

**MICHELIN AND THE 2021
LE MANS 24 HOURS**
AUGUST 21 - 22, 2021



PRESSKIT



INTRODUCTION

Due to the pandemic, the 2021 Le Mans 24 Hours is exceptionally taking place over the weekend of August 21-22. Originally scheduled to be held on its traditional mid-June slot (June 12-13), the race was postponed by more than two months in order to be able to accommodate spectators after the 2020 event went ahead behind closed doors.

This year's change of date has produced three notable challenges for the teams and Michelin Motorsport alike:

A STEP INTO THE UNKNOWN:

The new Michelin tyres developed virtually for the Hypercar class will be tackling the Le Mans 24 Hours circuit for the very first time. With around half the lap run on public roads the rest of the year, no prior testing was possible to prepare for the race ahead of the official Test Day. However, the results achieved at the first three rounds of the 2021 FIA World Endurance Championship (FIA WEC) revealed the outstanding performance of these tyres out of the box.

POTENTIALLY HOTTER WEATHER:

With average temperatures of around 26°C in August as opposed to 23°C in June, potentially warmer conditions have the potential to have an impact on the teams' race strategies. This will not change the tyres' fundamental performance characteristics but it might be key to making the ideal choice for the prevailing air and, above all, track temperatures.

TWO EXTRA HOURS OF RACING AFTER DARK:

In the second half of August, the nights are appreciably longer than in June. This means competitors will do battle for two hours more in the dark, not to mention the possibility of different temperatures and humidity levels compared with the race's traditional slot, two other factors that are likely to influence tyre choice during this year's Le Mans 24 Hours.



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THE 24 HOURS LE MANS: MICHELIN RECORDS AND A BREEDING GROUND FOR INNOVATION

Michelin's maiden Le Mans victory dates back to the inaugural race in 1923 when Frenchmen André Lagache and René Leonard completed the 24 hours of action around a 17-kilometre dirt at an average speed of more than 92kph in their Chenard & Walcker Sport.

Since then, Michelin has won the world-famous endurance classic a further 28 times, including an ongoing sequence of 23 wins from 1998 to 2020, while simultaneously breaking a number of records in association with its partners.

These include the highest average speed over a single lap (251.882kph, recorded by Japanese driver Kamui Kobayashi at the wheel of a Toyota TS050 Hybrid during qualifying in 2017), as well as the highest average speed over the full race distance (225.22kph, clocked by the N°9 Audi R15 TDI crewed by Timo Bernhard/Romain Dumas/Mike Rockenfeller in 2010).

These impressive achievements underscore the progress the cars have made over the years, ably supported by their Michelin tyres.



Kamui Kobayashi's Toyota TS050 Hybrid (2017)



The Audi R15 of Timo Bernhard, Romain Dumas and Mike Rockenfeller (2010)



Michelin has long used endurance racing to showcase its ability to design tyres that boast not only exceptional longevity but also dependable performance from the start of the race all the way to the chequered flag.

Marathon events like the Le Mans 24 Hours and the different rounds of the FIA World Endurance Championship – which visit a variety of circuits and last from six to eight hours – are all opportunities for Michelin to demonstrate the consistency of its tyres.



A REAL-LIFE LABORATORY

Endurance racing and motorsport as a whole provide an invaluable chance to evaluate and prove new technology in a singularly exacting environment. This is why Michelin participates in a number of world championships, on two wheels and four. The French manufacturer uses these life-size laboratories as test beds for its innovations, collecting enormous amounts of data from circuits all around the world.



Longer-lasting performance not only improves safety, but also means tyres need replacing less frequently, simultaneously saving motorists money and helping to protect the environment. Extending tyre life to allow them to cover longer distances means fewer raw materials and less recycling are required.

At Le Mans, where tyres cannot be changed while the car is being refuelled during pit stops, being able to complete multiple stints obviously saves vital seconds during routine stops that may prove crucial in the race's final outcome.

This information is subsequently collated and analysed before being used to support the brand's ongoing research and development work. Having been pushed to their limit on the race track, some of these technologies go on to be incorporated into upcoming road tyres. This is how Michelin bridges the gap between motorsport and mass-production, transferring technology from the race-track to the street to address the needs of both racing drivers and everyday motorists.

