

CONTRÔLE PARTICULES FINES CATALYTIQUES

Kit de test de détermination de particules fines de catalyseur

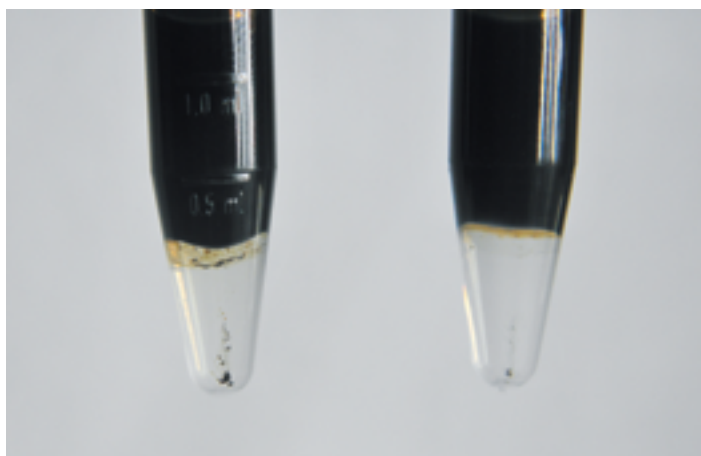
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L'action abrasive des particules fines de catalyseur peut réduire de façon significative la qualité du combustible de soute et entraîner l'usure très rapide des moteurs de navire.

Le nouvel appareil de test MT CAT FINES CHECK est spécifiquement conçu pour détecter la présence de particules abrasives dures dans le combustible en une procédure de test simple et rapide.

La méthode de test est basée sur l'analyse de deux échantillons de combustible lourd, autrement dit avant et après un séparateur. Cela permet d'évaluer la qualité générale du combustible de soute livré à bord et la qualité du combustible clarifié dans un séparateur.



AVANT SÉPARATEUR

APRÈS SÉPARATEUR

➤ CARACTÉRISTIQUES

- Plage de mesure : « go / no-go »
- Temps de mesure : env. 20 min

➤ AVANTAGES

- Méthode d'essai rapide et facile
- Applicable à tous types de combustibles lourds
- Résultats de test démonstratifs
- Facile à utiliser même pour le personnel non formé

▼ La procédure de test nécessite deux réactifs différents pour préparer les échantillons de combustible lourd pour analyse. Les échantillons préparés sont placés dans la centrifugeuse dans une position parallèle pour la période définie. Une fois les échantillons prélevés et prêts pour comparaison. Le degré de particules fines du catalyseur avant et après un séparateur est estimable directement.



Oil Kits Supply



MT CAT FINES CHECK

Cat Fines Determination Test Kit

INSTRUCTION MANUAL





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1. Introduction

Referring to the significant adverse impact of catalyst fines on the quality of heavy fuel oil and respectively operation of the machine engines, it is important to check regularly the degree of concentration of these harmful particles in HFO.

For this purpose, Martechnic® has developed the test kit MT CAT FINES CHECK which allows to estimate the level of cat fines in bunker fuel samples directly on-site.

The simple and quick test method helps to conduct trend monitoring and to assess the initial quality of the HFO delivered on board of a vessel as well as the quality of the same HFO purified in a separator. Thereby, the regular verification of the cat fines content provides the ongoing protection of the engine system.

2. Test Kit Components



Item. No	Description	Quantity
1	Test Kit, foam insert	1
2	Safety gloves (set of 5 pairs)	1
3	Safety glasses	1
4	Documentation Set	1
5/ 5a	Centrifuge/ cable	1
6	Solution A 250 ml	1
7	Solution W 100 ml	1
8	Plastic beaker 250 ml	1
9	Glass vials (set of 24 pieces)	24
10	Plastic microcentrifuge tubes (set of 48 pieces)	48
11	Pipette	1
12	Syringe 5 ml	2

3. Safety Advice

Before starting the test appropriate ventilation of the room has to be ensured. It is important to read and understand the Material Safety Data Sheets.

During the test procedure gloves and safety glasses have to be worn for protective reasons. If a solution spill occurs, it should be cleaned immediately with a cleaning cloth.



Caution: Live Components

Moving parts of a centrifuge in the test kit may cause injury through improper handling. Never put your hands into the centrifuge until it has come to a complete stop.

