

MARITIME ENVIRONMENTAL PROTECTION WEBINAR WEEK

WEBINAR

TUESDAY 28 OCTOBER

09:00-10:00 GMT

Reducing marine plastic litter from ships

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**MARITIME
ENVIRONMENTAL
PROTECTION**

PANELLISTS



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Global Marine Services Manager

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Reducing Marine Plastic Litter from ships

Dr Guillaume Drillet
Riviera Webinar / 28 October 2025

MARINE PLASTICS ROUNDTABLE, DECEMBER 2018



- A roundtable event was hosted in partnership with CEFAS, in Singapore on 5 December 2018.
- Representatives from academia, government agencies, consultancy, shipping and certification bodies.
- Aiming to gain an industry wide perspective on the role of maritime activities (primarily shipping) in managing marine plastic pollution.



www.imarest.org

■ MARPOL Annex V defines what is “Plastic”

- means a solid material which contains as an essential ingredient one or more high molecular mass polymers and which is formed (shaped) during either manufacture of the polymer or the fabrication into a finished product by heat and/or pressure. Plastics have material properties ranging from hard and brittle to soft and elastic. For the purposes of this annex, "all plastics" means all garbage that consists of or includes plastic in any form, including synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products.

■ Port Reception facilities are often pointed out as a limiting factor (not available or not communicated in GISIS)

■ A low hanging fruit was targeted during the roundtable

- **Drinking water bottles**
- Easy for ship management / owners to tackle but some limitations due to:
 - Crew does not like tap water due to cultural habits
 - Limited trust in water quality from tap because many flag States have not developed prescriptive rules for independent sampling and analysis of drinking water (WHO Guide to Ship sanitation suggest that this should be done by accredited laboratories).



Is Bottled Water Worth Your Money? | Talking Point | Full Episode

[Channel New Asia \(Singapore\)](#)



SGS long experience and expertise in marine litter / waste characterisation and microplastic testing



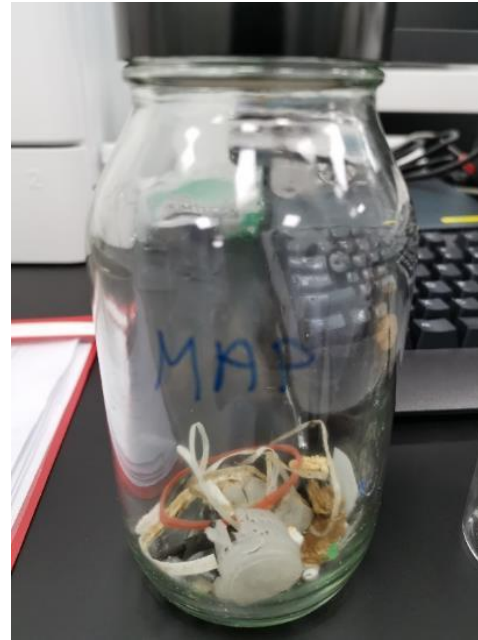
- World leading Testing Inspection and certification company (TIC)
- >100,000 employees, 2600 laboratories and offices in >100 countries,



Sampling – field
surveys



Marine litter
characterization testing



Macroplastic
testing (>5mm)



Large microplastics
testing (500µm-5mm)



Microplastics testing
(<500µm)

ISO 17025 – Competency & Quality

- While many can “test” for microplastics, standards are only developing now (ISO, ASTM...) and therefore one must define what to test for...
- Accreditation is key for ensuring reliability in results

SINGAPORE LABORATORY
ACCREDITATION SCHEME



Schedule

Certificate No. : LA-1999-0164-F
Issue No. : 26
Date : 31 August 2022
Page : 1 of 15

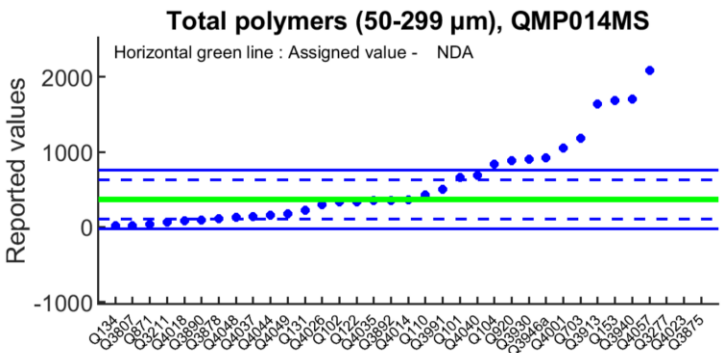
SGS Testing & Control Services Singapore Pte Ltd
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#03-01
Singapore 609957

