leader in wet braking at the legal wear limit** [3]
- **Leader for snow braking and traction** [4][5]
- Reduced fuel consumption. **10% reduction** in rolling resistance [6][7]

[1] Balance of performance - Balance of performance proven by tests conducted in 2020 and 2021 on Dry braking new, Wet braking new and worn, Snow braking new and worn, Snow traction new and worn, Rolling resistance, Longevity - see test details in legal mentions 2, 3, 4, 5, 6, 7 - MICHELIN CrossClimate 2 grabs 6 leading positions out of 9 tests.

[2] Dry braking tests, conducted by TÜV SÜD Product Service on Michelin's request, between 100 and 0 kph, February 2021, on dimension 205/55 R16 94V XL on VW Golf 7 comparing MICHELIN CrossClimate 2 (37,2m) versus : BRIDGESTONE Weather Control A005 EVO (37,9m) ; CONTINENTAL AllSeasonContact (40,2m) ; GOODYEAR Vector 4Seasons Gen-3 (41,4m) ; PIRELLI Cinturato All Season Plus (41,6m). Results may vary according to road and weather conditions.

[3] Wet braking tests, conducted by TÜV SÜD Product Service on Michelin's request, between 80 and 20 kph, October 2020-April 2021 (worn means when worn on machine (buffed) to the depth of Tread Wear Indicator according to European regulation: ECE R30r03f), on dimension 205/55 R16 94V XL on VW Golf 7 comparing MICHELIN CrossClimate 2 (new : 25m - worn : 32,3 m) versus MICHELIN CrossClimate + (new : 25,5 m - worn : 31,9 m) ; BRIDGESTONE Weather Control A005 EVO (new : 24,3 m - worn :32,4 m) ; CONTINENTAL AllSeasonContact (new : 26,4 m - worn : 33,6 m) ; GOODYEAR Vector 4Seasons Gen-3 (new : 26,4 m - worn : 34,5 m) ; PIRELLI Cinturato All Season Plus (new : 25,9 m - worn : 36,3m)

[4] Snow braking tests, conducted by TÜV SÜD Product Service on Michelin's request, between 30 and 10 kph, February 2021 (on 2mm buffed), on dimension 205/55 R16 94V XL comparing MICHELIN CrossClimate 2 (new : 10,3m - worn : 11,6m) versus BRIDGESTONE Weather Control A005 EVO (new : 11,2m - worn : 16,3m) ; CONTINENTAL AllSeasonContact (new : 10,4m - worn : 12m) ; GOODYEAR Vector 4Seasons Gen-3 (new : 10,6m - worn : 12,3m) ; PIRELLI Cinturato All Season Plus (new : 12,6m - worn : 15,1m)

[5] Snow traction tests, conducted by TÜV SÜD Product Service on Michelin's request, February 2021 (on 2mm buffed), on dimension 205/55 R16 94V XL comparing MICHELIN CrossClimate 2 (new : 100% - worn : 100%) versus MICHELIN CrossClimate + (new : 95,1% - worn : 87,5%) ; BRIDGESTONE Weather Control A005 EVO (new : 84,6% - worn : 65,2%) ; CONTINENTAL AllSeasonContact (new : 95,6% - worn : 91,9%) ; GOODYEAR Vector 4Seasons Gen-3 (new : 94,6% - worn : 90,6%) ; PIRELLI Cinturato All Season Plus (new : 72,0% - worn : 54,2%). Worn means worn on machine (buffed) to the depth of Tread Wear Indicator according to European regulation for Tread wear indicator ECE R30r03f. Results may vary according to road and weather conditions.

[6] Rolling Resistance - Rolling Resistance tests conducted on machine by Applus Idiada, on Michelin's request, August 2020, on dimension 205/55 R16 94V XL, comparing MICHELIN CrossClimate 2 (7.30 kg/t) versus MICHELIN CrossClimate + (8.20 kg/t) Eco-responsible driving depends notably on driving habits, vehicle or tire pressure.

