Beyond Surfactants

From Bio-Based Innovation to Proven Environmental Breakdown

Sam Deconinck

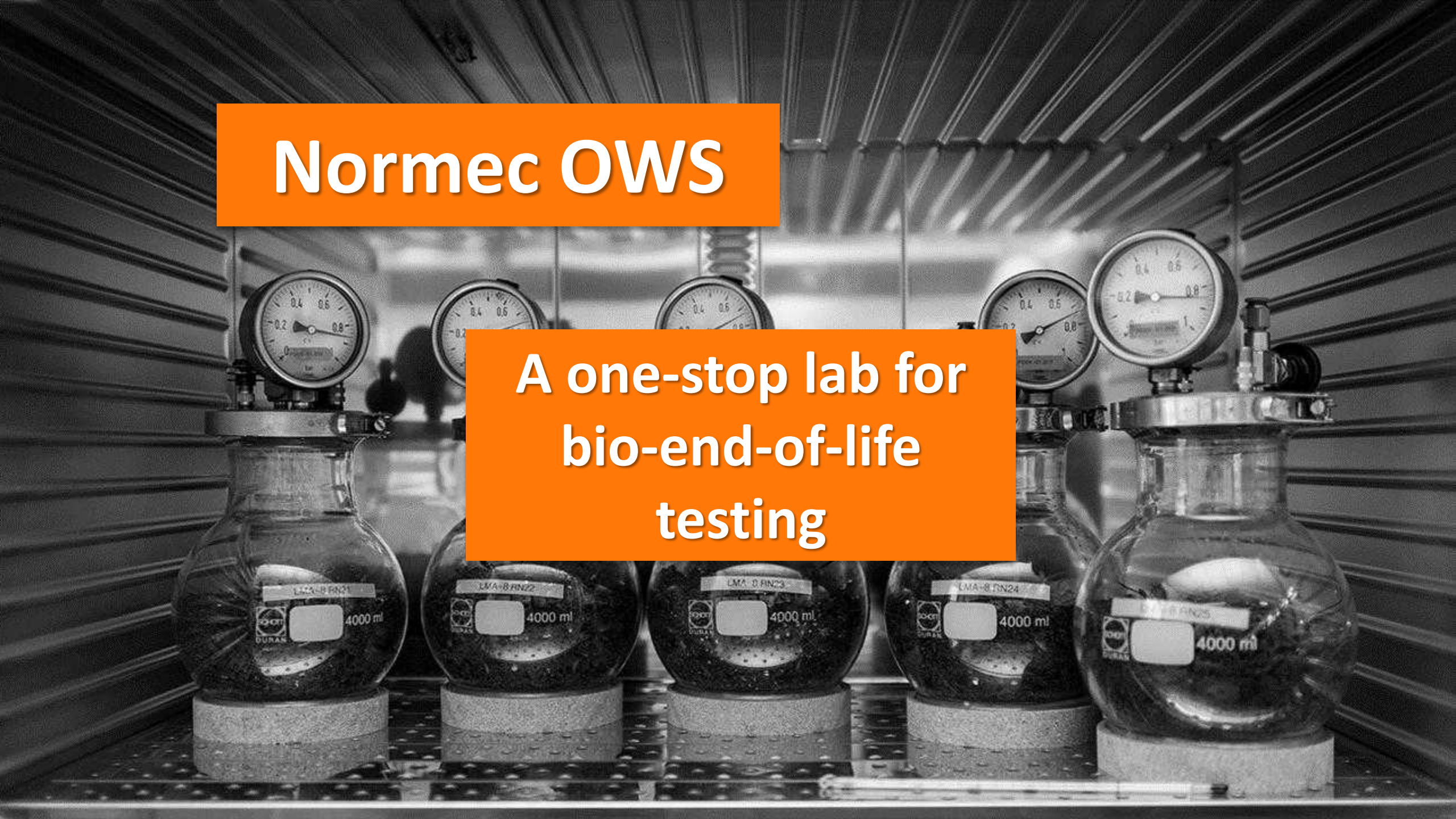
New Business Development Director

Normec OWS

12.11.2026

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A one-stop lab for bio-end-of-life testing