More than ever, motorsport is a key driver of sustainable mobility.

Michelin continues to invest in the Le Mans 24 Hours in its quest to produce high-performance tyres that are increasingly safe and more environmentally-friendly, in line with the brand's All Sustainable plan.



THE NEW «DÉMONSTRATEUR 46» TYRE

Michelin's 'démonstrateur 46' tyre will appear at Le Mans for the first time this year fitted to the fuel-cell-powered Green GT H24 prototype.

Revealed earlier this year at June's Mo-vin'On international sustainable mobility summit, it is the first racing tyre to be able to claim that 46 percent of the materials it contains are sustainable.

The 'démonstrateur 46' tyre consequently stands out as an eloquent illustration of Michelin's advance in the field of sustainable and high-tech materials and has seen the company successfully combine a high proportion of sustainable materials with very high performance, a circle often considered impossible to square.

Such a high proportion of sustainable materials has been achieved by increasing the quantity of natural rubber and incorporating carbon black recovered from end-of-life tyres. The other bio-sourced or recycled sustainable materials that go into this new tyre include everyday products like orange and lemon peel, sunflower oil, resin oil and A, along with recycled scrap steel.

The 'démonstrateur 46' tyre is a concrete example of the Group's All Sustainable plan, whereby all Michelin tyres will be made entirely of sustainable materials by 2050, with an interim target of sustainable materials making up 40 percent of their content by 2030.



THE MICHELIN PILOT SPORT RANGE FOR THE 2021 LE MANS 24 HOURS

The introduction of a new headlining category in endurance racing has shifted the championship's technical goalposts and obliged a re-think of Michelin's own approach. This class stars cars developed from the ground up by the current contenders (Alpine ELF Matmut, Glickenhaus Racing and Toyota Gazoo Racing) in accordance with

an entirely new set of technical regulations. Michelin was selected by the FIA (Fédération Internationale de l'Automobile) and ACO (Automobile Club de l'Ouest) to be the exclusive supplier of rubber to the Hypercar category and has consequently designed a new range of tyres specially adapted to the technology, weight and performance characteristics of these new prototypes.

TYRES DEVELOPED VIRTUALLY

For the first time, Michelin Motorsport developed these new tyres solely with the aid of computer software and simulators, in close collaboration with the competing manufacturers. No physical car was involved in this entirely virtual process.

"When we began this project, the cars similarly only existed in virtual form!" recalls Pierre Alves, the manager of Michelin's FIA WEC programme.

"This meant we had to input into our computing programmes new data regarding the weight, power and relative forces generated by the internal-combustion engines and electric motors of these cars, which are very different to those associated with last year's LMP1 cars. Although heavier, the new Hypercar prototypes reach the same top speeds, yet their aerodynamics are less complex. This places very different and potentially more punishing demands on their tyres. All of this had to be factored into the tyres' development, but their performance at the opening races of the 2021 FIA World Endurance Championship at Spa-Francorchamps [Belgium], Portimão [Portugal] and Monza [Italy] turned out to be completely in-line with our predictions."



WHEN WE BEGAN THIS PROJECT, THE CARS SIMILARLY ONLY EXISTED IN VIRTUAL FORM!

PIERRE ALVES

Manager of Michelin's Endurance racing programmes



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MICHELIN'S NEW HYPERCAR TYRE RANGE IN DETAIL

The digital development and simulation work carried out by Michelin Motorsport's engineers proved extremely successful on other fronts, too. Not only did it enable the development lead-time to be halved to just ten months, but it also produced cost savings and reduced the quantity of raw materials required for this phase by 75 percent, while significantly

reducing the impact on the environment. Michelin has duly traded its traditional iterative approach combining experience, simulations, machines and on-track vehicle testing for a pioneering, entirely virtual design process – an even more remarkable achievement given that the Hypercar class required new tyre sizes for both the front and rear wheels.



SLICK

SOFT « Cold »: For non-abrasive tracks and temperatures below 15°C. This tyre is also suitable for night-time running.

SOFT « Hot »: For moderately abrasive or 'rubbered-in' track surfaces and temperatures above 15°C.

MEDIUM: For abrasive, hard-wearing tracks and temperatures in excess of 30°C.