[7] Rolling Resistance - MICHELIN CrossClimate 2 is rated «B» on the Rolling Resistance A-B-C-E Item of the European labelling scale which is comparable to summer premium tire standard as the majority of them is rated B and moreaccording to Product Tracking - Average Premium Summer tire market in Europe – 2021.

MICHELIN CROSSCLIMATE 2

MICHELIN EverGrip, EverWinterGrip & EverTread technologies for all-seasons performances

THERMAL ADAPTIVE COMPOUND

For better snow grip
An innovative polymer which adapts itself to ever-changing road temperatures.

STEPS ON BLOCK

For traction on snow
Helps to block the snow in the transverse hollow and increase the snow-on-snow contact.

V-SHAPE

For better wet braking
Helps to evacuate water from the contact patch when new and when worn*.
**To the legal minimum tread depth of 1.6mm.*

COOLRUNNING SIDEWALL

For energy savings
(fuel & battery range)
Absorbs less energy during flexion than a standard tire.

V-RAMP

For better dry braking
Helps maximize ground contact of the tread blocks and gives more stability to the vehicle.

P-EDGE

For better snow grip
Emerging groove opens, and biting edges appear as the tire wears.

MAXTOUCH CONSTRUCTION

For longevity
Maximizes the tire's contact with the road without sacrificing performance.

LEV LAMELLA

For energy savings
(fuel & battery range)
Helps maintain stability when the contact patch is deformed and reduce energy losses.

MICHELIN CROSSCLIMATE 2

205/55R16 94V XL M+S

SYNTHETIC RUBBER	1.73 KG (20.7%)
NATURAL RUBBER	1.65 KG (19.7%)
STEEL	1.14 KG (13.5%)
TEXTILES	0.45 KG (5.4%)
SILICA	0.80 KG (9.5%)
CARBON BLACK	1.31 KG (15.6%)
OTHER MATERIALS*	1.31 KG (15.6%)

*Chemicals and additives

CONTENT DECLARATION

EPD type and region
Cradle to grave, Europe
Tire designation information:
- Tire size: 205/55R16
- Tire mass: 8.39 kg
- Tire sub-categories: Passenger car tire
- Nominal section width: 205
- Aspect ratio: 55
- Casing construction: 1 ply polyester
- Rim diameter: 16 inches
- Load index: 94
- Speed rating: V

Retreadability:
No
Rolling resistance coefficient value:
7.3kg/t
Tire category:
Passenger car tire
Functional unit:
1 tire driven 1000km
LCA software:
Simapro release 9.1.1.1
LCI databases:
EcoInvent 3.6
Plant:
Michelin plants of Cuneo (Italy),
Bad Kreuznach (Germany), Vitoria (Spain)

An EPD® within the same product category but from different programmes may not be comparable.

Calculated impacts are only related to tires within the scope of this PCR and shall not be compared to vehicle performance.

UNDERSTANDING ENVIRONMENTAL PERFORMANCE

Contribution to global warming is measured by the emission of **greenhouse gases.**

Ecosystem health impacts are measured by:

- Emissions of sulfur dioxide and other chemical substances that create **acid rain** which in turn damages terrestrial and freshwater ecosystems in a process called "acidification "
- Released chemicals that damage **the ozone layer** and its ability to absorb ultraviolet radiation that is harmful to plant life
- Nutrients that **degrade freshwater bodies** through the loss of oxygen and acidification in a process called "eutrophication"

Human health impacts are measured by:

- **Air pollution** caused by:
  - emissions of **particulate matter**
  - formation of **photochemical ozone,** a major contributor to **smog**
- released chemicals that **damage the ozone** layer and its ability to absorb ultraviolet radiation that is harmful to humans

Use of ressource:

- withdrawal of freshwater
- energy generation from both renewable and non-renewable sources
- depletion of minerals, fossil fuels and other non-living or "abiotic" resources that are non-renewable

Reuse of resources:

- mass of the product remaining at end of life
- ability to reuse the product's components
- recycling of the product by recovering materials and energy

***Product stage:** it represents the cradle-to-gate impacts of a tire, including the processes that provide the material and energy inputs into the product system, manufacturing of raw materials into the finished tire, and transport processes up to the factory gate, as well as the processing of any waste arising from the processes.