More than **35 years** of experience

Over 60 **dedicated experts**

Strictly independent
No conflict of interest

Member of several **standardization** agencies

Actively participating in industry initiatives, European subsidy projects & conferences

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Formerly linked to **Dranco**
Spin-off UGent

15.000+ samples tested for **1.500+** customers

World's biggest capacity of **3.500 test reactors** = short lead time

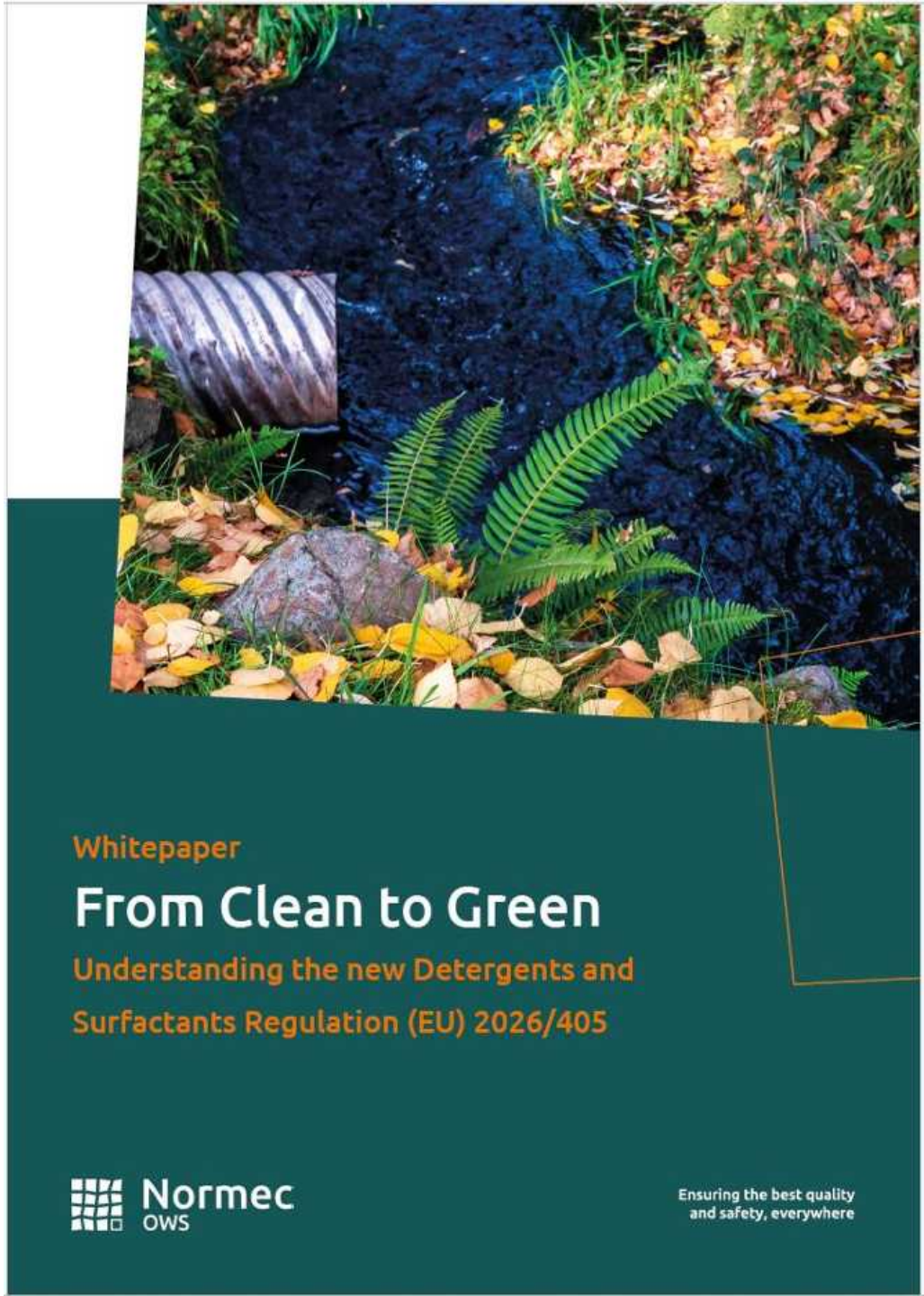
Recognised by major **certification bodies**

