

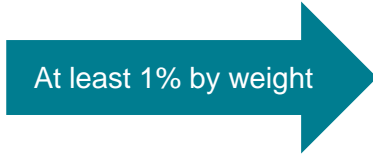
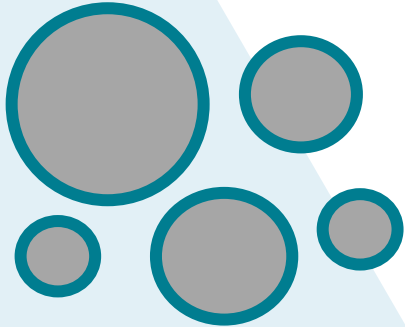
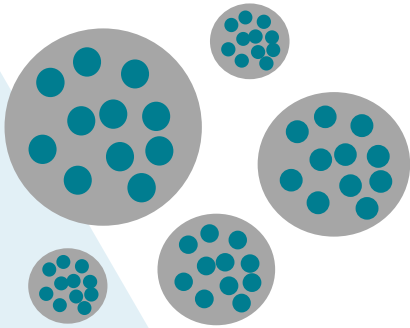
# Microplastic – Status in Floor Polishes From a Polymer Manufacturer's Point of View

03.10.2023

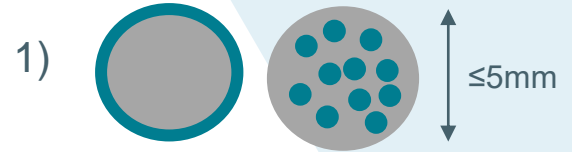
Christelle Mannheim



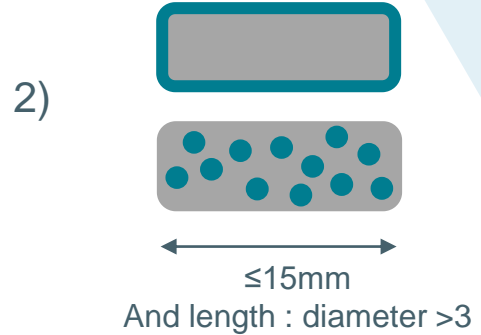
# What is a microplastic (S<sub>ynthetic</sub> P<sub>olymer</sub> M<sub>icroparticle</sub>)?



No lower size limit BUT  
1) <100nm or 2) <300nm  
not considered until analytical  
data methods are available



OR



# Microplastic regulation (EU) 2023/2055 of 25.09.23

## Paragraph 1

Shall not be placed on the market as substances on their own or, where the synthetic polymer microparticles are present to confer a sought-after characteristics, in mixtures in a concentration **equal to or greater than 0.01% by weight**

## Entry into force: October 17, 2023

- Focus on intentionally added microplastics
- Paragraph 1 will apply 5 years after entry into force for detergents, waxes and polishes



# Exclusions

- **Natural**                      Polymers resulting from a polymerization process that has taken place in nature, which are not chemically modified substances
- **Degradable**                Polymers that are degradable as proved in accordance with Appendix 15
- **Soluble**                        Polymers that have a solubility greater than 2g/L as proved in accordance with Appendix 16
- **No carbon**                    Polymers that do not contain carbon atoms in their chemical structure



# Derogations

- **Paragraph 5a** Synthetic polymer microparticles which are contained by technical means so that releases to the environment are prevented when used in accordance with the instructions for use during the intended end use.
- **Paragraph 5b** Synthetic polymer microparticles the physical properties of which are permanently modified during intended end use in such a way that the polymer no longer falls within the scope of this entry.
- **Paragraph 5c** Synthetic polymer microparticles which are permanently incorporated into a solid matrix during intended end use.