***Mounting stage:** includes the activities from the tire factory to the final user, i.e., successive transport stages.

***Use stage:** includes the activities covering the period from the handover of the tire until it reaches its end of life, including the fuel/energy consumption and related emissions attributable to the tire, and particle emissions related to tire and road abrasion.

***End of life stage:** The end of life stage of the tire product starts when it is removed from the vehicle, does not provide any further operational function, and is at the end of the reference service life. It includes the transportation of the tire to the end of life treatment facility and the end of life treatment of tires being landfilled or incinerated without energy recovery.

(*) see UL PCR Tires: UL 10006 version 3.04 for any further details

ENVIRONMENTAL IMPACT CATEGORY

			PRODUCT STAGE			MOUNTING STAGE	USE STAGE	END OF LIFE STAGE	
Europe (ILCD Method)	UNIT	TOTAL	RAW MATERIALS	TRANSPORTATION	MANUFACTURING	DISTRIBUTION	TIRE IN USE	TIRE END OF LIFE TRANSPORTATION	TIRE END OF LIFE TREATMENT
Global warming potential	kg CO_2eq	1.09E+01	8.48E-01	6.11E-02	9.30E-02	4.51E-02	9.83E+00	1.38E-04	6.85E-05
Acidification potential	mol H+eq	3.42E-02	5.19E-03	6.97E-04	2.74E-04	1.76E-04	2.79E-02	4.79E-07	6.42E-07
Eutrophication potential (freshwater aquatic)	kg Peq	3.54E-04	2.71E-04	3.09E-07	1.95E-05	4.42E-07	6.22E-05	6.98E-10	2.85E-08
Photochemical ozone formation potential	kg NMVOCeq	2.83E-02	3.00E-03	4.62E-04	1.57E-04	1.80E-04	2.45E-02	4.52E-07	7.86E-07
Ozone depletion potential	kg CFC-11eq	1.90E-06	1.13E-07	1.10E-08	1.44E-08	8.24E-09	1.76E-06	2.54E-11	9.93E-12
Abiotic depletion potential	kg Sbeq	1.47E-05	1.17E-05	1.30E-08	7.63E-08	1.85E-08	2.92E-06	3.31E-11	3.03E-11