Operating from **Two Labs:** Europe & the US to support Customers **Worldwide**

The EU Detergents Regulation

The central message

- Replacing Regulation (EC) No 648/2004
- Push more sustainable product formulation
- Phosphorus limits remain
- **Biodegradability** requirements expand **beyond** surfactants, via future delegated acts



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Expanding biodegradability scope

Phased approach

Ingredient group	Regulatory direction
Phase 1: Surfactants	Existing biodegradability requirements **on individual surfactant level** continue/strengthen
Phase 2: Films and polymers in films (incl. water-soluble films)	New criteria and methods by 23 March 2029
Phase 3: Other organic substances	Criteria for intentionally added substances at **≥ 10% w/w**, excluding water

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Biodegradation

What is it not?

- Fragmentation
- Solubility
- Mw reduction
- Etc.



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Biodegradation

What is it?

- Biochemical pathway of biodegradation:

$$C_{surfactant} + O_2 \Rightarrow CO_2 + H_2O + C_{residual} + C_{biomass}$$

Intermediate degradation products

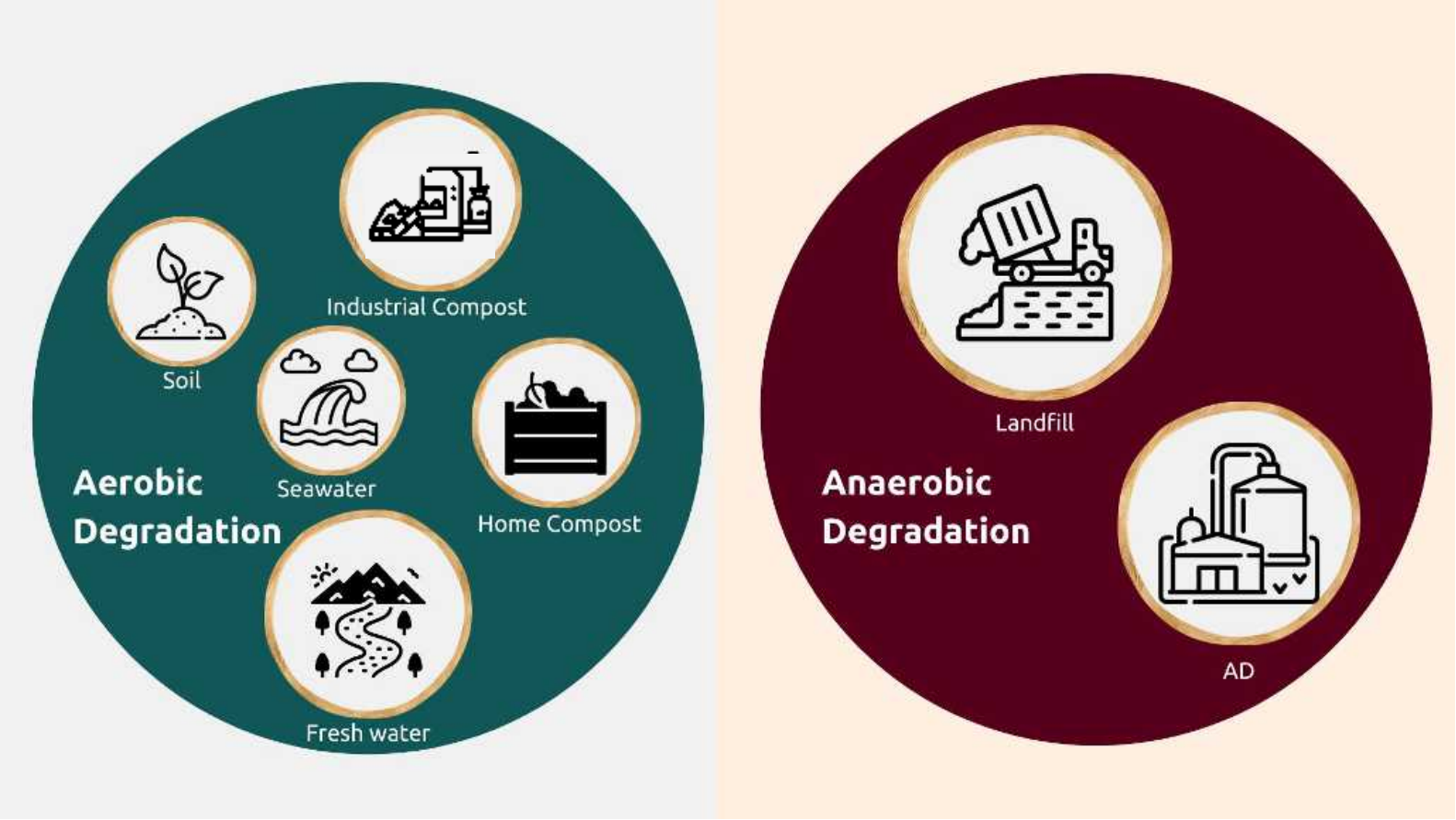
Biomass growth

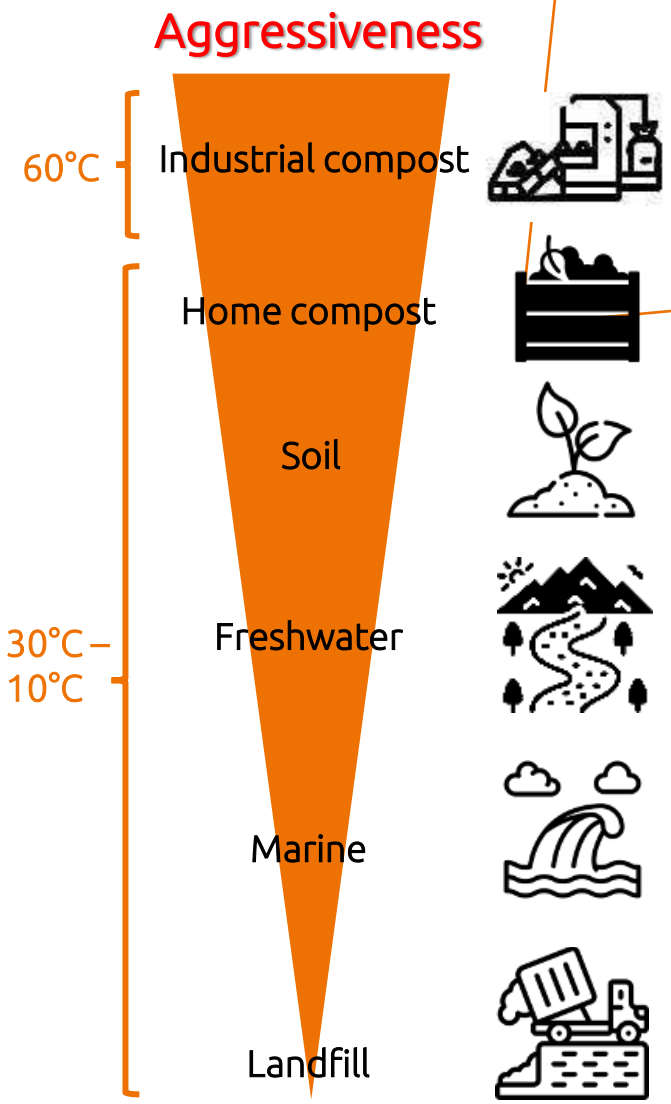
- **Not all $C_{surfactant}$ "instantly" converted to CO_2!**

