Approvals in inland navigation

for operation with biodiesel (B7 | B20 | B30 | B100)

MVaK
Mittelstandsverband abfallbasierter Kraftstoffe

ufop

VDB Zukunft tanken.

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The rapid and radical decrease of the greenhouse-gas (GHG) emissions in the transport sector is one of the main targets of the climate and energy policies of the European Union and the German Federal Government. In Germany and many other European countries there are no binding requirements for the promotion of renewable energies or for the reduction of GHG emissions in the shipping sector. It is also not part of the European Union Emissions Trading System (EU ETS).

Shipping transport has increased steadily worldwide in recent decades. There is currently about 90 percent of the world trade by sea. Around a third of the world's ship movement is in the European Union's destination or departure port. Shipping has a significant impact on prospertiy, climate and health. At the latest with the Paris climate agreement in 2015, the pressure on the shipping increased to provide an adequate contribution to achievement of the climate protection goals.

Beside the efforts to improve the energy efficiency and recording of the GHG emissions specific measures to reduce the particulate emissions are required. In the shipping industry, there is considerable potential for current engine systems to reduce emissions through technical and operational measures as well as alternative fuels.

The use of biodiesel can significantly reduce the particle emissions in the exhaust gas. Furthermore, biodiesel is a practically sulphur-free and easily biodegradable fuel (Water Hazard Class - WGK 1) and due to its high flash point it is no hazardous goods. Biodiesel is subject to a comprehensive sustainability certification from cultivation to production.

It is therefore to be welcomed that a lot of engine manufacturers in the inland navigation sector meet the technical requirements for the use of biodiesel and readily release their engines for B7, B20, B30 or B100. In this way, an active contribution to climate protection can be made immediately. Biodiesel is in Europe by far the most important biofuel, and the fleet operation of inland waterway vessels with higher blends (B20, B30) or pure bio diesel already offers the opportunity to significantly reduce GHG emissions.

In Germany, the Federal Immission Control Ordinance (10. BlmSchV) defines the various marine fuels, while the requirements for these fuels result from DIN ISO 8217 and the additional sulpfur limits. The so-called DF-Grades (distillate fuels DFA, DFZ and DFB) may contain up to 7 % (V/V) biodiesel. Other fuels can be used for inland waterway vessels, if the sulfphur content of max. 10 mg/kg are observed. In contrast to marine diesel, there is currently an energy tax on biodiesel used in merchant shipping (§ 27 Abs. 1 EnergieStG). Relief of the energy tax is possible and must be applied at the main customs office in accordance with § 52 EnergieStG.

The present approval list for marine engines provides an overview of the approved engines and the maximum permitted share of biodiesel.

Baudouin Moteurs

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
					No approval

Caterpillar

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
C7.1	Tier 3 IMO II		B20	EN 16709	
C9.3	Acert		B20	EN 16709	
C12			B20	EN 16709	
C18	Acert IMO II		B20	EN 16709	
C18	Acert TIER 3		B20	EN 16709	
C32	Acert IMO II		B20	EN 16709	
C32	Acert TIER 3		B20	EN 16709	
C32	Tier 3 IMO II		B20	EN 16709	
C32	Tier 4 IMO III		B20	EN 16709	
3508 C			B20	EN 16709	
3512C			B20	EN 16709	
3512C	Tier 3		B20	EN 16709	
3512E			B20	EN 16709	
3512C	IMO II		B20	EN 16709	
3516C	Tier 3		B20	EN 16709	
3516E			B20	EN 16709	
C175-16			B20	EN 16709	
C280-6			B20	EN 16709	
C280-8			B20	EN 16709	
C280-8	Tier 4		B20	EN 16709	
C280-12			B20	EN 16709	
C280-12	Tier 4		B20	EN 16709	
C280-16			B20	EN 16709	

