

Customer Information

Version 2

Indistinguishable results with NANOCOLOR® COD tube tests

The MACHEREY-NAGEL COD test kits NANOCOLOR® COD HR 1500 and NANOCOLOR® COD LR 150 are EPA approved under 40 CFR Part 136. In course of this approval process, we have demonstrated the comparability between Method 8000 tests by HACH and Method 0-36 (COD LR 150) and Method 0-38 (COD HR 1500) by MACHEREY-NAGEL. The chemical oxygen demand (COD) is a method defined parameter. This means that performance is measured against already approved methods. Statistically indistinguishable results have been achieved.

Study design

During EPA approval, a study needs to be performed in which nine independent labs are analyzing nine different matrices, whereby each participating lab is assigned to one matrix. The measurements are performed in triplicates, which means the labs need to perform three measurements on three non-successive days. The samples are measured with HACH Method 8000 HR (high range) and LR (low range) test kits as well as with MACHEREY-NAGEL COD HR 1500 and COD LR 150 test kits. A complex statistical approach is used to prove indistinguishability.

Results

1. High range COD test kits.

Nine different labs have performed comparative measurements with nine different sample matrices. Test kits from HACH and MACHEREY-NAGEL were compared. The HACH and MACHEREY-NAGEL methods are statistically indistinguishable. The results are shown in Figure 1.

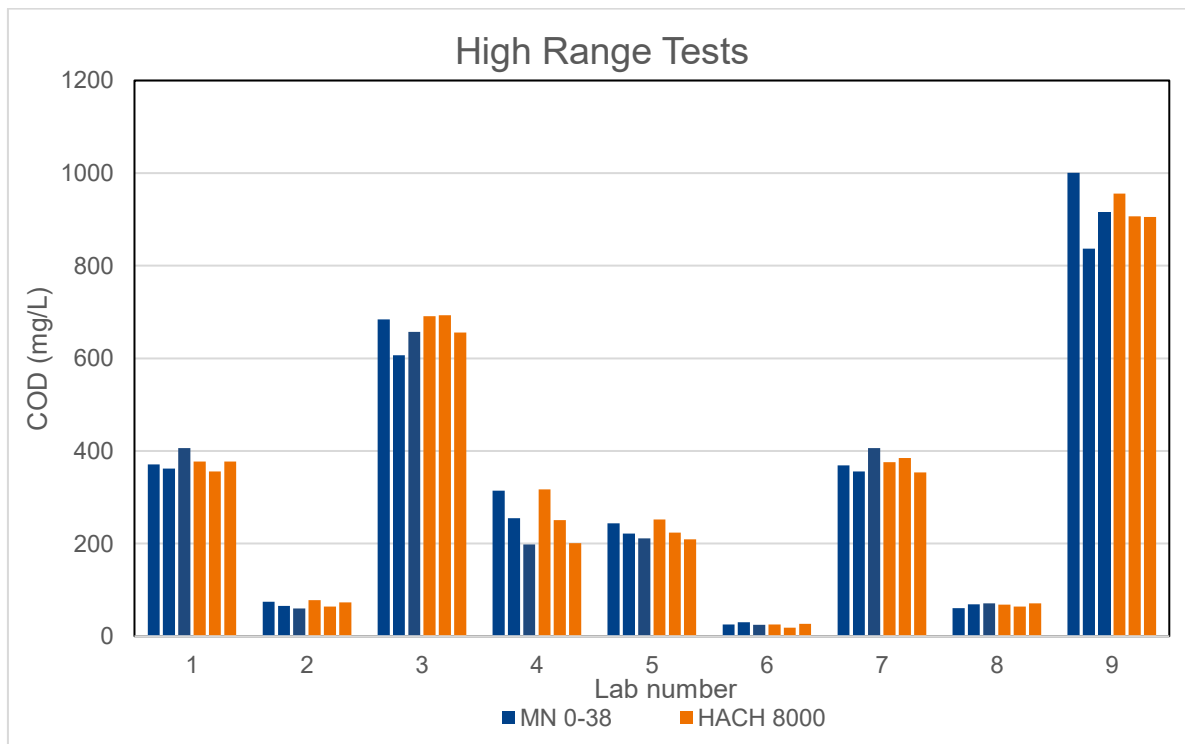


Figure 1: Comparison of COD measurements of nine independent labs. The Method 8000 HR test kits are compared with the MN NANOCOLOR® COD HR 1500 (0-38).

