

REACH:

Does COD have to be replaced?



Analytical Notice

COD: The most common parameter

Chemical Oxygen Demand (COD) is probably the most common and, therefore, the most important parameter to characterize organic content in water and waste water samples. Different international standards are defining the determination of COD (e.g. DIN38409-H41, ISO 6060:1989 and standard methods 5220B,C,D). In addition to these traditional lab methods, tube tests are generally accepted in COD analysis today because they simplify the determination procedure tremendously. The COD tube test method is also standardized (ISO 15705:2002). In laws and regulations, COD is defined as a control parameter. Concentration limits and targets for water treatment are defined according to the COD level.

REACH has implications

Since 2007, when the EU chemical regulation REACH came in to force, chemicals that are considered to be a high risk for humans or environment are classified as "substances of very high concern" (SVHC).

These SVHCs should be identified with the aim to control the risks of usage properly. Wherever it is economically and technically viable, they should be replaced.

Therefore SVHCs, having been examined by the European Chemicals Agency (ECHA), are included in the Annex XIV of REACH regulation. With the entry into Annex XIV, a sunset

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sunset date is fixed after which the substance will be forbidden to be used without a granted authorization. Obtaining such an authorization is a time and cost intensive process.

In the determination of COD, Potassium Dichromate is used. At this time, dichromates are not only listed as candidates for SVHCs, they are already included into Annex XIV. This means that, after the sunset date (in this case the 21st of September 2017), the usage of Potassium Dichromate will no longer be allowed without a granted authorization, unless there is an important exemption.

COD under discussion

It is not surprising, due to these circumstances, that discussions in technical committees took place as to whether the method of COD determination is still appropriate and should be continued. There are alternatives to determine the organic content, for example the TOC (total organic carbon). But the COD value provides information about the demand of oxygen that is needed to oxidize the organic content, which the TOC does not. This is why the COD and the TOC value are not comparable.

But these discussions caused uncertainty among distributors and users regarding the future of the COD measurement and whether it might cause issues if they continue to use potassium dichromate.



Scientific research and development as a way out

With respect to a potential need for a granted authorization, the user of COD tests can be reassured. In article 3 of REACH, an exemption from authorization was made if a SVHC from Annex XIV is used for scientific research and development (called SRD exemption) under certain controlled conditions (less than one tonne per year, person and application). The ECHA meanwhile confirmed in FAQ 585 (see ECHA web page)¹, that the SRD exemption also applies to substances from Annex XIV that are used in analytical activities such as monitoring or quality control under controlled conditions.

In addition, the question arises, whether the exemption also covers the life cycle steps such as formulation, filling and re-filling of SVHCs (so called "upstream use") or if here a granted authorization is mandatory. The latter would increase the costs of providing such a chemical considerably. Regarding this, the ECHA has now confirmed, in FAQ 1030, that the use of those substances upstream, preceding an exempted end-use, are also exempted in quantities of the substance ending up in the SRD use¹.

This means, for manufacturers and distributors of analytical tests: If a use of a SVHC complies with the framework conditions of the SRD exemption, the substance can be used in the future without the need to apply for a granted authorization. This means the substantial additional costs for the authorization procedure, that probably would have increased the purchase prices for affected tests, can be avoided.

¹ See <http://echa.europa.eu> under Support - Q&A - Search Q&As by using Q&A IDs 585 and 1030



COD tube tests, the ideal solution

The SRD exemption, therefore, allows the use of COD as a test parameter beyond 2017. Potassium Dichromate is, nevertheless, a substance of high concern. In order to achieve the objective to reduce the usage of this SVHC, the COD tube test method provides an excellent alternative to the classical lab method to determine COD:

- No exposure for the users because of closed tubes
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We are looking forward to hearing or reading from you.

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