**Floor polish**

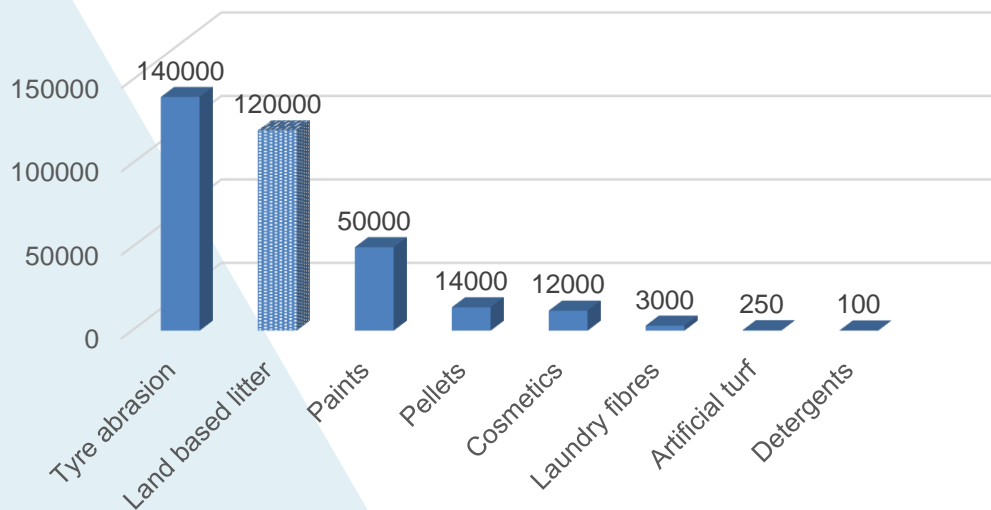


**Microplastic**



# Floor polish - A source of microplastic?

Microplastic sources in t/y in OSPAR catchment region



Microplastic release to marine environment of OSPAR region (North-East-Atlantic)



Total: ~340,000 t/y

Detergents: 100 t/y → **0.03 %**



## Floor polish – A source of microplastic?

Estimated release of intentionally added microplastic in environment (ECHA):

Total release..... 42,000 t/y (© Tim Bowmer, ECHA, Apr 2023)

Waxes, polishes and air care products: 585 t/y → **1.4 %** of total release





# Floor polish – What can we do?

- ▶ Simple solution: Stop using polish – „No polish, no microplastic?“
- ▶ Would it really help?
- ▶ **No!**
  
- ▶ A floor polish provides much more than a nice look!



# Importance of Floor Care

- ▶ More than an appealing appearance
- ▶ Safety
- ▶ Prevention of premature wear of floorings
- ▶ Reduced material waste, energy consumption and cost
- ▶ **Easier maintenance for better hygiene**
- ▶ **Reduced marks and residues from rubber/plastic on floorings**

# Main raw materials in Floor Care

## ► Polymers

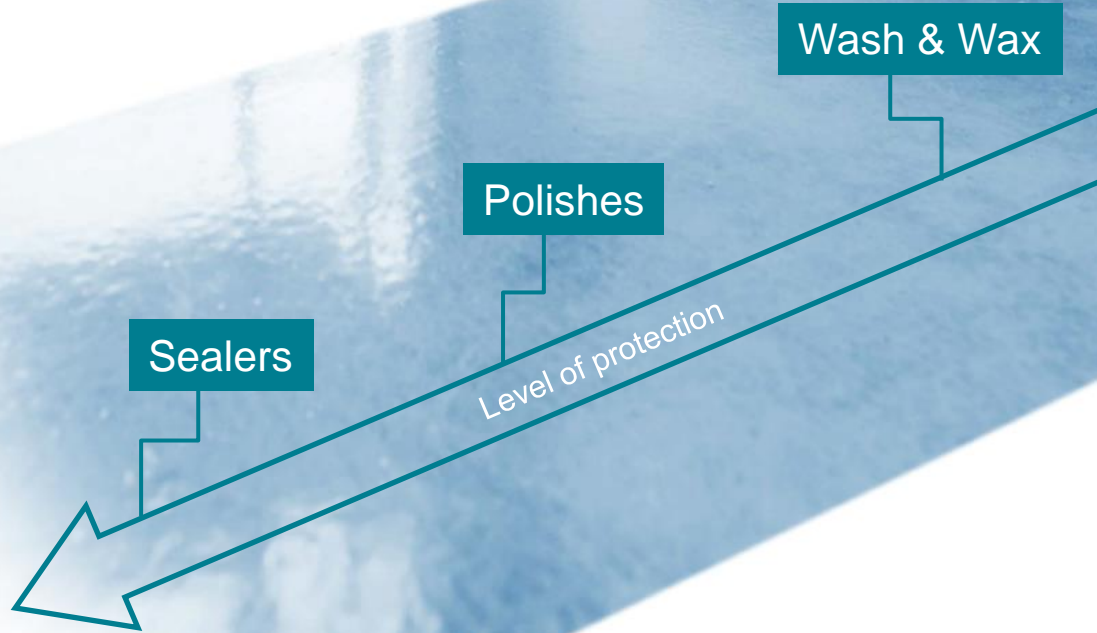
- Gloss
- Chemical resistance
- Durability