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Biodegradation

Process depends on environment





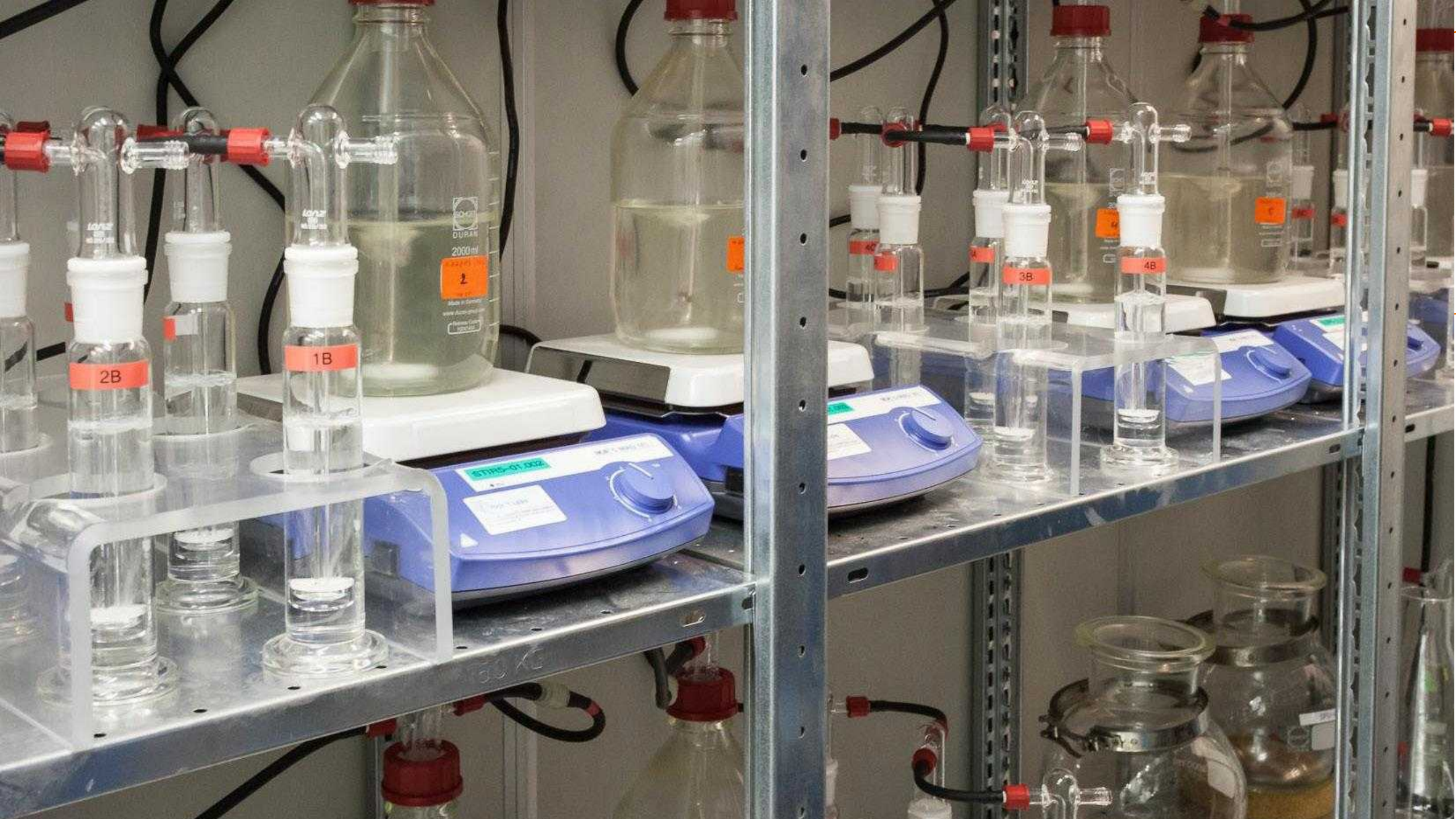
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Phase 1: Surfactants

