



Approval list of engine and commercial vehicle manufacturers

for operation with biodiesel (B10 | B20 | B30 | B100)



MVAK
Mittebundsverband abfallbasierter Kraftstoffe

uföp



Zukunft tanken.

Approval list of engine and commercial vehicle manufacturers for operation with biodiesel (B10 | B20 | B30 | B100)

The current approval list provides you with an overview of which commercial vehicles and engines you can operate with higher proportions of biodiesel (B10, B20, B30) and with pure biodiesel (B100) without any problems. The list is broken down according to the different emission levels, up to the current Euro VI standard.

Two mechanisms allow you to benefit from a price advantage through the higher use of biodiesel:

- The more biodiesel is contained in the fuel, the more greenhouse gas emissions can be saved compared to conventional diesel fuel. The savings have a financial equivalent value and can be sold in the so-called quota trade, which is organised by the biodiesel producer.
- Since January 2021, fossil diesel fuel has become more expensive as part of the CO₂ pricing. The CO₂ price will continue to rise in the coming years. For biodiesel as a climate-friendly fuel, on the other hand, the CO₂ price surcharge does not apply, making its use even more financially attractive.

Special requirements also apply to commercial vehicles procured in public procurement: trucks and buses must be classified as "low-emission" or "zero-emission" to a certain extent. A significant part of these legal obligations can be met by using pure biodiesel (B100).

Therefore, use higher proportions of biodiesel or pure biodiesel in approved commercial vehicles and engines to benefit from these advantages!

The aim of the European Union's climate and energy policy is to drastically reduce greenhouse gas emissions to limit global warming. In the transport sector, biodiesel (fatty acid methyl ester) is already an alternative fuel of excellent quality and sufficient quantity that saves on average more than 80 % (as of: BLE evaluation report 2020) CO₂ emissions. By using sustainably certified biodiesel, an immediately effective active contribution to climate protection can be made.

Biodiesel Quality

The quality of biodiesel is crucial when vehicles are operated with B100. Fuels must meet the minimum requirements of the applicable standards. In Europe, neat FAME is subject to EN 14214, which is also specified in the product information of vehicle manufacturers as a prerequisite for use and warranty. Diesel fuels with biodiesel blends of up to 10 %, 20 % or 30 % (B10, B20, B30) are based on EN 16734 or EN 16709 respectively. In America, ASTM D 6751 is specified for B100 and ASTM D7467 for B20.

In addition to purchasing biodiesel according to standard specification, you should also ensure that you receive a current certificate of analysis for each supply of biodiesel and that the biodiesel is already additized with oxidation stabilizers during production. Further information on storage, transport and changeover to biodiesel can be found on the websites of the associations.

Most engine manufacturers recommend using biodiesel whose suppliers and producers have monitored quality assurance systems. Biodiesel from members of the Arbeitsgemeinschaft Qualitätsmanagement Biodiesel e. V. (AGQM) is subject to the AGQM quality management system which ensures that the current requirements of DIN EN 14214 are met across production, transport, and trade. In addition, the unannounced sampling carried out several times a year by the AGQM showed that the field values of the critical parameters (Na, K, Ca, Mg, P) are significantly below the standard limits for the members of the AGQM.

Therefore, pay attention to the AGQM logo when purchasing biodiesel.



Note:

The contents of this approval list have been created with the utmost care. Nevertheless, no guarantee can be given for the accuracy, completeness and timeliness of the content provided. The use of the contents of this list is at your own risk. It is therefore strongly recommended to confirm the approval by the respective vehicle or engine manufacturer prior to the use of biodiesel or biodiesel-containing fuels and to obtain information on any special maintenance and service requirements that may exist.

Caterpillar / Zeppelin

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
ACERT-engines: C3,4B; C4,4; C6,6; C7,1; C9,3; C13; C15; C18; C27; C32	With exhaust gas aftertreatment	EU Stage IIIB and higher Tier 4 interim and final	Up to 20% FAME (B20) acc. to ASTM D7467 and API density 30–45	Special operating requirements and additional maintenance recommendations - operation and maintenance manual. Only in combination with ultra low sulfur diesel (max. 10 mg/kg). Observe CAT-specification of FAME used acc. to ASTM D6751 or EN 14214.
C0.5-C2.2 ACERT-engines : C7, C9, C9, 3, C11, C13, C15, C18, C27, C32, C175	Without exhaust gas aftertreatment	All emission levels	Up to 20 % FAME (B20) acc. to ASTM D7467 and API density 30-45 (Information on use of higher mixing ratios up to B100 can be obtained from your Cat dealer)	— " —
3114, 3116, 3126, 3176, 3196, 3208, 3306, 3406, 3408, 3412, 3456, 3406E, 3408E, 3412E	—	— " —	— " —	— " —
Model series 3500, 3600 C-9, C-10, C-12, C-15, C-16, C-18	—	— " —	— " —	— " —
Model series C280, CM20, CM25, CM32	—	— " —	— " —	— " —

