

The new Audi A4

Life Cycle Assessment



Vorsprung durch Technik

Audi



Audi A4 – the life cycle assessment



Audi has compiled a detailed life cycle assessment for the new Audi A4. One of the bestselling models of the previous model series, the Audi A4 limousine 1.8 TFSI 125 kW multitrronic* (hereinafter: predecessor), was compared with its counterpart in the new model series, the Audi A4 limousine 2.0 TFSI ultra 140kW S tronic** (hereinafter: new Audi A4).

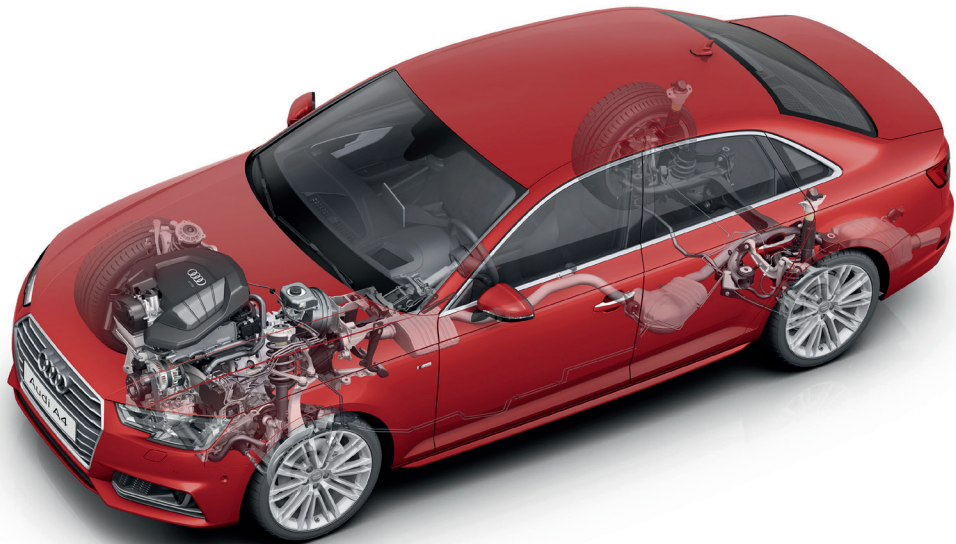
Thanks to an intelligent choice of materials and enhanced lightweight construction measures, the new Audi A4 is 65 kg lighter than its predecessor.

What effect the changes in weight – and also in the material mix and engine efficiency – have on the life cycle assessment is described and explained in more detail on the following pages.

fuel consumption and emission values:

*Audi A4 limousine 1.8 TFSI 125 kW multitrronic (predecessor): fuel consumption: urban: 7,2l/100km, country: 4,9l/100 km, combined: 5,7 l/100 km; CO₂ emissions combined: 132 g/km; efficiency category B

**Audi A4 limousine 2.0 TFSI ultra 140 kW S tronic (new model): fuel consumption: urban: 6,3 – 6,2l/100 km, country: 4,2 – 4,0l/100 km, combined: 4,9 – 4,8l/100 km, CO₂ emissions combined: 112 – 109 g/km; efficiency category A



Audi A4 – the materials

The materials that are used have a major influence on the results of the life cycle assessment. For example, more energy is consumed when producing light metals such as aluminium and magnesium than for steel; this has the effect of increasing greenhouse gas emissions during their production phase.

The inventory of materials was determined for the models under examination and summarized according to VDA classification 231-106.

There are virtually no changes in the material inventory between the two analysed models. Solely the proportion of steel and ferrous materials has been reduced on the new Audi A4 by one percentage point. In return, the proportion of light metals has been increased to the same extent. There are, however, more substantial changes within these two categories. In the new Audi A4**, for instance, ultra high-strength steel alloys and hot-formed, hot-stamped steels have been used more extensively.

