

Enclosure 1 to SI 64 09 96 (154), edition 02/2019

In order to fulfil the environmental compatibility requirements of BMW products and to reduce the ozone pollution of the earth's atmosphere caused by refrigerants needed for heating and air conditioning systems, from April 1991 on and starting with the model E32/M30 and the optional equipment IHKA, only the chlorine-free refrigerant R134a (tetrafluoroethane) is used.

This product has been used since September 1992 in all models. The refrigerant used so far, called Frigen R12, is omitted.

The refrigerant used in the vehicle and the capacity are specified on the type plate in the engine compartment.

The boiling point of the R134a is -26.2°C. The refrigerant R134a is non-combustible and does not form an explosive mixture in combination with air.

It is odourless and non-corrosive. However, it is very hygroscopic, i. e. it readily combines with water.

Safety regulations:

The safety regulations as specified for the refrigerant Frigen R12 in point 2.0 apply.

<i>Trade name</i>	<i>BMW part number</i>	<i>Container size</i>
Refrigerant R134a	83 19 9 408 386	12 kg steel cylinder

Enclosure 2 to SI 64 09 96 (154), edition 02/2019

Especially for the refrigerant R134a (tetrafluorethane), a PAG refrigerant oil (polyalkylene glycol) had to be selected which ensures the lubrication of the compressor.

This oil may not be mixed with the refrigerant oil Sanden SP-A2!

This refrigerant oil is very hygroscopic and must only be exposed to air humidity for a very short period.

<i>Trade name</i>	<i>BMW part number</i>	<i>Container size</i>
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Refrigerant oil 1	81 22 9 407 724	250 ml tin can
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Enclosure 3 to SI 64 09 96 (154), edition 02/2019

To comply with EU Directive 2006/40/EC, refrigerant R1234yf (Tetrafluoropropene) has been introduced as a significantly more environmentally-friendly alternative to R134a (Tetrafluorethane).

This refrigerant will be introduced in the BMW i 01 from September 2013 onwards in certain countries. R134a will continue to be used in other vehicles/countries.

The type plate in the engine compartment indicates which refrigerant has been used.

Both refrigerants have comparable thermodynamic properties. The boiling point of R1234yf is -29°C (R134a: -26°C).

R1234yf is odourless, non-corrosive and inflammable at high temperatures.

It is extremely hygroscopic, i.e. it readily combines with water.

Safety regulations:

Avoid contact with the liquid refrigerant to prevent signs of frostbite. Particularly protect the eyes with safety goggles. If an accident occurs, contact a physician immediately.

R1234yf is heavier than air, therefore do not discharge refrigerant in closed spaces. There is a risk of asphyxiation in pits. Do not store or heat refrigerant cylinder above 45 ° C.

Welding is not permitted on a filled system or in the surrounding area. An explosion hazard is presented by the possible excess pressure that could occur from heating. Furthermore, R1234yf decomposes at high temperatures and exposure to flames. The products of decomposition (hydrofluoric acids) are poisonous and harmful to health.

Observe the safety regulations stipulated on the safety data sheet (available on the Aftersales Assistance Portal)!

Note in case of contaminated refrigerant R1234yf:

If the A/C service station for R1234yf identifies contaminated refrigerant in the refrigerant circuit of the vehicle before evacuation, then a special procedure to draw off and dispose of this refrigerant must be followed.

Observe notes on drawing off, evacuating and filling the heating and air conditioning system!

Trade name	BMW part number	Container size
Refrigerant R1234yf	83 19 2 354 790	12 kg steel cylinder with 5 kg load

Enclosure 4 to SI 64 09 96 (154), edition 02/2019

A refrigerant oil that lubricates the electric A/C compressor and has a high isolation resistance is especially needed for vehicles with an electric A/C compressor.

This refrigerant oil will be first introduced from 09/2013 in the BMW i 01 on a country-specific basis **and will be used with refrigerants R134a and R1234yf.**

Caution!

I01, I12 with production date up to 08/2014:

In national-market versions with R134a the type plate shows incorrect refrigerant oil!

Always use Sanden SP-A2

Existing refrigerant oils must not be mixed with the new refrigerant oil!

When filling the refrigerant circuit with R134a, always ensure you use the correct, vehicle-specific refrigerant oil type!

To avoid mixing the different refrigerant oil types, flush the hoses of the A/C service station after every drawing off/filling procedure!

In the event of a sudden discharge of refrigerant or if the refrigerant circuit has been opened, observe the notes for opening and exchanging parts in the refrigerant circuit.

The amount of refrigerant oil is extremely important for the entire heating and air conditioning system. Part of this refrigerant oil (approx. 25 % depending on the amount of refrigerant) mixes with the refrigerant and constantly circulates through the circuit. This refrigerant oil lubricates the moving parts of the circuit such as the expansion valve and the air conditioning compressor.

Check the respective system capacity on the label on the air conditioning compressor when refilling.

When replacing the air conditioning compressor, never forget to adjust the amount of refrigerant oil!

This refrigerant oil is very hygroscopic and must only be exposed to air humidity for as short a time as possible.

Observe notes on refrigerant and refrigerant oil from 09/2013.

Trade name	BMW part number	Container size
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Sanden SP-A2	83 22 2 339 920	250 ml
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Enclosure 6 of SI 64 09 96 (154), 02/2019

Lifetime coolant i3 was used for the first time from 09/2013 onwards in the BMW i01 **exclusively for the heater circuit**.

Risk of mixing up

The silicate free coolant i3 is dyed blue.

Do not use coolant i3 for the cooling circuits of the electrical machine or the range extender!

Do not use coolant for cooling circuits of the electrical machine or the range extender in the heater circuit!

Do not use other coolants, on account of the risk of flocculation and the associated clogging of the heat exchanger!

Note:

For an overview about the use of coolant, see technically suitable antifreeze and corrosion inhibitors.

Coolant i3 must not be used for all equipment specifications.

Mixture ratio with water is 1:1. This provides antifreeze protection down to -40 °C.

Trade name BMW part number Container size

Coolant i3	83 51 2 355 296	1000 ml
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