INTERMEDIATES

These tyres have a patterned tread and are designed for use in damp conditions or when the conditions differ from one part of the circuit to another, a phenomenon that is not uncommon around a lap of more than 13 kilometres as is the case at Le Mans.



WET-WEATHER

Again, these are new tyres that feature a new compound and superior versatility.

DRYING WET: This tyre covers a broad spectrum of temperatures in damp or drying conditions.

FULL WET: Tread pattern designed for heavy rain.



TYRES FOR THE LE MANS GTE PRO AND GTE AM CLASSES

The global pandemic and desire to cut costs mean the same tyre range has been carried over from last season in these two classes, in accordance with the regulations. In 2020, the compound specifications were revised in order to adapt to the broader spread of track temperatures expected for the races that initially figured on the

calendar, with a potential peak of 65°C in Sao Paolo, Brazil, compared with the 2020 season's 'high' of 45°C. Both classes have access to the same tyres, although their development has been tailored to meet the specific requirements of each competing manufacturer, as a function of their respective car's technical characteristics.



SLICKS

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WET-WEATHER

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A CHOICE OF SIZES DEPENDING ON CAR AND CLASS

The Alpine ELF Matmut and Toyota Gazoo Racing Hypercars run the same-size tyres (31/71-18) for all four wheels, while Glickenhaus Racing's engineers opted for different sizes front and rear (29/71-18 and 34/71-18) which are new in endurance racing. This difference in approach is due to the cars' different front/rear weight distribution because of the technology they employ and their aerodynamics. For example, the Toyota GR010 Hybrid is the only prototype in the field to incorporate an electric motor – positioned at the front – in addition to its internal-combustion engine.

Different sizes front (30/68-18) and rear (31/71-18) are similarly to be found in the LMGTE Pro and LMGTE Am classes. All the cars in these two classes run the same size tyres.



TYRE ALLOCATIONS FOR THE 2021 LE MANS 24 HOURS

HYPERCAR		
Practice + Qualifying + Warm Up	Hyperpole	Race
24	8	56

“For this first year of the Hypercar class, we have done our utmost to strike the optimum balance between safety and performance for all the cars,” says Pierre Alves, the manager of Michelin’s endurance racing programmes.

“However, we intend to update our tyres as a function of the data we collect during the first season with these new-generation cars. This will enable us to fine-tune the future direction of our development work, so we can improve our tyres as quickly as possible and, perhaps, one day succeed in further reducing the number of tyres required to contest the race.”

