



Press Information December 12, 2023

The most innovative and powerful SL of all time

- With E PERFORMANCE hybrid drive 600 kW (816 HP) system output and up to 1,420 Nm system torque
- Roll stabilisation, all-wheel drive, rear-axle steering and ceramic high-performance composite brake system as standard
- Extensive customisation options including MANUFAKTUR programme

Schlieren. Mercedes-AMG crowns the SL series with the new SL 63 S E PERFORMANCE (weighted fuel consumption, combined 7.7 l/100 km; weighted power consumption, combined 11.5 kWh/100 km; weighted CO2 emissions, combined 175 g/km¹). The 4.0-litre V8 biturbo engine and the AMG Electric Drive Unit together generate a system output of 600 kW (816 hp) and a maximum system torque of up to 1,420 Nm. This makes the new model the most powerful SL of all time. And it is already the fifth series with the AMG-specific E PERFORMANCE hybrid technology. The immediate response of the electric drive, the rapid build-up of torque and the linear power delivery enable an impressive driving experience. The acceleration to 100 km/h in 2.9 seconds and the top speed of 317 km/h underline the confident appearance. Systems such as the AMG ACTIVE RIDE CONTROL suspension with active roll stabilisation and active rear-axle steering ensure a widespread between comfort and driving dynamics.

"The SL has always been an icon in the Mercedes-Benz portfolio. The latest version of the legendary roadster transfers this status into the future. First and foremost is the new SL 63 S E PERFORMANCE, which, with its innovative technology, is the most powerful member of the SL family. With this unique concept, we offer our customers not only superior performance but also the option of all-electric driving. Extensive equipment options and the high-quality materials used also make the SL one of the most exclusive roadsters on the market - a real dream car."

Michael Schiebe, CEO of Mercedes-AMG GmbH and Head of Mercedes-Benz G-Class & Mercedes Maybach divisions

E PERFORMANCE: Combustion engine at the front, electric motor at the rear

In the SL 63 S E PERFORMANCE, the AMG 4.0-litre V8 biturbo engine on the front axle is also combined with an electric drive unit on the rear axle. It integrates a 150 kW (204 hp), permanently excited synchronous electric motor with an electrically switched two-speed transmission and a mechanical rear axle limited-slip differential. The lightweight high-performance battery is also located in the rear above the rear axle. This compact design results in numerous advantages. The electric motor acts directly on the rear axle and can therefore convert its

Mercedes-Benz AG | 70546 Stuttgart | P +49 711 17 0 | F +49 711 17 2 22 44 | dialog@mercedes-benz.com | www.mercedes-benz.com

Mercedes-Benz AG, Stuttgart, Germany | Domicile and Court of Registry: Stuttgart, Commercial Register No.: 762873 Chairman of the Supervisory Board: Bernd Pischetsrieder Board of Management: Ola Källenius, Chairman; Jörg Burzer, Renata Jungo Brüngger, Sabine Kohleisen, Markus Schäfer, Britta Seeger,

¹ The values given are the determined WLTP CO2 values in accordance with Article 2 No. 3 Implementing Regulation (EU) 2017/1153. The fuel consumption values were calculated based on these values. The electricity consumption was determined based on Regulation 2017/1151/EU.

Hubertus Troska, Harald Wilhelm

The figures are provided in accordance with the German regulation "PKW-EnVKV" and apply to the German market only. Further information on official fuel consumption figures and the official specific CO_2 emissions of new passenger cars can be found in the EU guide "Information on the fuel consumption, CO_2 emissions and energy consumption of new cars", which is available free of charge at all sales dealerships, from DAT Deutsche Automobil Treuhand GmbH and at www.dat.de.

power more directly into propulsion. This provides an extra boost when starting off, accelerating, or overtaking. As slip on the rear axle increases, the driving force of the electric motor is also transferred to the front wheels as required. The mechanical connection of the fully variable AMG Performance 4MATIC+ all-wheel drive makes this possible via the cardan shaft and drive shafts of the front wheels. The positioning on the rear axle improves the weight and axle load distribution in the vehicle and thus forms the basis for convincing handling.

Inspired by Formula 1[™], developed in Affalterbach: the AMG High Performance battery

The development of the lithium-ion energy storage is inspired by technologies proven in the Formula 1^{M} hybrid racing cars of the Mercedes-AMG Petronas F1 Team. The AMG High Performance battery offers high performance that can often be used one after the other. This increases the overall performance of the SL Roadster. Added to this is the rapid energy consumption and high power density. The high-performance battery offers a capacity of 6.1 kWh, 70 kW continuous power and 150 kW peak power. Charging takes place via the installed 3.7 kW on-board charger with alternating current at a charging station, wallbox or household socket. The battery is designed for fast power delivery and consumption and not for the longest possible range. Nevertheless, 13 kilometres of purely electric travel (EAER) enables a practical operating radius.