FIELD OF TESTING : Environmental Testing

Certificate No. : LA-1999-0164-F Issue No. : 26
Date : 31 August 2022 Page : 14 of 15

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT
L Microplastics - Water - Sand	8. Determination of Carbon Monoxide (CO) from Stationary Sources (Instrument Analyzer)	USEPA Method 10: 2017
	1. Sampling for Microplastics Analysis	In house method PR-(SG)-[I&E]-[EHS]-MIC-001 Rev01 : 2022
	2. Analysis of Microplastics	In house method PR-(SG)-[I&E]-[MTL]-STM(C)-033 Rev00 : 2022

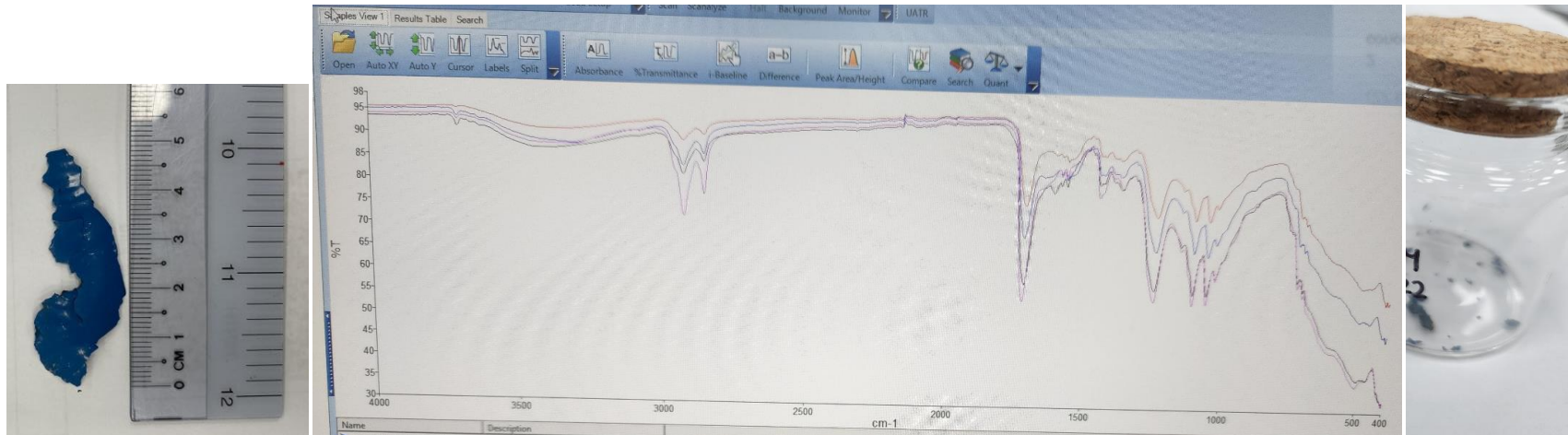
- Sampling generates the highest source of uncertainty



We monitor microplastics that are released from Anti-Fouling System (AFS) during in water cleaning...