Cummins

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
X15	2017 Tier 3	**EU IIIA**	**B20**	EN 16709	
QSK95	Tier 4		**B20**	EN 16709	
QSK50	Tier 3	**EU IIIA**	**B5**	EN 590	
QSK19			**B5**	EN 590	
QSK60			**B5**	EN 590	

Deutz AG

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
914 M		**EU IIIA**	**B100**	EN 14214	Engines without exhaust aftertreatment, boundary conditions see TR 0199-99-01218
1013 M		**EU IIIA**	**B20/B30**	EN 16709	
2015 M		**EU IIIA**	**B10**	EN 16734	

FPT Industrial

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
					No approval

Isotta Fraschini Motori

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
					No approval

MAN

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
					No approval

MTU

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
8V 2000 M61	IMO II	CCNR II	B7	EN 590	
12V 2000 M61	IMO II	CCNR II	B7	EN 590	
8V 2000 M72	IMO II	EU IIIA	B7	EN 590	
16V 2000 M61	IMO II	CCNR II	B7	EN 590	
8V 2000 M84	IMO II	CCNR II	B7	EN 590	
10V 2000 M72	IMO II	EU IIIA	B7	EN 590	
8V 2000 M94	IMO II	CCNR II	B7	EN 590	
12V 2000 M72	IMO II	EU IIIA	B7	EN 590	
16V 2000 M72	IMO II	EU IIIA	B7	EN 590	
8V 4000 M53R	IMO II	EU IIIA	B7	EN 590	
8V 4000 M53	IMO II	EU IIIA	B7	EN 590	
8V 4000 M63	IMO II	EU IIIA	B7	EN 590	
12V 4000 M53R	IMO II	EU IIIA	B7	EN 590	
12V 4000 M53	IMO II	EU IIIA	B7	EN 590	
16V 4000 M53R	IMO II	EU IIIA	B7	EN 590	
12V 4000 M63	IMO II	EU IIIA	B7	EN 590	
16V 4000 M53R	IMO II	EU IIIA	B7	EN 590	
16V 4000 M53	IMO II	EU IIIA	B7	EN 590	
16V 4000 M63	IMO II	EU IIIA	B7	EN 590	
16V 4000 M63L	IMO II	EU IIIA	B7	EN 590	

Scania Marine Engines

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
DI16 084M			B100	EN 14214	
DI16 090M			B100	EN 14214	
DI16 091M			B100	EN 14214	
DI16 094M			B100	EN 14214	

Scania Marine Engines

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
DI09 074M			B100	EN 14214	
DI13 074M			B100	EN 14214	
DI13 075M			B100	EN 14214	
DI13 084M			B100	EN 14214	
DI13 089M			B100	EN 14214	
DI13 091M			B100	EN 14214	
DI16 074M			B100	EN 14214	

Volvo Penta

Series	Year of manufacture/Tier/Level	Emission level	Approval for FAME	Standard	Remarks
All engines			B7	EN 590	
Engines after 01/01/2012			B30	EN 16709	

Biodiesel Quality

The quality of biodiesel is crucial when marine engines are operated with B100 or biodiesel blends. The requirements for biodiesel as a neat fuel or blend component are specified via EN 14214 across Europe. 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.

Most engine manufacturers recommend using biodiesel whose suppliers and producers have monitored quality assurance systems. Biodiesel of AGQM members is subject to the quality management system of the Association Quality Management Biodiesel (AGQM). This system ensures that the current requirements of DIN EN 14214 and vehicle manufacturers are met through production, trade and transport. Many engine manufacturers believe that the limits specified in the standards are too high for trouble-free use of biodiesel. AGQM therefore checks its own, stricter quality standards. By unannounced samplings at their members AGQM was able to show that the real values of the critical parameters are well below the standard limits.

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 ship 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.

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

Arbeitsgemeinschaft Qualitäts-
management Biodiesel e. V. (AGQM)
Claire-Waldoff-Straße 7
10117 Berlin
info@agqm-biodiesel.de
www.agqm-biodiesel.de

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

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

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