LM GTE PRO		
Practice + Qualifying + Warm Up	Hyperpole	Race
28	8	60

LM GTE AM		
Practice + Qualifying + Warm Up	Hyperpole	Race
28	8	60

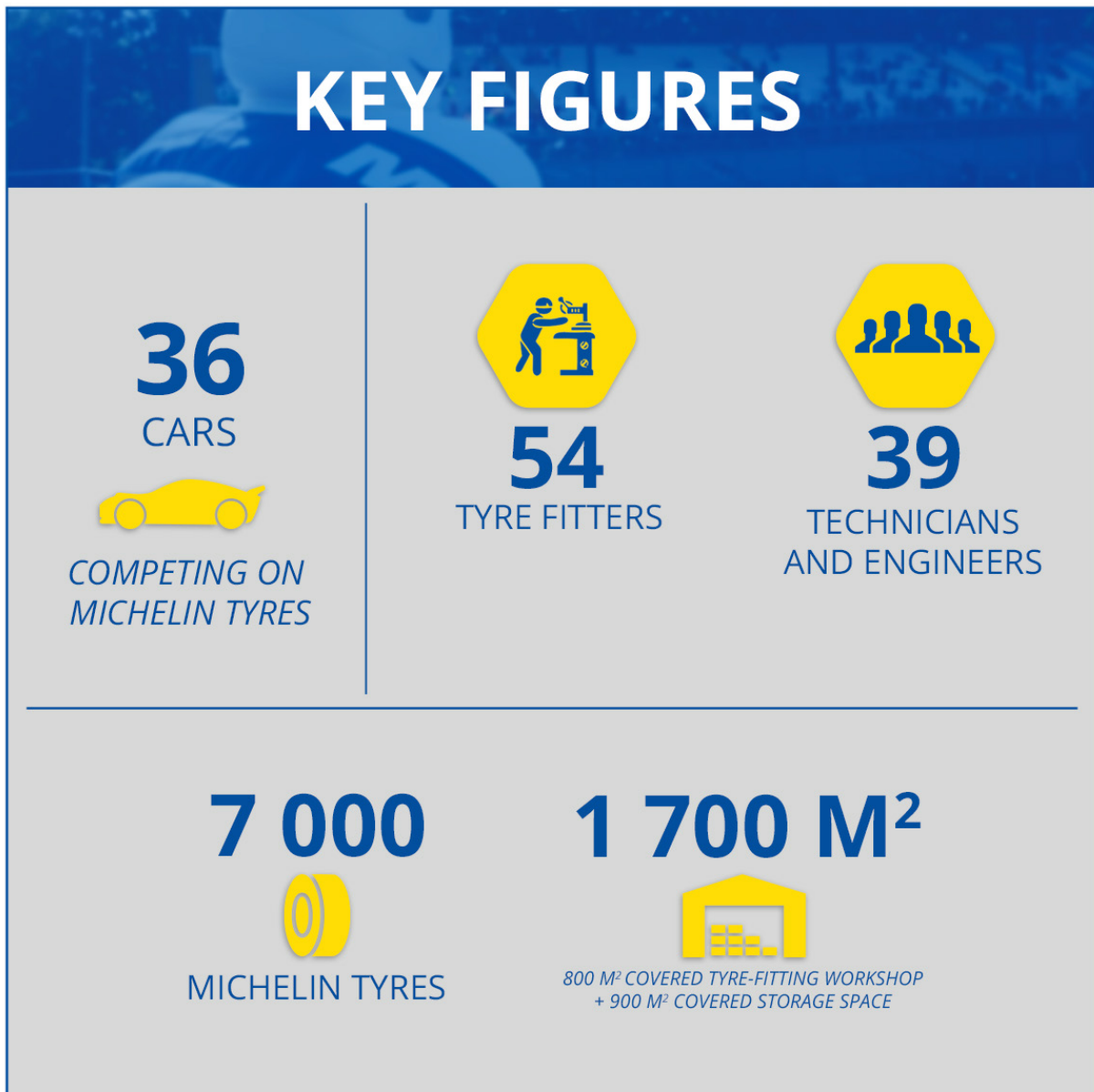
A MORE FAVOURABLE ENVIRONMENTAL FOOTPRINT

THANKS TO 2021 LE MANS 24 HOURS' MORE COMPACT FORMAT

Michelin Motorsport has further reduced the environmental impact of its involvement in the Le Mans 24 Hours by optimising its tyre range and transport logistics to truck the 7,000 tyres needed for the official Test Day and Le Mans week itself.

“On an environmental level, this is particularly significant, since it reduces the quantity of raw materials we use and means three fewer semi-trailers are required to carry our tyres, for a saving of more than 600kg of CO2,” adds Pierre Alves.

MICHELIN'S OPERATION AT THE 2021 LE MANS 24 HOURS



MICHELIN'S PARTNER TEAMS AT THE 2021 LE MANS 24 HOURS

HYPERCAR

N°7	TOYOTA GAZOO RACING	Toyota GR010 Hybrid	CONWAY/KOBAYASHI/LOPEZ
N°8	TOYOTA GAZOO RACING	Toyota GR010 Hybrid	BUEMI/NAKAJIMA/HARTLEY
N°36	ALPINE ELF MATMUT	ALPINE A480 - Gibson	NEGRAO/LAPIERRE/VAXIVIÈRE
N°708	GLICKENHAUS RACING	Glickenhaus 007 LMH	DERANI/MAILLEUX/PLA
N°709	GLICKENHAUS RACING	Glickenhaus 007 LMH	BRISCOE/WESTBROOK/DUMAS