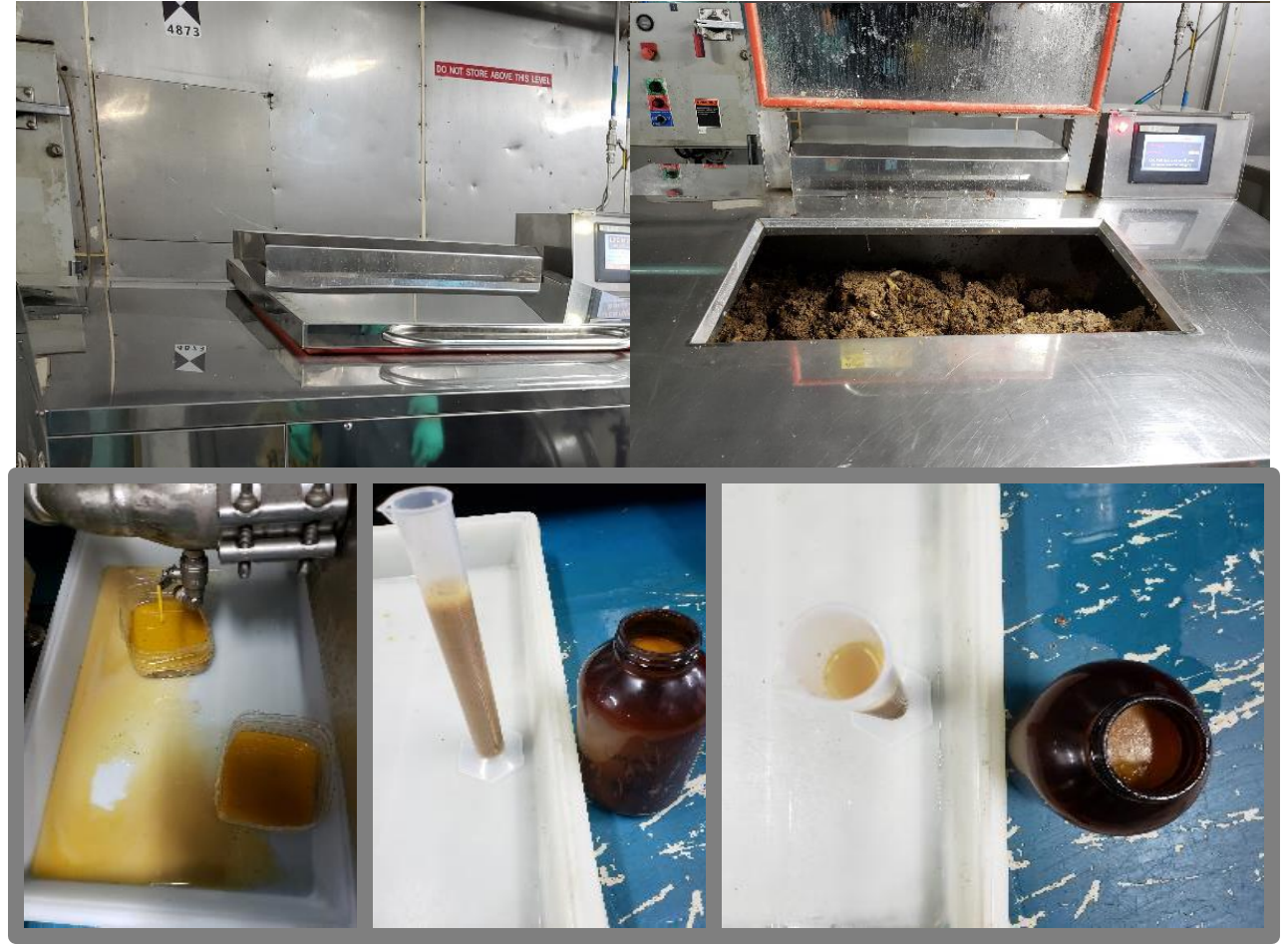
- AFS Convention (Article 5) only requires the management waste material from banned AFS. The release of microplastics from coatings is not regulated
- Biofouling Guidelines (2023) includes microplastics in the definition of “waste substance”. T
- The IWC guidance (2025) requires that microplastics pollutions should be evaluated



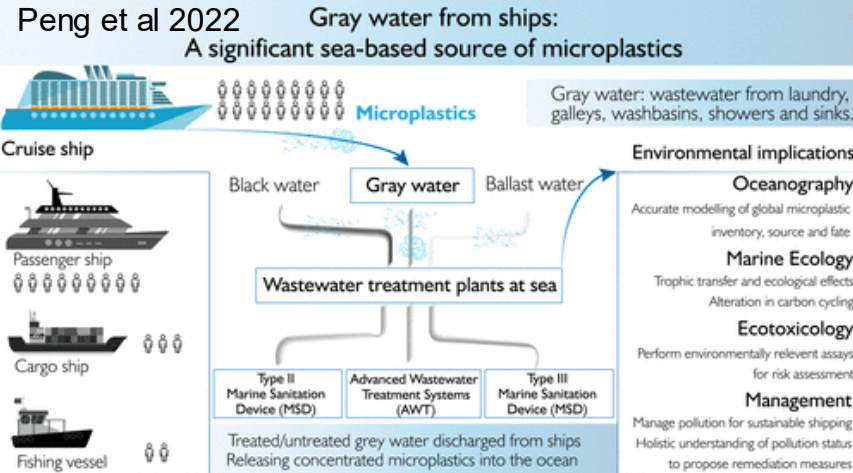
We monitor microplastics which may be found in discharges from food digesters...