Article 4 and Annex I, Part A

Part A Compliance as of **23 September 2029**	**Surfactants and surfactants contained in detergents[3]** **≥ 60%** biodegradation in 28 days **OECD 301B** (CO_2 evolution) **OECD 301C** (M.I.T.I.) **OECD 301D** (Closed bottle) **OECD 301F** (Manometric respirometry) **≥ 70%** biodegradation in 28 days **OECD 301A** (DOC die-away) **OECD 301E** (Modified OECD screening) No pre-adaptation · No 10-day window · Accredited or GLP labs	
Part B	Films and polymers within films	Criteria to follow
Part C	Other organic substances	Criteria to follow
Part D	Derogations for specific organic substances	Criteria to follow

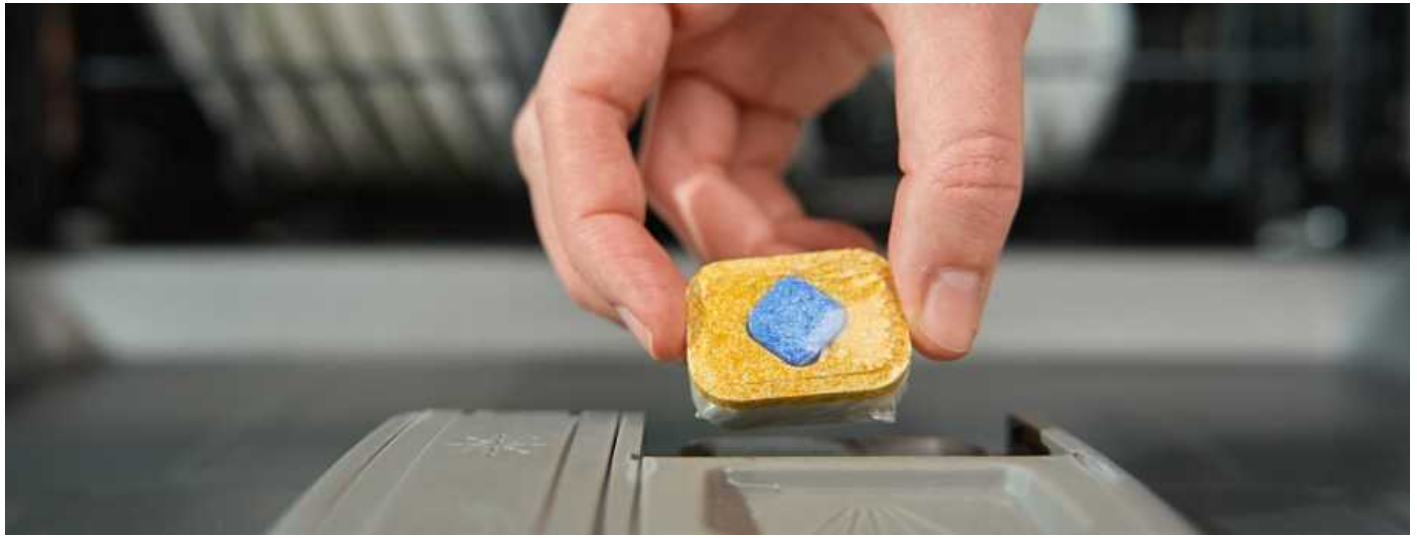
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2B
1B
3B
4B
DURAN
2000ml