## ► Waxes

- Scuff resistance
- Slip resistance
- Dirt resistance

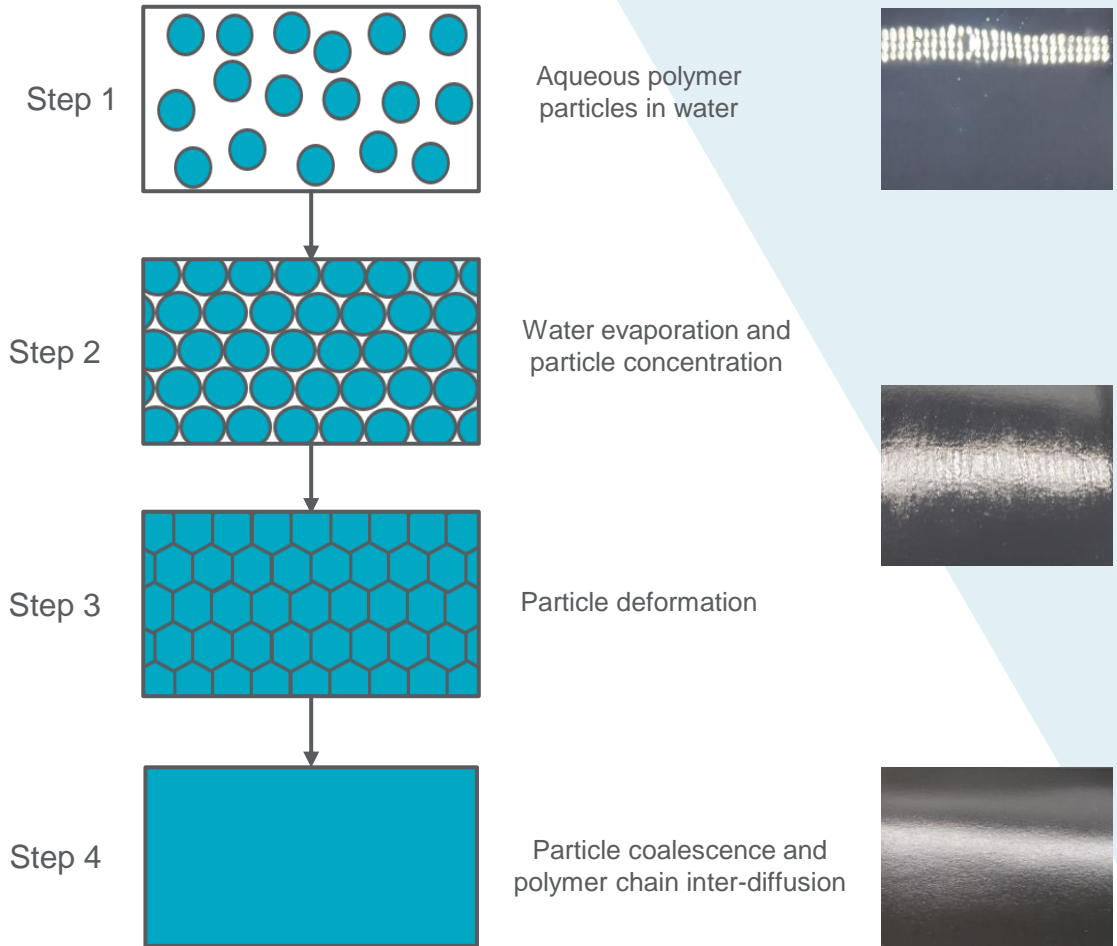
## ► Resins

- Shine and levelling
- Removing ability
- Protection



# Film forming property of polymers and resins

- ▶ Complete loss of original particle morphology after drying in right conditions



# Microplastic status

Raw material	Average content in weight in a 20% floor polish	Microplastic?
Polymer dispersion	40-60%	Yes
Synthetic wax emulsion	5-15%	Yes
Resin solution	0-5%	No



# Microplastic status

Raw material	Average content in weight in a 20% floor polish	Microplastic?	Status
Polymer dispersion	40-60%	Yes	Derogation 5b
Synthetic wax emulsion	5-15%	Yes	Derogation 5c?
Resin solution	0-5%	No	Out of scope



# Conclusion

- ▶ New regulation by the European Commission to restrict the use of SPM:
  - ▶ **Entry into force October 27, 2023**
- ▶ Impact on the raw materials used in floor polishes:
  - ▶ Film-forming polymer dispersions are exempted → Derogation 5b
  - ▶ Resin solutions are excluded → No particle
  - ▶ Probable need for alternatives to synthetic waxes → Switch to natural waxes

Floor polishes can still be produced with derogated or excluded raw materials and commercially available alternatives to possibly restricted ingredient



Thank you for your  
kind attention.

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