- Under MARPOL Annex V, food wastes can be discharged at sea if they have:
 - Been comminuted or grounded and are capable of passing through a screen with openings no greater than 25 mm (min 3nm from the nearest land)
 - NOT been comminuted or grounded (min 12 nm from the nearest land)



We monitor microplastics in grey water...



Government of Canada / Gouvernement du Canada

Search Canada.ca

Franglais

MENU

Canada.ca > Innovation, Science and Economic Development Canada > Programs > Innovative Solutions Canada

Plastics challenge: Filtration of microplastics in ship greywater

From: [Innovation, Science and Economic Development Canada](#)

Transport Canada is seeking a wastewater treatment system that can capture and extract microplastics in quantifiable amounts from ship's greywater prior to discharge.

Challenge Sponsor: Transport Canada (TC)

Funding Mechanism: Grant

Opening date: April 15, 2020

Closing date: June 10, 2020, 14:00 Eastern Daylight Time

Prospective applicants should refer to the Innovative Solutions Canada Grant Instructions and Procedures [document](#).

- Grey water is not regulated under MARPOL Annex IV
- 100,000 tons of microplastics may be released annually from ships...
- Only a few other parameters are monitored under the vessel General permit (VGP from US – EPA)



Thank you!

Do you have any questions?

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Policy Adviser

Flemish Waste Agency (OVAM)

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The collection of waste from ships

Peter Van den dries

Policy Advisor

Flemish Waste Agency (OVAM)

Why is proper ship waste management important?

1. It is a legal requirement:

- MARPOL: ensure the provision of adequate Port Reception Facilities
- Regional, national and/or port regulations

2. Because (illegal) discharges at sea of ship's waste have serious environmental impacts:

- GESAMP WG 43: ship's garbage is a relevant source of marine litter

3. Because economic growth should not lead to higher environmental impact:

- sustainable port = efficient port
- “greening” of the maritime industry → sustainability = new competitive advantage for ports

4. Because it is an important step in the transition towards a circular economy

- ship's waste is a potential resource of raw materials

PLASTICS IN THE MARINE ENVIRONMENT: WHERE DO THEY COME FROM? WHERE DO THEY GO?

eunomia 



Ensuring the availability of adequate PRF

What is a PRF?

- any facility which is fixed, floating or mobile and capable of providing the service of receiving waste from ships
- can be mobile (barge/truck) or fixed facility → both have their pros and cons

What is “adequate”?

- without causing undue delay for the ships
- meeting the needs of the ships using the PRF
- no “unreasonable cost”

MAC² Antwerp (Belgium)





Kayak Maritime Services, Antwerp (Belgium)



Bek & Verburg, Rotterdam (the Netherlands)



Port of Bari (Italy)



Port of Ostend (Belgium)

PRF in fishing ports



PRF in marinas



Elements supporting ship waste delivery/collection

- Advance waste notification scheme:
 - indication of need for PRF
 - planning waste collection
- Indirect fee system:
 - facilitates “polluter pays” principle
 - takes away economic advantage of illegal discharge at sea
 - financial resources for providing & improving adequacy of PRF
- Port waste information and monitoring system:
 - electronic exchange of information: reducing administrative burden
 - can be used by all stakeholders
- Stakeholder consultation
- Port waste management plan:
 - positive impact on availability, adequacy and use of PRF
 - <https://www.imo.org/en/OurWork/PartnershipsProjects/Pages/GloLitter-Partnerships-Project.aspx>

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Senior Technology Analyst
IDTechEx

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Microplastics and Evolving Regulations