2. Low range COD test kits

Also for the COD low range test kits, nine independent labs have performed comparative measurements with nine different sample matrices. The HACH and MACHEREY-NAGEL methods are indistinguishable. The results are shown in Figure 2.

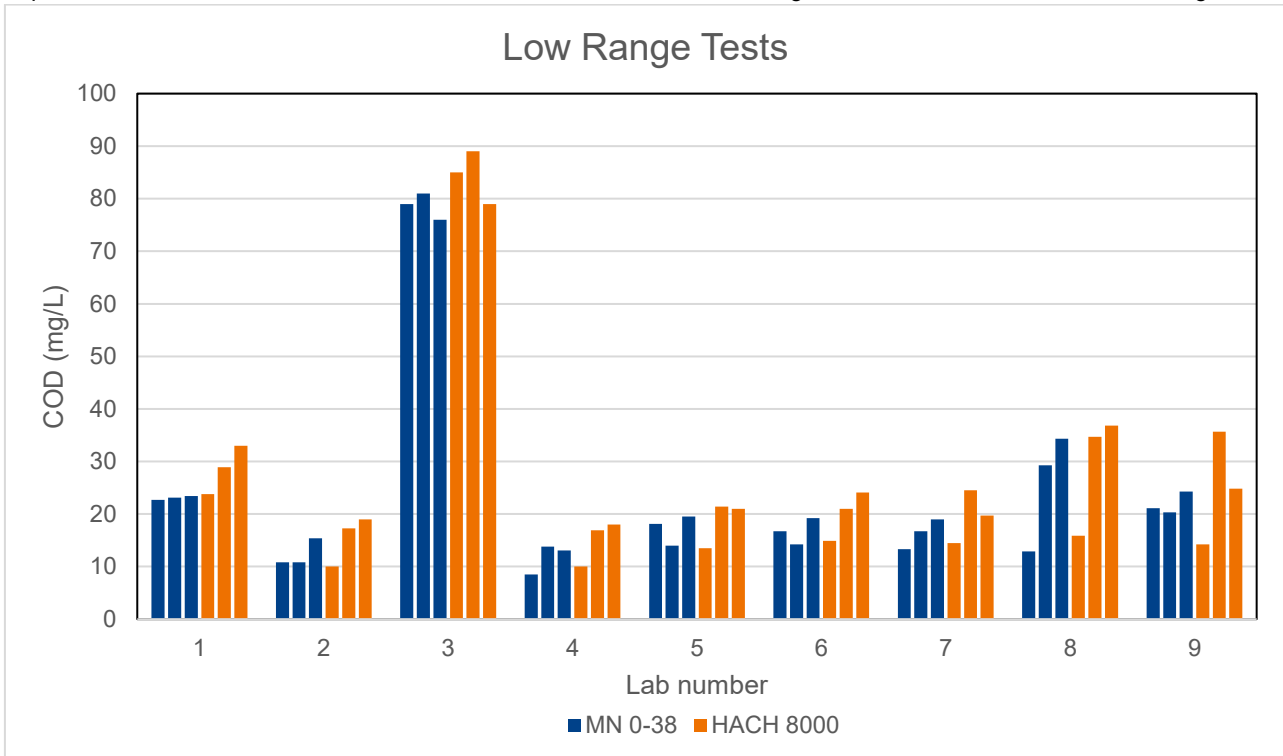


Figure 2: Comparison of COD measurements of nine independent labs. The Method 8000 LR test kits are compared with the MN NANOCOLOR® COD LR 150 (0-36).

Conclusion

The study showed the comparability between the Method 8000 tests by HACH and the Method 0-36 (COD LR 150) and Method 0-38 (COD HR 1500) by MACHEREY-NAGEL. The results are statistically indistinguishable. It was proven that the methods from MACHEREY-NAGEL were substantially similar to the methods already listed at 40 CRF Part 136 for measurement of COD in wastewater. Therefore, methods 0-36 and 0-38 are now also listed at 40 CRF Part 136.

Contact

If you have further questions, please do not hesitate to contact us:

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