The basis for the high performance of the AMG 400-volt battery is direct cooling: a high-tech coolant flows around all 560 cells and cools them individually. Every battery needs a defined temperature for optimal power delivery. If the energy storage device becomes too cold or too hot, it temporarily loses noticeable power or must be turned down so as not to be damaged if the temperature is too high. A uniform temperature control of the battery therefore has a decisive influence on its performance, service life and safety.

Operating strategy: electrical power always available

The basic operating strategy is derived from the hybrid power pack of the Mercedes-AMG Petronas Formula 1 racing car. As in the premier class of motorsport, maximum propulsion is always available when the driver needs it - for example, to be able to accelerate powerfully out of corners or when overtaking. The electrical power can always be accessed and frequently reproduced through high recuperation performance and demand-based recharging. The independent battery concept enables the optimal compromise between maximum driving dynamics and efficiency. All components are perfectly co-ordinated with each other: the increase in performance can be experienced and measured immediately.

The eight AMG DYNAMIC SELECT driving programmes "Electric", "Battery Hold", "Comfort", "Smoothness", "Sport", "Sport+", "RACE", and "Individual" are precisely tailored to the new drive technology. They offer a wide range of driving experiences – from efficient to dynamic. The driving programmes adapt important parameters such as the response of the drive and transmission, the steering characteristic, the chassis damping or the sound. The programmes can be selected using the AMG button and the central display in the centre console or the AMG steering wheel buttons.

The performance hybrid usually starts silently ("Silent Mode") in the "Comfort" driving programme when the electric motor is switched on. The "Ready" icon in the instrument cluster signals that the vehicle is ready to drive. In addition, a powerful, sonorous, AMG-typical start-up sound is heard as acoustic feedback on the readiness to drive, which is radiated into the interior via the vehicle speakers. A light step on the accelerator pedal is enough and the AMG Performance Hybrid starts moving.

Recuperation can be selected in four stages

Because the high-performance battery is always in the optimal temperature window of around 45 degrees thanks to direct cooling, recuperation can also be optimised. Normally, a battery heats up a lot when the recuperation output is high, so energy recovery must be limited. Recuperation begins when the driver takes his foot off the accelerator pedal, i.e. in coasting mode without touching the brake pedal. This charges the battery and creates a braking torque. The wheel brakes are protected or, depending on the recuperation level and traffic situation, do not need to be activated at all.

The driver can select four different levels of recuperation power using the right AMG steering wheel button. This applies to all driving programmes except for "Smoothness". In the highest level, so-called "one-pedal" driving is possible. Over 100 kW of power can be fed back into the battery. Another advantage of recuperation: the vehicle does not become faster when driving steeply downhill. The system works like an engine brake.

Visual modifications indicate the E PERFORMANCE drive

The exclusive identifying feature of the new top model in the SL series is the rear section. What's new here is the integrated plug-in loading flap and the model name highlighted in red. There are also grooved trapezoidal twin tailpipe trims on the outside. The "E PERFORMANCE" fender badge on the side indicates the exclusive drive. As standard, the hybrid rolls on 20-inch multi-spoke AMG light-alloy wheels. They are aerodynamically optimised, painted matt black with a high-sheen finish. The dimensions on the front axle are 265/40 R 20 on $9.5 \text{ J} \times 20$ and on the rear axle 295/35 R 20 on $11 \text{ J} \times 20$.

As with the entire series, numerous paints and individual equipment details are also available for the hybrid version. The MANUFAKTUR programme with an extensive selection of exterior and interior customisation is also available. The MANUFAKTUR colour orange flame is new and exclusive. The exterior design can be further accentuated with numerous appearance packages, among other things. There are also 20- and 21-inch light alloy and forged wheels in various colour variants.

Driver-focused interior with extensive choice options

The interior serves the sporty target group as well as customers who value maximum comfort. The cockpit design right down to the portrait format display in the centre console is focused on the driver and impresses with a harmonious overall impression. The practical dimensional concept with 2+2 seats offers generous space in the interior.

One of many highlights in the interior is the electrically adjustable AMG sports seats. They combine good lateral support with high long-distance comfort. The optional AMG performance seats with integrated headrests and ventilation openings in the seat backs are even sportier. Three massage programmes ensure excellent long-distance comfort. This can be increased even further: The ENERGIZING Package Plus combines seating functions and lighting moods to create relaxing comfort programmes.

The large selection of seat covers reflects the range from comfortable to performance-oriented features. One- and two-tone Nappa leather is included, as is the particularly elegant MANUFAKTUR upholstery in Nappa leather with diamond quilting. The sporty side is emphasised by the combination of Nappa leather with MICROCUT microfibre and contrasting topstitching in yellow or red.

MBUX multimedia system with hybrid-specific displays

The MBUX multimedia system (Mercedes-Benz User Experience) is intuitive to use and capable of learning. The SL 63 S E PERFORMANCE contains numerous AMG and hybrid-specific displays and functions. Exclusive menu items such as "AMG Performance" underline the sporty character. Hybrid technology can also be experienced visually: high-quality graphics visualise the power flow of the drive system. The speed, power, torque and temperature of the electric machine can also be called up.