Shababa Selim – Senior Technology Analyst, IDTechEx

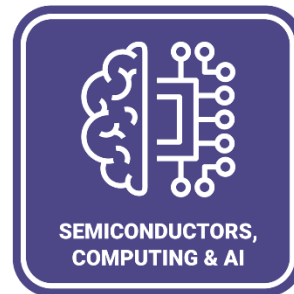
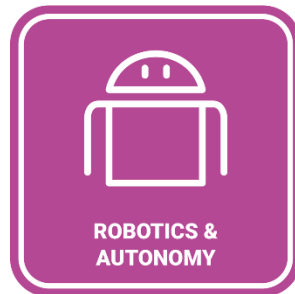
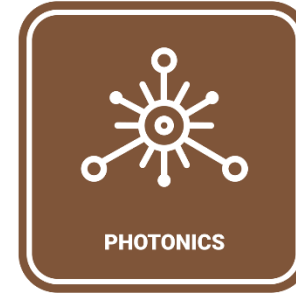
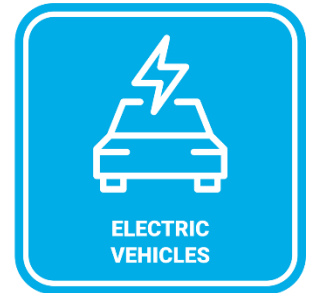
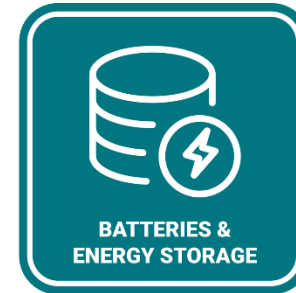
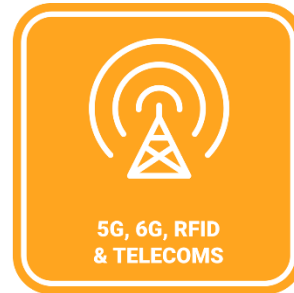
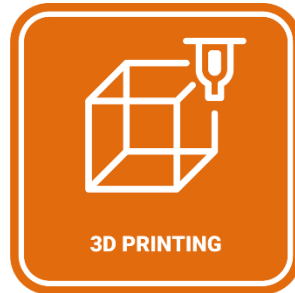


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IDTechEx provides clarity on technology innovation

Since 1999 IDTechEx has provided independent market research, consultancy and subscriptions on emerging technology to clients in over 80 countries.

- Technology assessment
- Technology scouting
- Company profiling
- Market sizing
- Market forecasts
- Strategic advice



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What are microplastics?

Microplastics are solid plastic particles that typically have a diameter of less than 5 millimeters and are considered an emerging pollutant.