INDICATORS DESCRIBING RESOURCE USE

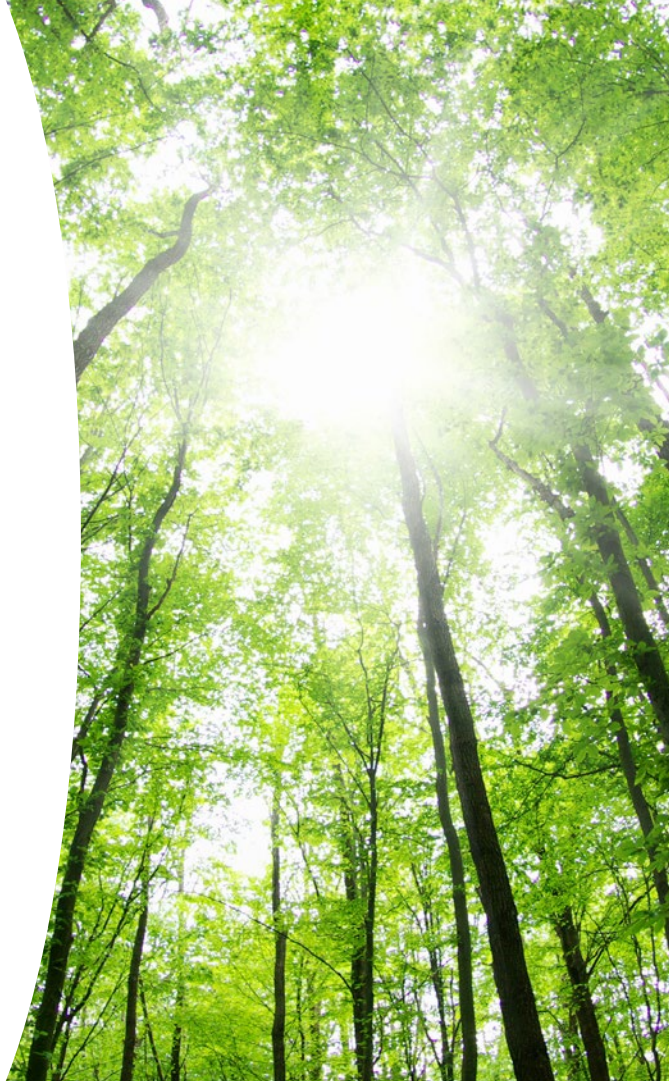
			PRODUCT STAGE			MOUNTING STAGE	USE STAGE	END OF LIFE STAGE	
	UNIT	TOTAL	RAW MATERIALS	TRANSPORTATION	MANUFACTURING	DISTRIBUTION	TIRE IN USE	TIRE END OF LIFE TRANSPORTATION	TIRE END OF LIFE TREATMENT
Total use of RENEWABLE primary energy	MJ	1.15E+00	6.06E-01	1.17E-03	2.86E-01	8.88E-04	2.56E-01	2.74E-06	2.10E-05
Total use of NON-RENEWABLE primary energy	MJ	1.69E+02	2.10E+01	9.03E-01	1.53E+00	6.80E-01	1.44E+02	2.08E-03	9.73E-04
Use of fresh water resources	m^3	9.57E-02	4.51E-02	2.17E-04	7.88E-03	1.82E-04	4.23E-02	5.53E-07	1.28E-06

INDICATORS DESCRIBING PARTICULATE EMISSIONS

	Unit per FU/DU	TOTAL
Particulate matter (PM10)	kg	1.05E-03
Particulate matter (PM2.5)	kg	3.23E-04

INDICATORS DESCRIBING WASTE AND RESOURCE RECOVERY

	Unit per FU/DU	TOTAL
Tire end-of-life treatment	kg	2.83E-01
Components for reuse	kg	0.00E+00
Materials for recycling	kg	1.49E-01
Materials for energy recovery	kg	1.08E-01
Exported energy (materials for energy recovery)	MJ, net calorific value per energy carrier	3.25E+00



EPD PROCESS CERTIFICATION		CONTACT	LCA AUTHOR	PROGRAMME OPERATOR
EPD® THE INTERNATIONAL EPD® SYSTEM	BUREAU VERITAS 1828	MICHELIN	MICHELIN	EPD® THE INTERNATIONAL EPD® SYSTEM
- **Product category rules (PCR):** Tires - **UL PCR Tires: UL 10006 version 3.04** (November 2017) - **PCR review was conducted by:** The Technical Committee of the International EPD® System. The PCR review panel may be contacted via info@environdec.com. - **Independent verification of the declaration and data, according to ISO 14025:2010** ☐ EPD® Process Certification (internal) ☒ EPD® Verification (external)	- **Third party verifier:** Damien PRUNEL, LCA & Ecodesign consultant LCIE BUREAU VERITAS 33, Avenue du Général Leclerc 92260 Fontenay aux Roses - FRANCE damien.prunel@bureauveritas.com - **Accredited by:** Recognized individual verifiers, approved by the International EPD® System.	**Manufacture Française des Pneumatiques MICHELIN** 23, Place des Carmes Dechaux 63040 Clermont-Ferrand Cedex 09 FRANCE For additional information related to the activities of the Michelin Group: www.michelin.com In regards to this environmental declaration, please contact: **Nicolas Beaumont**, Sustainable Development and Mobility department, nicolas.beaumont@michelin.com	**Vincent Debost** vincent.debost@michelin.com	**EPD® International AB** info@environdec.com **The International EPD® System** EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com

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