DAF

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
MX-11, MX-13 (from model year 2017)	CF / XF / XG / XG+	Euro VI	Up to 30 % FAME (B30) acc. to EN 16709	For older generations MX-11 and MX-13 engines only diesel according to EN 590 allowed. Service intervals are shorter when using B30 (EN16709), additional maintenance is required (check DAF RMI for more details).
MX	CF85 – XF 105	Euro IV / V	100 % FAME (B100) acc. to EN 14214	Service intervals are shorter when using B100 (EN14214), or B30 (EN16709) – additional maintenance is required (check DAF RMI for more details).
PR	CF75	– „ –	– „ –	– „ –
PX-4, PX-5, PX-7	LF / CF	Euro VI	Up to 20 % FAME (B20) acc. to EN 16709	CF trucks with PF-7 engine only.
Airtop 2000 ST (ACH-W3)	Auxiliary heater	–	100 % FAME (B100) acc. to EN 14214	–

Daimler (EvoBus)

See Mercedes Benz

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
DEUTZ Natural Fuel Engine®	Agricultural engines	EU Stage IIIA	100% FAME (B100) acc. to EN 14214 And up to 30% FAME (B30/B20) acc. to EN 16709 And up to 10 % FAME (B10) acc. to EN 16734	Engines without exhaust gas aftertreatment. For special boundary conditions see TR 0199-99-01218/5. Halved lubricant oil change intervals with B100.
413, 513, 912, 913, 914, 1011, 2011, 1012, 1013, 2012, 2013, TCD 2012 2V/4V, TCD 2013 2V/2013 4V, TCD 2015 (by 07/01/2021)	Industrial engines	Up to EU Stage IIIA	— „ —	— „ —
914 M, 1013 M, 1015 M, 2015 M	Marine engines	—	— „ —	— „ —
TCD 2013 4V	Commercial vehicle engines	Up to Euro III	— „ —	— „ —
TCD 2013 4V	Commercial vehicle engines	Euro IV / Euro V	— „ —	Engines with exhaust aftertreatment (adaptation EAT replacement interval). No release for motors with active DPF regeneration (burner). For special boundary conditions see TR 0199-99-01218/5. Halved lubricant oil change intervals with B100.
TCD 4.1, TCD 6.1, TCD 7.8	Agricultural engines	EU Stage IIIB	— „ —	— „ —
TCD 12.0 V6, TCD 16.0 V8	Industrial and agricultural engineering engines	EU Stage IIIB / EU Stage IV	— „ —	— „ —
D 2.9, TD 2.9, TCD 2.9, TD 3.6, TCD 3.6, TCD 4.1, TCD 6.1, TTCD 6.1, TCD 7.8, TTCD 7.8, TCD 12.0 V6, TCD 16.0 V8	— „ —	EU Stage IV	— „ —	— „ —
D 2.2, TD 2.2, TCD 2.2, TD 2.9, TCD 2.9, TD 3.6, TCD 3.6, TCD 12.0 V6, TCD 16.0 V8	— „ —	EU Stage V	Up to 30% Biodiesel (B30/B20) acc. to EN 16709 Up to 10 % Biodiesel (B10) acc. to EN 16734	Engines with exhaust aftertreatment (adjustment of EAT replacement interval). For special boundary conditions see TR 0199-99-01218/5.

IVECO / IVECO Bus (formerly Irisbus)

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
Cursor-engines 8/10/13 - engines with PDE	EuroTech, EuroStar, EuroTrakker, Stralis, Trakker	Euro II/III Euro IV/V	100 % FAME (B100) acc. to EN 14214	Approval is connected to certain equipment and service guidelines.
Engines with distributor injection pumps and common-rail injection systems	-	-	-	Not approved

John Deere

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
All engines	-	Up to EU Stage IIIA	100 % FAME (B100) acc. to EN 14214	-
All engines	-	EU Stage IIIB and IV	Up to 20 % FAME (B20) acc. to EN 14214	EU Stage V not approved

Liebherr

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
-	-	-	-	Approval depending on engine specification, must be requested at the manufacturer.

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
D08	Lkw und Bus	Euro V	100 % Biodiesel (B100) acc. to EN 14214	The MAN documents and further information on maintenance intervals and requirements can be found on the MAN After SalesPortals (http://asp.man.eu).
D0836LOH75, D0836LOH76, D0836LOH77	Bus	Euro VI a	— „ —	— „ —
D0836LOH83, D0836LOH84, D0836LOH85	— „ —	Euro VI c	— „ —	— „ —
D0836LOH88, D0836LOH89	— „ —	Euro VI d	— „ —	— „ —
D0836LOH92, D0836LOH93	— „ —	Euro VI e	— „ —	— „ —
D1556LOH13, D1556LOH14, D1556LOH15	— „ —	Euro VI d	— „ —	— „ —
D1556LOH19, D1556LOH20, D1556LOH21	— „ —	Euro VI e	— „ —	— „ —
D2066LUH55, D2066LUH56	— „ —	Euro VI a	— „ —	— „ —
D2066LUH61, D2066LUH62	— „ —	Euro VI c	— „ —	— „ —
D2066LUH67, D2066LUH68, D2066LUH70	— „ —	Euro VI d	— „ —	— „ —
D2676 - LOH50 to LOH52	— „ —	Euro VI e	— „ —	— „ —
D20	Truck and Bus	Euro V	— „ —	— „ —
D26	Truck	Euro V	— „ —	— „ —
D2676LF54, D2676LF55, D2676LF56, D2676LF57, D2676LF58	— „ —	Euro VI a	— „ —	— „ —
D2676LF63, D2676LF64, D2676LF65	— „ —	Euro VI c	— „ —	— „ —
D2676LF81, D2676LF82, D2676LF83	— „ —	Euro VI d	— „ —	— „ —
D2676LFAM, D2676LFAN, D2676LFAO	— „ —	Euro VI e	— „ —	— „ —