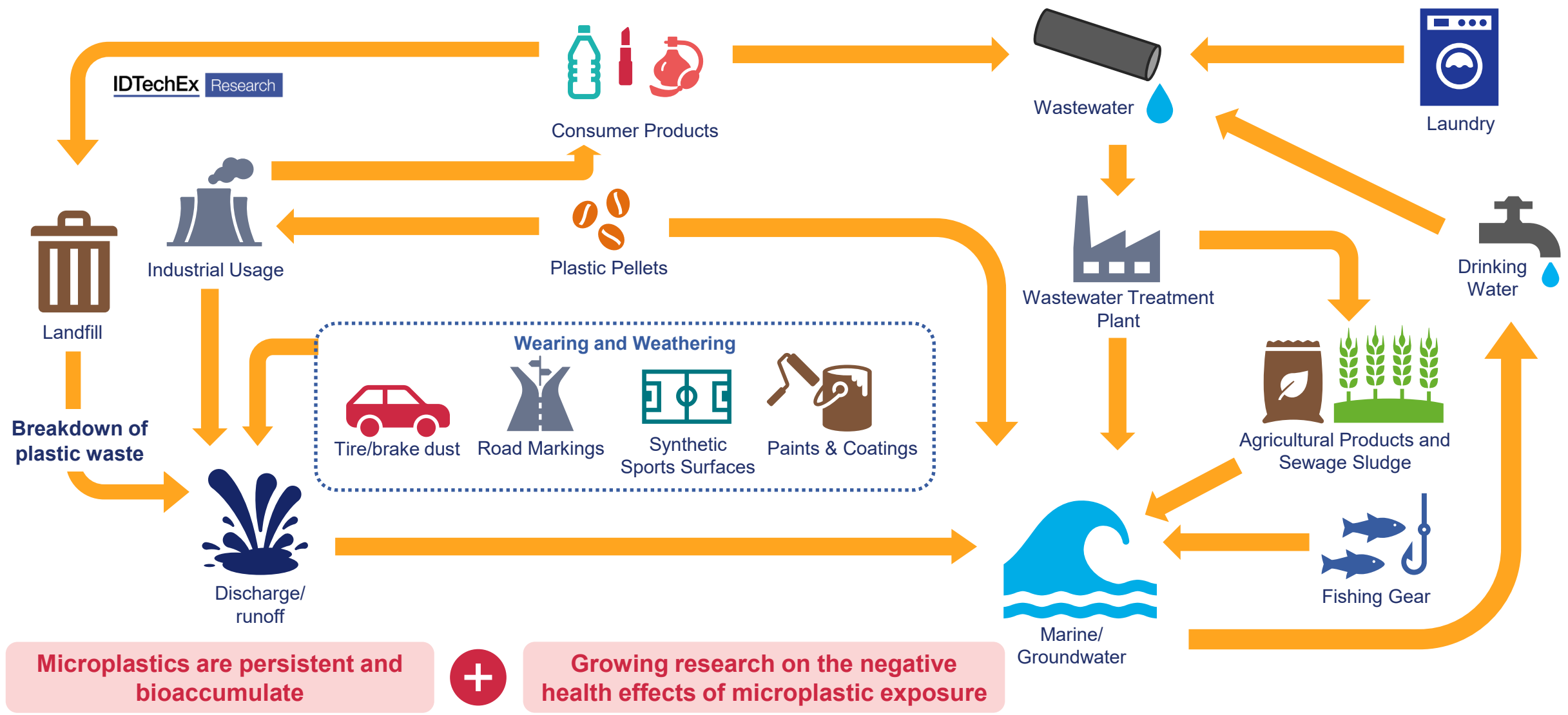
Primary Microplastics

Purposefully manufactured as microplastics and often intentionally used as additives

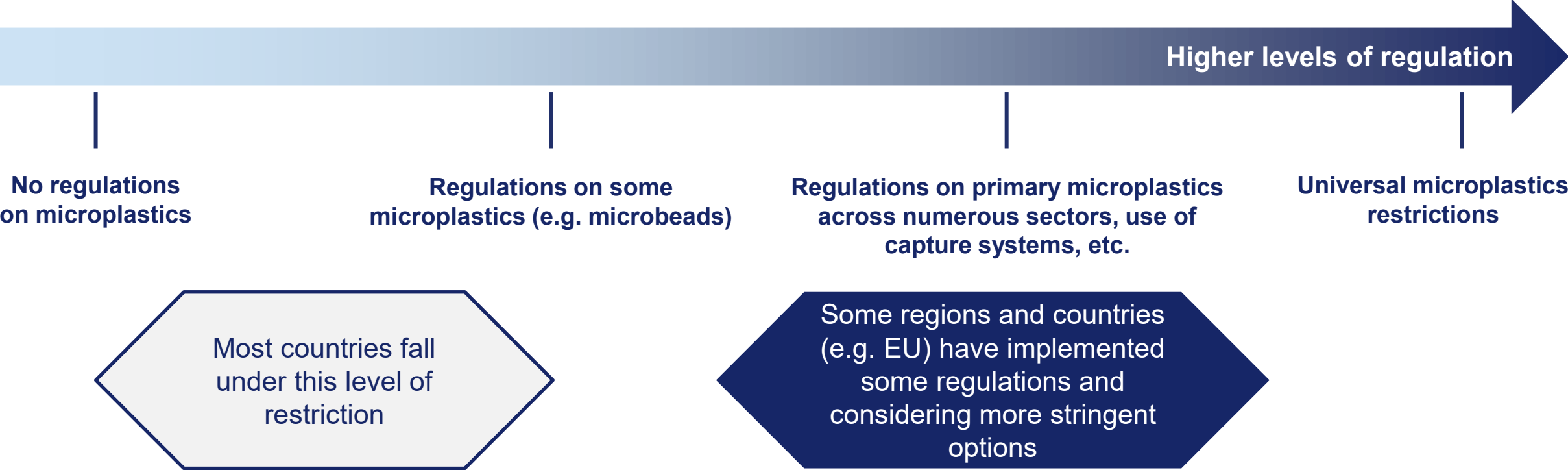
Secondary Microplastics

Breakdown of larger plastic items into smaller fragments once exposed to the environment

Growing concerns about the negative impact of microplastics



A spectrum of microplastics regulations



EU: Examples of key current and proposed regulations

IDTechEx Research

EU



- (EU) 2023/2055 - REACH restriction on intentionally added microplastics.
- **Drinking Water Directive: (EU) 2020/2184**
- Several regulations on **eco-design requirements** and **eco-labelling criteria** tackling microplastics released during the product lifecycle.
- (EU) 2024/1257 (Euro 7)
- **Regulation to prevent plastic pellet losses** (*under development*).