Active aerodynamics re-tuned

The active aerodynamics were also fine-tuned. It is adapted to electrified drive technology. The active aerodynamic element, which is hidden in the underbody in front of the engine, contributes to balanced driving behaviour. It is standard on the SL top model. This carbon profile is an exclusive AMG development and protected by patents. It reacts to the position of the AMG driving programmes and automatically extends

downwards by around 40 millimetres at a speed of 80 km/h. This creates the so-called Venturi effect, which additionally sucks the car onto the road and reduces the lift on the front axle.

Another active component is the extendable rear spoiler seamlessly integrated into the boot lid. It changes its position depending on the driving condition. The AMG aerodynamics team has adapted the control software for the SL 63 S E PERFORMANCE to the higher performance and modified numerous parameters. They include the driving speed, the longitudinal and lateral acceleration, and the steering speed in the calculation. From speeds of 80 km/h, the spoiler adopts five new angular positions to either optimise driving stability or reduce air resistance.

AMG ACTIVE RIDE CONTROL suspension with semi-active roll stabilisation

Also standard is the AMG ACTIVE RIDE CONTROL suspension with semi-active roll stabilisation. The displacement dampers, which can be adjusted in rebound and compression, also have semi-active, interconnected hydraulic elements. They replace the conventional torsion bar stabiliser. This technology makes it possible to reduce body roll movements and provide a wide range of driving programmes. The hydraulic connection of the damper chambers on all four wheels takes place via appropriate lines and the control valves within the adaptive dampers.

The connection of the four spring struts and the pressure regulation of the pump and switching valves allow a very wide roll spring rate while at the same time reducing rolling movements. To put it figuratively: every torsion bar from zero to rigid can be represented automatically. This increases comfort in everyday life because even unevenness on one side is compensated for individually. When cornering dynamically, the hydraulics also actively reduce camber loss. Thanks to the resulting high camber rigidity, the roadster steers very precisely.

When driving straight ahead, the system opens completely depending on the driving programme and driving situation. The system compensates for one-sided obstacles that would otherwise lead to rolling movements. Drivers and passengers experience a significantly more comfortable driving experience. The reduced rolling movements when cornering contribute equally to comfort and driving dynamics. The characteristics of the driving behaviour in the individual driving programmes can also be further differentiated between comfort and sport.

Active rear-axle steering combines agility and stability

The SL 63 S E PERFORMANCE is also equipped with active rear-axle steering as standard. Depending on the speed, the rear wheels steer either in the opposite direction (up to 100 km/h) or in the same direction (faster than 100 km/h) as the front wheels. The system therefore enables both agile and stable driving behaviour. These are characteristics that contrast with each other without rear-axle steering. Further advantages include easier vehicle control at the limit and less steering effort because the front wheel steering ratio is more direct.

Easy to control and stable: the AMG ceramic high-performance composite brake system

In keeping with the extreme performance values and the associated performance, the AMG ceramic highperformance composite brake system, with bronze-coloured 6-piston fixed calipers at the front and 1-piston floating calipers at the rear, comes as standard. Compared to AMG models with a pure combustion engine, it is larger in size: the carbon ceramic brake discs on the front axle measure 420 x 40 millimetres and on the rear axle 380 x 32 millimetres. The braking system impresses with very short braking distances as well as maximum stability and fading stability under heavy use. It also scores points with its long service life. The lightweight material saves additional weight and reduces unsprung masses.

An overview of the data

	Mercedes-AMG SL 63 S E PERFORMANCE
System performance	600 kW (816 hp)
System torque	1,080-1,420 Nm
Internal combustion engine ¹	4.0-litre V8 with direct injection and biturbo charging
Displacement	3,982 cm ³
Max. power combustion engine	450 kW (612 hp) at 5,750-6,500 rpm
Max. torque internal combustion engine	850 Nm at 2,500-4,500 rpm
Max. power electric motor	150 kW (204 hp)
Max. torque electric motor	320 Nm
Drive	AMG Performance 4MATIC+ all-wheel drive with fully variable moment distribution
Transmission	AMG SPEEDSHIFT MCT 9G
Weighted fuel consumption, combined	7.7 l/100 km ²
Weighted CO ₂ emissions, combined	175 g/km ²
Power consumption weighted	11.5 kWh/100 km ²
Energy capacity	6.1 kWh
Electric range	13 km (EAER) km
Acceleration 0-100 km/h	2.9 s
Top speed	317 km/h

Contacts Mercedes-Benz Switzerland

Roger Welti, <u>roger.welti@mercedes-benz.com</u> Livia Steiner, <u>livia.l.steiner@mercedes-benz.com</u>

Further information on Mercedes-Benz in Switzerland is available <u>here</u>. Press releases and digital services for journalists and multipliers can be found on our <u>Media Site Switzerland</u> or on the <u>Mercedes me media</u> online platform.

 $^{^{1}}$ Overall system, depending on the gear combination

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