Mercedes-Benz Trucks, EvoBus – Daimler

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
BM 471.926 (OM 471)	Actros, Arocs	Up to Euro VI c	100 % FAME (B100) acc. to EN 14214	With biodiesel code
BR 500	Actros, Travego	Up to Euro V	– „ –	–
BR 900	Atego, Axor, Eonic	– „ –	– „ –	–
BR 900 (OM 926 LA)	Zetros, Tourino	– „ –	– „ –	–
BM 457.9	Axor	– „ –	– „ –	–

MTU

Engine Types	Vehicle Types	Emission Level	Approved Blend Level	Special Remarks
S1600 Gx0; S2000 Gx2/Gx4/Gx5/Gx6; S4000 Cx0/Cx1/Gx2/Gx3/Mx0/Mx1/Mx3 S1163 Mx4 S8000 Mx1	All years of construction	–	Up to 20 % FAME (B20) acc. to EN 16709	Special operating requirements and additional maintenance recommendations.
S2000Gx3, S4000Gx1	With low-pressure fuel pipe made of metal	–	– „ –	– „ –
S4000 Gx4 despite G44F, G44LF, G94F, G94LF	All years of construction	–	– „ –	– „ –
OM 457 LA, 460, 500, 900	From series production	–	100 % FAME (B100) acc. to EN 14214	– „ –

Renault Trucks

Engine Types	Vehicle Types	Emission level	Approved Blend Level	Special Remarks
All engines	All types	Euro VI	Up to 10 % FAME (B10) acc. to EN 16734	–
DT15, DT18	Renault Trucks D Renault Trucks D Wide	Euro VI	100 % FAME (B100) acc. to EN 14214 Up to 30 % FAME (B30) acc. to EN 16709	Option "Biodiesel 100 %" or "Biodiesel 30 %" required. From 2022, the D and D Wide series will only be offered in Germany in electric form.
DE 13 (480 hp)	Renault Trucks T / T High Renault Trucks C 2.5 Renault Trucks K	Euro VI	100 % FAME (B100) acc. to EN 14214	Option "Biodiesel" required.

SCANIA

Engine Types	Vehicle Types	Emission level	Approved Blend Level	Special Remarks
DC07 112 (250 hp); 113 (280 hp) DC09 126 (320 hp); 127 (360 hp); 140 (320 hp); 141 (360 hp) DC13 141 (410 hp); 148 (450 hp); 163 (410 hp); 164 (450 hp); 174 (500 hp), 177 (460 hp) DC16 117 (580 hp); 121 (590 hp)	–	Euro VI (XPI)	100 % FAME (B100) acc. to EN14214, max. 4 mg/kg ash constituents and max. 1 mg/kg phosphorus, modification to biodiesel operation, shortened change intervals	General exceptions: Rescue vehicles and vehicles with service life > 2 months, industrial engines with XPI, buses with HPI engines and non-FAME approved XPI engines.
All engines	All types	Up to Euro V	– „ –	– „ –
All engines	All types	All emission levels	Up to 10 % FAME (B10) acc. to EN 16734	– „ –

Volvo Trucks

Engine Types	Vehicle Types	Emission level	Approved Blend Level	Special Remarks
D5K240	FL	Euro VI	100 % FAME (B100) acc. to EN 14214	Option "DIESEL-B" required.
D8K320	FE	- " -	- " -	- " -
D13K460	FH / FM / FMX	- " -	- " -	- " -
D13K500	- " -	- " -	- " -	- " -

Further information on biodiesel can be obtained from the following associations:



Arbeitsgemeinschaft
Qualitätsmanagement Biodiesel e. V.
(AGQM)
Am Weidendamm 1A
10117 Berlin
info@agqm-biodiesel.de
www.agqm-biodiesel.de



Mittelstandsverband abfallbasierter
Kraftstoffe e. V.
(MVaK)
Unter den Linden 10
10117 Berlin
info@mvak.eu
www.mvak.eu



Union zur Förderung von
Öl- und Proteinpflanzen e. V.
(UFOP)
Claire-Waldoff-Straße 7
10117 Berlin
info@ufop.de
www.ufop.de



Zukunft tanken.

Verband der Deutschen
Biokraftstoffindustrie e. V.
(VDB)
Am Weidendamm 1A
10117 Berlin
info@biokraftstoffverband.de
www.biokraftstoffverband.de

January 2022