Plastic pellets are starting materials for plastic production worldwide, which typically come in different forms, such as pellets, flakes, powders, etc.

- **Small in size, highly mobile**
- **~52,000 - 184,000 tonnes*** lost to environment every year

Proposal seeks to:

- Provide measures to prevent, contain, and cleanup plastic pellet pollution
- Set requirements for handling pellets by economic operators, and EU and non-EU carriers at all stages of the supply chain

Current status: Endorsed by European Council and Parliament. Awaiting reviews and formal adoption.

**source: European Commission*

Global: Summary of key current and proposed regulations



IDTechEx Research

Global

- Several countries have a **ban on microbeads** in consumer rinse-off products.
- **Internationally binding treaty on plastic pollution** with restrictions on microbeads in rinse-off cosmetics and personal care products (*under development*)
- **UN Regulation No. 117** – incorporation of tire abrasion limits (*under development*)
- **ECE/TRANS/180 addendum 24** – adopted methodology to measure particulate emissions from braking systems of light-duty vehicles to translate to setting emission limits.

Potential impacts:

- Global limits on plastic production
- Promotion of reduction, circularity, repurposing, and refurbishment
- Minimum recycled plastic content in products
- Extended Producer Responsibility
- Product labelling and disclosures

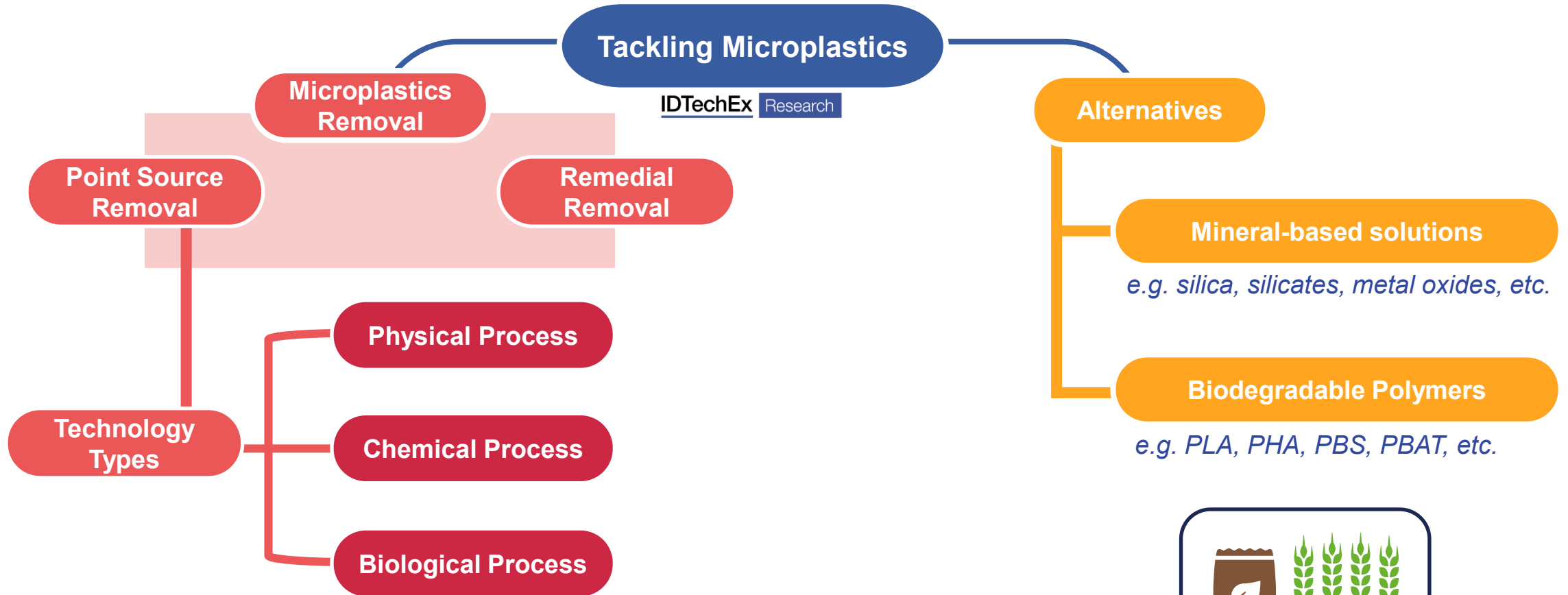
Current status: Under negotiations

Expected: 2026 or later?