LM GTE PRO

N°51	AF CORSE	Ferrari 488 GTE EVO	PIER GUIDI/CALADO/LEDOGAR
N°52	AF CORSE	Ferrari 488 GTE EVO	SERRA/MOLINA/BIRD
N°63	CORVETTE RACING	Chevrolet Corvette C8.R	GARCIA/TAYLOR/CATSBURG
N°64	CORVETTE RACING	Chevrolet Corvette C8.R	MILNER/TANDY/SIMS
N°72	HUB AUTO RACING	Porsche 911 RSR - 19	VANTHOOR(D)/PARENTE/MARTIN
N°79	WEATHERTECH RACING	Porsche 911 RSR - 19	MACNEIL/BAMBER/VANTHOOR(L)
N°91	PORSCHE GT TEAM	Porsche 911 RSR - 19	BRUNI/LIETZ/MAKOWIECKI
N°92	PORSCHE GT TEAM	Porsche 911 RSR - 19	ESTRE/JANI/CHRISTENSEN

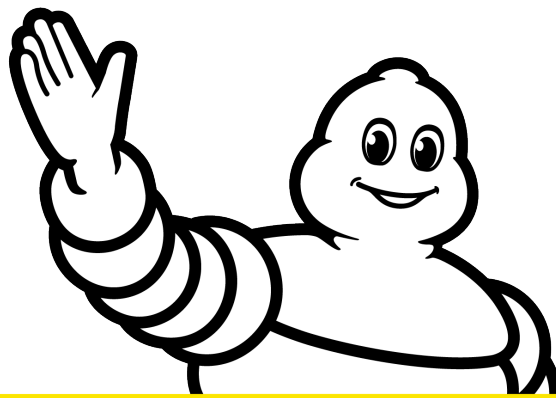


MICHELIN'S PARTNER TEAMS AT THE 2021 LE MANS 24 HOURS

LM GTE AM

N°18	ABSOLUTE RACING	Porsche 911 RSR - 19	HARYANTO/PICARIELLO/SEEFRIED
N°33	TF SPORT	Aston Martin Vantage - AMR	KEATING/PEREIRA/FRAGA
N°46	TEAM PROJECT 1	Porsche 911 RSR - 19	OLSEN/BUCHARDT/FOLEY
N°47	CETILAR RACING	Ferrari 488 GTE EVO	LACORTE/SERNAGIOTTO/FUOCO
N°54	AF CORSE	Ferrari 488 GTE EVO	FLOHR/FISICHELLA/CASTELLACCI
N°55	SPIRIT OF RACE	Ferrari 488 GTE EVO	CAMERON/PEREL/GRIFFIN
N°56	TEAM PROJECT 1	Porsche 911 RSR - 19	PERFETTI/CAIROLI/PERA
N°57	KESSEL RACING	Ferrari 488 GTE EVO	KIMURA/ANDREWS/JENSEN
N°60	IRON LYNX	Ferrari 488 GTE EVO	SCHIAVONI/RUBERTI/GIAMMARIA
N°66	JMW MOTORSPORT	Ferrari 488 GTE EVO	NEUBAUER/SALES/FANNIN
N°69	HERBERTH MOTORSPORT	Porsche 911 RSR - 19	RENAUER/BOHN/INEICHEN
N°71	INCEPTION RACING	Ferrari 488 GTE EVO	IRIBE/MILLROY/BARNICOAT
N°77	DEMPSEY - PROTON RACING	Porsche 911 RSR - 19	RIED/EVANS/CAMPBELL
N°80	IRON LYNX	Ferrari 488 GTE EVO	CRESSONI/MASTRONARDI/ILLOT
N°83	AF CORSE	Ferrari 488 GTE EVO	PERRODO/NIELSEN/ROVERA
N°85	IRON LYNX	Ferrari 488 GTE EVO	FREY/BOVY/GATTING
N°86	GR RACING	Porsche 911 RSR - 19	WAINWRIGHT/BARKER/GAMBLE
N°88	DEMPSEY - PROTON RACING	Porsche 911 RSR - 19	ANDLAUER/BASTIEN/ARNOLD
N°95	TF SPORT	Aston Martin Vantage - AMR	HARTSHORNE/HANCOCK/GUN
N°98	ASTON MARTIN RACING	Aston Martin Vantage - AMR	DALLA LANA/THIIM/GOMES
N°99	PROTON COMPETITION	Porsche 911 RSR - 19	TINCKNELL/VUTTHIKORN/LATORRE
N°388	RINALDI RACING	Ferrari 488 GTE EVO	EHRET/HOOK/BLEEKEMOLEN
N°777	D'STATION RACING	Aston Martin Vantage - AMR	HOSHINO/FUJII/WATSON





MICHELIN

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