To ensure safe operation, the centrifuge should be always loaded in a balanced way with at least two plastic microcentrifuge tubes placed symmetrically. Never run the centrifuge with only one tube in it.

4. Sampling and Test Preparation

Representative heavy fuel oil samples are required for the analysis.

Note: To ensure significant results it is possible to get a sample with MARTECHNIC® sample equipment in a sample bottle during the normal operation.

As the content of particles is aimed to be determined before and after a separator, two samples have to be drawn.

This does not exclude other test options. For example, multiple HFO samples can be compared simultaneously or heavy fuel oils samples only after a separator can be used in order to assess the functioning of the cleaning system and the separator alone.

Important: Before each test the sample must be shaken thoroughly in order to ensure that all particles are homogenously spread in the oil.

4.1. HFO Sample Preparation

1. Draw 5 ml of the oil sample with the help of a syringe and fill it into the glass vial.



2. Draw 5 ml of Solution A with the help of a syringe and add it into the glass vial with the oil sample.



3. Close the glass vial with a plastic plug and mix thoroughly both liquids, i.e. the oil sample and Solution A, by shaking intensively for about 15 seconds.
4. Mark the glass vial in order to know which HFO sample is under inspection.
5. The same procedure should be repeated (steps 1-4) for the other oil sample.

4.2. Preparation of Microcentrifuge Tubes

1. Fill a plastic microcentrifuge tube with eight drops of Solution W using a pipette.



Add carefully 1 ml of the derived mixture of the oil sample and Solution A with the help of a syringe on the surface layer of Solution W in the microcentrifuge tube.



3. Avoid mixing of Solution W and the derived mixture.



4. Mark the microcentrifuge tube in order to know which HFO sample is under inspection.

5. The same procedure should be repeated (steps 1-4) for the other oil sample.

5. Testing HFO Samples in a Centrifuge

Place two plastic microcentrifuge tubes (or several if required for the analysis) symmetrically into the centrifuge. Additionally to the marking of the tubes, a position number inside the device (from 1 to 8) can be noted for a subsequent evaluation.



Turn on the device by pressing the power button. Close the lid of the centrifuge. Be careful as the rotor starts running automatically when closing the lid. Keep the device running for approximately 10 minutes. After the fixed time expires, press the tab on the front of the lid to open the centrifuge. The samples can be taken out for evaluation as soon as the rotor has come to a complete stop.

6. Test Results Evaluation

After the microcentrifuges tubes have been taken out, they should be placed in a well-lit spot in order to observe clearly the cat fines presence in the heavy fuel oil samples.

The degree of the cat fines in the oil samples before and after a separator can be visually compared and assessed.



before separator

after separator



7. Maintenance and Cleaning

Avoid liquid spillage as it may harm the device. It is recommended to remove dirt from the device using a damp cloth and a mild detergent (pH < 8). The device has to be dried thoroughly before using it for further tests.

The beaker, syringes and pipette should be cleaned and dried before preparing another oil sample. With regard to the syringes, it is also recommended to dispose of the first two 5 ml oil samples and to use the third one for the analysis.

8. Environmental Concern and Disposal Considerations

Martechnic® follows the principle of environmental responsibility and organizes its work on the basis of the environmental management system.

In the processes of elaboration, production and distribution of its products Martechnic® constantly strives to contribute to environmental protection by suggesting innovative solutions to its test equipment and reagents necessary for tests.

Two different reagents (Solution A and Solution W) required for conducting the MT CAT FINES CHECK are not classified as dangerous goods for transport, do not represent significant hazard to aquatic life and are biodegradable.

Due to the adherence to environmental policies, Martechnic® recommends to properly dispose of the used test equipment and reagents according to local regulations and products specifications.

More detailed information on the ecological aspects and disposal considerations can be found in the Material Safety Data Sheets.



9. Spare parts and Contact

Spare Part

Order Number

Solution A 250 ml	S 281
Solution W 100 ml	S 282
Glass vials (set of 24 pieces)	C 141
Plastic microcentrifuge tubes (set of 48 tubes)	C 282
Set: Solution A 250 ml, Solution W 100 ml, glass vials (set of 24 pieces), plastic microcentrifuge tubes (set of 48 tubes)	S 283



FUEL- LUBE-
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