For more information on regulatory landscape, see **IDTechEx.com/Microplastics**

Emerging pathways to tackle microplastics



For in-depth analysis of microplastics removal technologies and biodegradable alternatives, see [IDTechEx.com/Microplastics](https://www.IDTechEx.com/Microplastics)

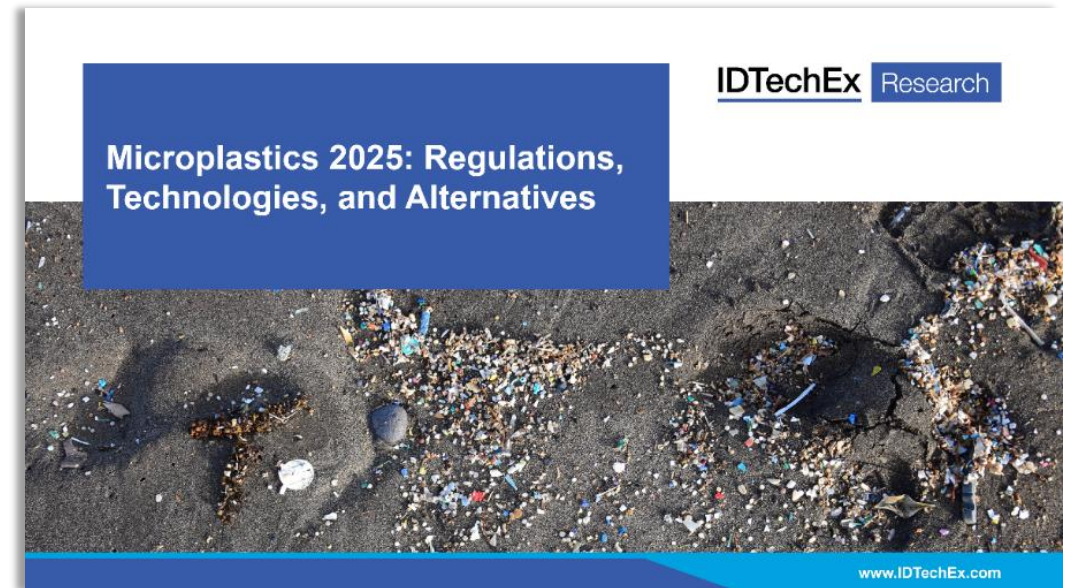


For more information on microplastics

Microplastics 2025: Regulations, Technologies, and Alternatives

www.IDTechEx.com/Microplastics

Sample pages are available for all IDTechEx reports



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Marine Plastic Litter

Sofia Pantazopoulou
October 28, 2025

Introduction: Marine Plastic Litter



Adverse Effects of Marine Plastic Litter

- Environmental and health problems
- Navigational hazards for shipping
- Massive accumulation of plastics
- Harm to marine life



United Nations Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

IMO Regulatory Landscape

1975

London Convention and
London Protocol 1996

1988

MARPOL Annex V

2018

Action Plan to Address
Marine Plastic Litter
from Ships

2025

IMO Resolutions and
Circulars

London Convention and London Protocol 1996



London Convention

Regulates deliberate disposal of wastes at sea. Uses a "blacklist" approach with prohibited materials in Annex I and special permit materials in Annex II.



London Protocol

Imposes a near-total ban on dumping wastes at sea. Uses a "reverse list", with only eight categories of waste that may be permitted for dumping after assessment.

MARPOL Annex V

Discharge of all plastics into the sea is prohibited.



Placards



Garbage Management Plans and Garbage Record-Keeping



Reception Facilities



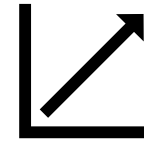
Action plan to Address Marine Plastic Litter from Ships

Outcomes from MEPC 83 (April 2025)



Reduce

- ✓ Marine plastic litter (from fishing vessels)
- ✓ Shipping's contribution to marine plastic litter



Increase

- ✓ Effectiveness of port reception facilities and treatment
- ✓ Public awareness, education and seafarer training
- ✓ Understanding of the contribution of ships to marine plastic litter
- ✓ International cooperation and technical cooperation and capacity-building

IMO Resolutions and Circulars



Resolution MSC.550(108)

- Mandatory reporting of lost containers



MEPC.1/Circ.909

- Carriage of plastic pellets by sea in freight containers

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