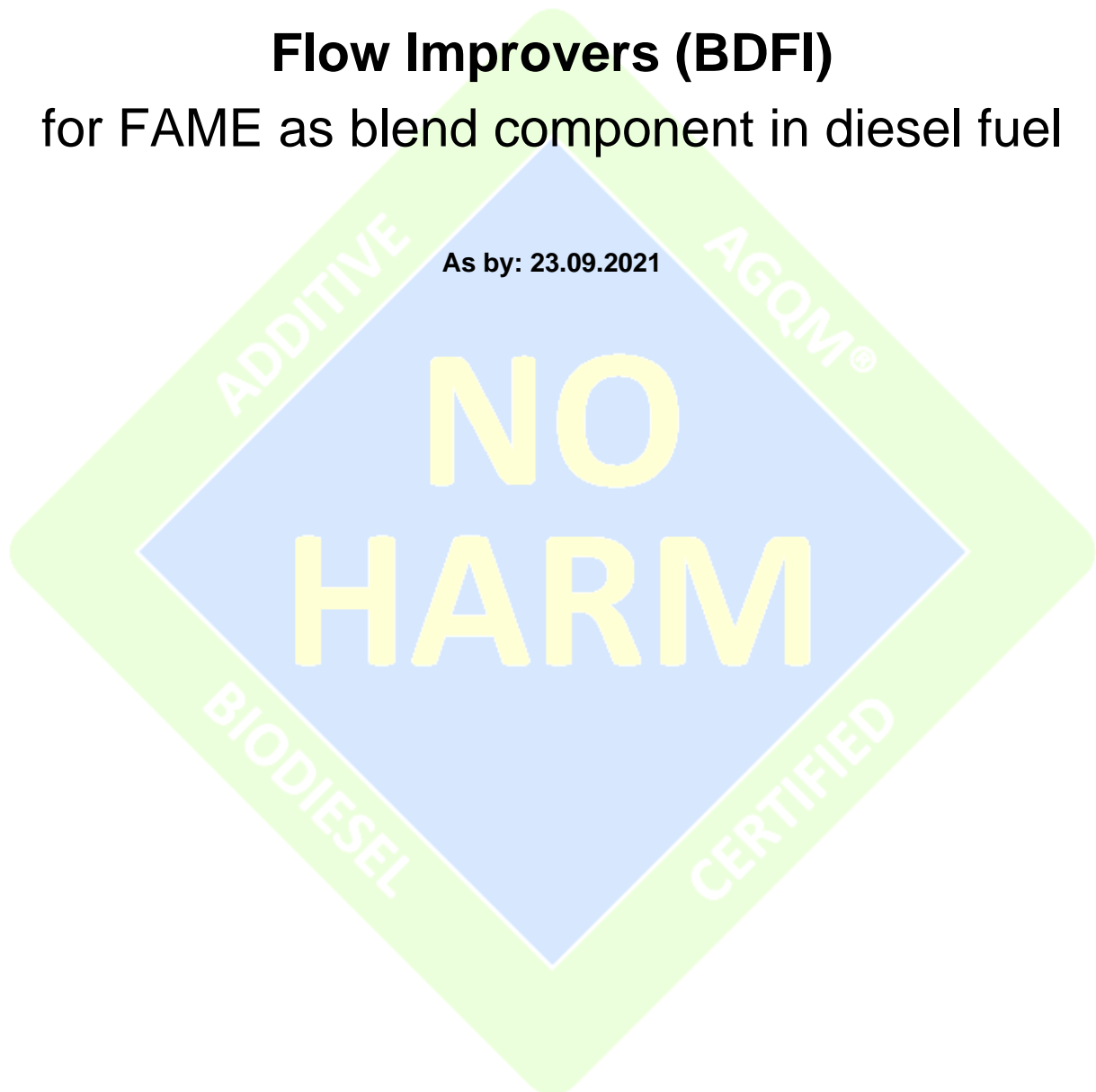


No-Harm List

Flow Improvers (BDFI)

for FAME as blend component in diesel fuel



The no-harm test for flow improvers for FAME as blend component in diesel fuel comprises the following test criteria:

- Minimum requirements (B100)
- XUD9 test according to CEC F-23-1-01 (nozzle fouling; B10)
- DGMK filtration test 663 (B10)
- Check of compatibility with engine oil (derived from DGMK 531-1; B10)
- Corrosion test (B10)
- Foam test (B10)
- Emulsion test (B10)

Products that fulfil all criteria of the no-harm test are published in this no-harm list of Association Quality Management Biodiesel (AGQM). Additional information can be found on the website (<http://www.agqm-biodiesel.com>).

The no-harm tests are carried out with B100 (FAME, 70% RME, 30% SME) and B10 blends (10% (V/V) FAME in diesel fuel) and all requirements of the test must be met at a dosage rate recommended by the producer. The maximum dosage rate is 1.0% (w/w). The concentration tested in the no-harm test is included in the list below. Please note that the no-harm properties of the additive are only valid for the indicated dosage rate or lower dosages. The no-harm properties were only tested in the fuel mixture specified above and the test results only apply to this accordingly.

Since 2020, verification of the function of the additives regarding CFPP reduction is no longer part of the no-harm test and must be tested individually for the FAME used.

Dilutions: If a modified additive has the same ingredients and ratio of active components as a product that passed the no-harm test successfully and only the ratio between the active components and the solvent is changed, the no-harm test does not have to be repeated. The additive will be added to the no-harm list, if the producer declares bindingly that it is a dilution of a product already tested. This will also be mentioned in the no-harm list.

Since the development of the first no-harm tests, test methods and techniques for testing quality properties have developed further or have been newly developed. To take this technical progress into account and to meet future requirements and challenges with the no-harm test, all products that have successfully passed the no-harm test must be tested again every 5 years if the no-harm test procedure changes significantly. Significant changes include, for example, newly developed test methods that replace methods from the no-harm test, higher requirements due to changes in the limit values or the implementation of new parameters that are necessary to ensure the no-harm properties of a product. Products that have not been retested will be removed from the no-harm list.

AGQM carried out the project with the greatest possible scientific accuracy and care. Nevertheless, no guarantee can be given for the correctness, completeness and topicality of the content provided. For this reason, we exclude any liability in connection with the use of the no-harm list. It is recommended to obtain the information directly from the manufacturer.

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Overview of the successfully tested Biodiesel Flow Improvers

The products listed below were tested according to the no-harm test conditions introduced in 2020 with the CFPP criterion: No deterioration of the CFPP of the additised sample compared to the non-additised reference.

Reg. no.	Filed	Company	Brand name	Test level	Tested dosage rate [mg/kg]
2021-FI-02	13.09.2021	Clariant Produkte (Deutschland) GmbH	DODIFLOW® 5603	B10	3000
2021-FI-03	13.09.2021	Baker Hughes (Nederland) BV	P2R F2100	B10	2500
2021-FI-04	13.09.2021	Baker Hughes (Nederland) BV	Y15KT003	B10	1000

The products listed below were tested according to the no-harm test conditions introduced in 2019 with the CFPP performance criterion: Lowering of the CFPP by at least 5 °C compared to the non-additised reference (B100).

Reg. no.	Filed	Company	Brand name	Test level	Tested dosage rate [mg/kg]
2021-FI-01	05.02.2021	Scandinavian Oil Services AB	HYDRADD BIOFLOW	B10	2324
2020-FI-01	18.05.2020	CHIMEC S.p.A.	CHIMEC 6830	B10	2324
2020-FI-02	18.05.2020	CHIMEC S.p.A.	CHIMEC 6043	B10	4843