FACTSHEET

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Biodegradability of surfactants in detergents

In the EU, strict requirements regulating the biodegradability of surfactants used in detergents were introduced over 20 years ago, with entry into force of Regulation (EC) 648/2004. Consequently, surfactants available on the EU market today already comply with the ultimate biodegradability standard, as defined under Annex III of Regulation (EC) 648/2004. In the meantime, Regulation (EU) 2026/405 of the European Parliament and of the Council of 11 February 2026 on detergents and surfactants, and repealing Regulation (EC) No 648/2004, aims to retain this high standard but opens new challenges that will need to be addressed.

Biodegradability testing methods today and tomorrow

Various test methods listed in Annex III of the consolidated version of Regulation (EC) 648/2004, which correspond to the OECD guidelines 301 A to F and 310, are commonly used today. This includes the CO2 headspace test (EN ISO Standard 14593: 1999) and ISO 10708:1997, which have been removed from Regulation (EU) 2026/405, which will enter into force on 22 March 2026, formally becoming part of EU law. Its provisions will, however, apply only from 23 September 2029, when the new obligations will then become mandatory for companies, market actors, and national authorities. Unfortunately, this amendment, together with other expected changes removing the explicit recognition of historical tests or literature data, opens up new challenges for manufacturers of surfactants who will need clarity on allowable test methods and access to the most suitable tools for determining biodegradability.

Recital 30 of Regulation (EC) 648/2004 allows for the waiver of additional biodegradability tests on surfactants when reliable and scientifically robust studies are available. But this allowance has also been removed from Regulation (EU) 2026/405, which poses a massive risk of redundant testing without added value. Therefore, CESIO has been calling on the Commission to clarify the allowable options to help ensure practical implementation and interpretation of future biodegradability testing options in the best way possible.

Since the appropriate method for ready biodegradability testing depends on the type of substance being tested, its physical properties, and characteristics such as solubility, volatility and sorption, it is appropriate and essential to retain the availability of the most relevant methods, including the CO2 head test EN ISO 14593:1999 and ISO 10708:1997 methods and recognition of historical tests or literature data, including read-across, in the planned revision of Regulation (EC) 648/2004.

Reference testing methods

The CO2 headspace test (EN ISO 14593 or OECD 310) is currently defined as the reference method for laboratory testing in the existing regulation (EC) 648/2004 (see Annex III), but it has been removed from Regulation (EU) 2026/405. Although it is sensible to remove it as a the reference method of choice, as this specific method was developed by OECD for volatile substances only, it is

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still appropriate to consider it among the full range of methods for biodegradability testing listed in Annex I as potential references due to the diverse chemical properties of surfactants requiring a diverse selection of methods suitable for each of the different surfactant types.

Regulation (EC) EC 648/2004 requires market surveillance authorities to use a reference testing method to reassess the biodegradability of surfactants in case of litigation or concern about validity of existing data. Regulation (EU) 2026/405 maintains this approach, leaving the choice of the most appropriate method to those methods listed in the new Annex I (according to Article 22.2). However, the necessity of an annex restricting testing to these reference testing methods remains unclear. As suggested previously, additional methods and approaches not listed in the Annex are also needed due to the diverse nature of surfactants and suitability of different available methods. Such methods should include ISO Standard 14593: 1999, ISO 10708:1997, and EN ISO 11733 amongst the methods.

In conclusion, there is an urgent need to update and consolidate the set of testing methods in the revised Regulation (EU) 2026/405 to reflect the state of surfactant science and the diversity of reliable methods available. Streamlining towards the full range of methods given in the annex for biodegradability testing (Annex III of Regulation (EC) 648/2004, Annex I in Regulation (EU) 2026/405) appears both reasonable and efficient. In principle, each method therein can be useful and justified as a reference depending on the specific chemistry involved (see above).

Availability of the test reports

Regulation (EU) 2026/405 also introduces a new requirement that manufacturers of surfactants and detergents shall draw up a technical documentation. Among other requirements, test reports demonstrating the compliance with the biodegradability requirements shall be provided in the technical documentation without distinction between surfactants and detergents. The criteria on biodegradability only apply to surfactants and the surfactant manufacturers are owners of the studies. Given that the test reports are proprietary, confidential business information, they cannot be made available to all economic operators but could be provided directly to the authorities when asked. Only the test results and methods are shared with the economic operators. The planned revision needs to be updated to reflect the respective information setup.

Conclusion

There is a need to provide clarity on allowable test methods in Regulation (EU) 2026/405 and to expand access where appropriate to further suitable tools for determining biodegradability as part of implementation. This should include reintegration of the CO2 head test EN ISO 14593:1999 and ISO 10708:1997 methods as a suitable options and recognition of historical tests or literature data, including read-across, for biodegradability assessment, as well as retaining access to the full range of testing options for market surveillance. Any clarifications should be provided in a future Commission Q&A or guidance, such as is done under question 3.3 of the current Commission Q&A document for Read-Across. Such actions would help to give needed legal clarity to the manufacturers of surfactants as indispensable ingredients in a range of detergents products. If it is not possible to reintroduce the two aforementioned ISO methods, then it should at least be possible after entry into force of the new regulation - at a minimum - to use historical data from studies using these test methods.

For further information and comments on CESIO's views concerning the new Detergent's Regulation, please see position "CESIO recommends Q&A on the revised detergent regulation clarifying key points", available here on our website.