Phase 2: Water-soluble films and polymers

The first new biodegradability criteria

- Water-soluble films used as detergent capsules and their polymers
- The Commission must set criteria and test methods by 2029
- Compliance follows by 2032
- Final pass levels and methods remain to be defined



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Phase 3: Other organic substances

Criteria for major organic ingredients

- Intentionally added organic substances at ≥10% w/w, excluding water
- The Commission must set criteria and test methods by 2031
- Compliance follows by 2034
- Final pass levels and methods remain to be defined

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Regulatory timeline

First milestones & outlook

23 MARCH 2029

Criteria set for films

The Commission shall adopt delegated acts setting out biodegradability criteria and test methods for films and polymers within films.

Article 4(3) - Part B of Annex I

23 SEPTEMBER 2029

Surfactants must comply

Surfactants and surfactants contained in detergents shall comply with the biodegradability requirements of Part A of Annex I, unless they are exempted under Article 4(2) as active substance or disinfectant.

Article 4(1) - Part A of Annex I, Article 4(2)

23 MARCH 2031

Criteria set for other organic substances

The Commission shall adopt delegated acts setting out biodegradability criteria and test methods for organic substances (≥10% w/w, excl. water) in detergents, other than surfactants, films and polymers within films.

Article 4(4) - Part C of Annex I

23 MARCH 2032

Films must comply

Films or polymers within films shall comply with the biodegradability requirements set out in Part B of Annex I.

Article 4(3) - Part B of Annex I

23 MARCH 2033

Review report on regulation application

The Commission shall submit a report on the application of the Regulation to the European Parliament and to the Council. The report shall contain an assessment on (i) how the Regulation is achieving its objectives, (ii) the feasibility of introducing biodegradation criteria for organic substances < 10% w/w, excl. water, and (iii) the possibility to further limit the phosphorus content, or to add phosphorus limits for other product categories in Annex III, with a view to examining the feasibility of phasing out phosphorus.

Article 34

23 MARCH 2034

Other organic substances must comply

Organic substances (≥10% w/w, excl. water) in detergents, other than surfactants, films and polymers within films, shall comply with the biodegradability criteria set out in Part C of Annex I, unless a derogation is granted in Part D of that Annex.

Article 4(4) - Part C of Annex I and Part D of Annex I

2029 is just around the corner

Key actions

01

Map products, **formulations** and ingredients against the regulation's scope

02

Collect structured **supplier data** and supporting test reports

03

Verify surfactant biodegradability against Annex I, Part A

04

Calculate total phosphorus per relevant consumer dose

05

Identify **films, film polymers and organic substances at ≥10% w/w**, excluding water

06

Check that historical data match the required methods and conditions

07

Substantiate biodegradability claims with the underlying evidence

08

Evaluate alternative ingredients and formulations early

09

Prepare before the delegated acts finalise the detailed requirements

10

Review compliance periodically as products and requirements change

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Evaluating biodegradation data

Four checks before interpreting a percentage

01 Claim and method

Verify the receiving **environment**. Match the test **method** and the applicable pass/fail requirements to the intended claim.

02 Complete reporting

Confirm material identity and physical form, **test conditions**, duration, analytical endpoint and biodegradation curves.

03 Valid test system

Check **positive-reference** performance and **replicate variability** against the criteria of the method used.

04 Representative conditions

Review inoculum source, **pre-exposure and sample preparation**. Confirm that any treatment is documented and permitted.

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How Normec OWS can assist

A testing strategy matched to the ingredient



Product Planning
Review composition, expected biodegradation behavior & available data



Product Development
Screening tests

- High-Throughput Pre-Screening Biodegradability Testing
- Microplastics Testing



Product Launch
Laboratory tests

Understand your product
& environmental impact

Market communication
Ensure compliance to regulation(s)

Certification
Market Recognition

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Let's do this…
TOGETHER!

Questions?

Contact us!

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