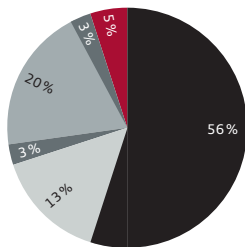
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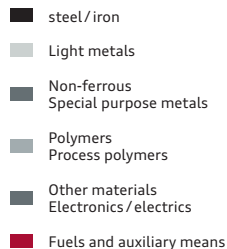
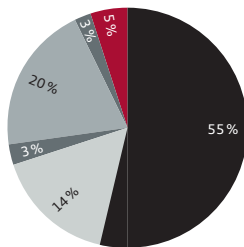
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Material inventory of the analysed models

**Audi A4 1.8 TFSI 125 kW
multitronic (predecessor)***



**Audi A4 2.0 TFSI ultra 140 kW
S tronic (new Audi A4)****



fuel consumption and emission values:

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Audi A4 – the results of the life cycle assessment

Thanks to the intelligent choice of materials, the reduction of weight and more efficient engines, the new Audi A4** causes over its entire life cycle 6.3 fewer tonnes of greenhouse gas emissions than its predecessor*, which represents a reduction of around 16%.

Despite lightweight construction measures, Audi engineers succeeded in lowering greenhouse gas emissions during the production. The predecessor generated around 7.2 tonnes of greenhouse gas emissions in the production phase, whereas it was possible to reduce greenhouse gas emissions during the production of the new Audi A4** around 4% to 6.8 tonnes. Over its entire life cycle, the predecessor generates some 40 tonnes of greenhouse gas emissions, the new Audi A4** around 34 tonnes. In other categories too, it was possible to reduce the impact of the new Audi A4 on the environment. The acidification and the eutrophication potential were both reduced by 10% and the photochemical ozone (summer smog) creation potential by 5%.

Reduction in almost all the assessed effect categories:

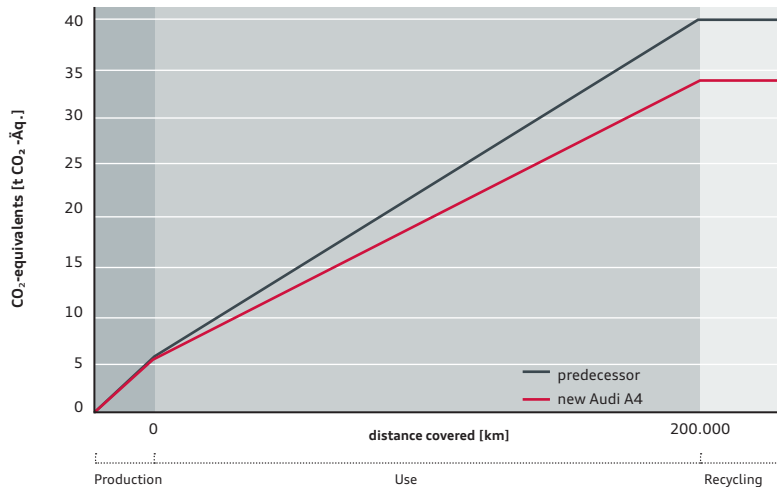
Greenhouse gas potential	- 16 %
Eutrophication potential	- 10 %
Ozone depletion potential	0 %
Photochemical ozone creation potential	- 5 %
Acidification potential	- 10 %

fuel consumption and emission values:

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Greenhouse gas emission values for the entire life cycle of the Audi A4



Greenhouse gases were reduced even in the production phase of the new Audi A4.

Conclusion

The public today tends to judge vehicles to a large extent by their fuel consumption. Here too, Audi looks one step ahead. Its life cycle assessment analyzes effects on the environment for the vehicle's entire lifetime. The use of sustainable materials and manufacturing processes can greatly reduce these effects.

The life cycle assessment prepared by Audi for the new Audi A4** shows that the new model has improved in all of the environmental categories or that the environmental impacts have remained on the predecessor's* level. Thanks to optimized materials, Audi engineers have succeeded in not only reducing the weight of the vehicle even further, but also in reducing the environmental impact as early as in the production phase in almost all of the categories analysed.

These results demonstrate that Audi is on the right track towards sustainable and resource-conserving mobility.

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Further information on official fuel consumption figures and the official specific CO₂ emissions of new passenger cars can be found in the “Guide on the fuel economy, CO₂ emissions and power consumption of all new passenger car models,” which is available free of charge at all sales dealerships and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen, Germany (www.dat.de).