

APPENDIX 6: DETAILED GUIDANCE ON FFI'S PRINCIPLES, INCLUDING EVIDENCE SOURCES, DESIGNED TO SHAPE EFFECTIVE LEGISLATION GOVERNING MPI USE

	Applicable to legislation as well as corporate commitments?	Detailed rationale:	Reference(s) for rationale details:
1. Restriction of all microplastic ingredients	✓	MPIs are manufactured for use as exfoliants in cleansing and scrubbing products	<ul style="list-style-type: none"> • Leslie 2014 Review of Microplastics in Cosmetics report¹ • UNEP 2015 Plastic in Cosmetics report² • Evidence from laboratory tests of cleansing or scrubbing products^{3,4,5} • DuPont's polyethylene particles⁶ • Honeywell's polyethylene particles⁷ • Omya's polyethylene particles⁸ • Prospector ingredient database listing for polypropylene⁹ • MatWeb ingredient database listing for nylon¹⁰
		MPIs are manufactured for other uses in non-cleansing and scrubbing products	<ul style="list-style-type: none"> • Leslie 2014 Review of Microplastics in Cosmetics report¹ • UNEP 2015 Plastic in Cosmetics report² • Ooms et al. 2015 test¹¹ • CIR safety data sheet for polyethylene terephthalate (PET)¹² • Lush USA blog¹³ • MicroPowders data sheet for polytetrafluoroethylene (PTFE)¹⁴ • Prospector ingredient database listing for polymethyl methacrylate (PMMA)¹⁵ • CIR safety data sheet for nylon¹⁶
		When used to exfoliate, MPIs are often (but not always) made from the polymer polyethylene (in solid form) and referred to as "microbeads"	<ul style="list-style-type: none"> • DuPont's polyethylene particles⁶ • Honeywell's polyethylene particles⁷ • Omya's polyethylene particles⁸
		Polypropylene is manufactured as an exfoliant (in solid form)	<ul style="list-style-type: none"> • Prospector ingredient database listing for polypropylene⁹
		Polyethylene and polypropylene are used in solid form in industrial hand cleaning products	<ul style="list-style-type: none"> • Selden industrial hand cleaner with polyethylene beads¹⁷ • Power maxed industrial hand cleaner with polypropylene beads¹⁸
		Polyethylene terephthalate (PET) is manufactured (in solid form) as an exfoliant, a bulking agent, a hair fixative, a viscosity increasing agent and a glitter	<ul style="list-style-type: none"> • CIR safety data sheet for PET¹² • Lush USA blog¹³
		Polymethyl methyl acrylate (PMMA) is manufactured (in solid form) to increase smoothness, fluidity and lubricity	<ul style="list-style-type: none"> • Prospector ingredient database listing for PMMA¹⁵
		Nylon is manufactured (in solid form) as a bulking and opacifying agent	<ul style="list-style-type: none"> • CIR safety data sheet for nylon¹⁶
		Polytetrafluoroethylene (PTFE) is manufactured (in solid form) to aid in dispersibility, lubricity and feel	<ul style="list-style-type: none"> • MicroPowders data sheet for PTFE¹⁴
		Many other synthetic polymers, cross-polymers and co-polymers can be manufactured to be solid in form (i.e. a plastic) and used in products	<ul style="list-style-type: none"> • Leslie 2014 Review of Microplastics in Cosmetics report¹ • UNEP 2015 Plastic in Cosmetics report² • Ooms et al. 2015 test³
		Many existing corporate "microbead phase-out" commitments specify that they will only remove one or more named polymer, rather than all MPIs	<ul style="list-style-type: none"> • Greenpeace East Asia 2016 report¹⁹
		Many existing corporate "microbead phase-out" commitments specify that they will only remove MPIs with a specific function, rather than all MPIs	<ul style="list-style-type: none"> • Greenpeace East Asia 2016 report¹⁹
		The European "voluntary phase-out" recommendation by trade body Cosmetics Europe only encourages removal of MPIs with a specific function	<ul style="list-style-type: none"> • Cosmetics Europe 2015 voluntary phase-out recommendation²⁰
The US Microbeads ban only restricts the use of MPIs with a specific function	<ul style="list-style-type: none"> • US Microbead-Free Waters Act²¹ 		

2. Application to all 'down the drain' products'	✓	MPIs are included in products that are used on users' skin and direct users to dispose of the product in whole or in part to drains after use	• <i>Appendix 2 of this report</i>
		MPIs are included in products that are used on users' skin and are intended by manufacturers to be removed to non-drain waste (bins)	• <i>Appendix 2 of this report</i>
		Products that manufacturers intend to be removed to non-drain waste are emitted in whole or in part to drains after use, through user behaviour/choice	• US survey of consumer behaviour ²²
		MPIs are used in products that are used on surfaces that are then emitted in whole or in part to drains after use	• <i>Appendix 2 of this report</i>
		MPIs are used in products that are used in washing machines that are then emitted in whole or in part to drains after use	• <i>Appendix 2 of this report</i>
		Many existing corporate "microbead phase-out" commitments specify that they will only remove MPIs from specific categories of product ("rinse-off")	• Greenpeace East Asia 2016 report ¹⁹
		The US Microbeads ban only restricts the use of MPIs in a specific category of product ("rinse-off")	• US Microbead-Free Waters Act ²¹
3. No exemption for non-marine-tested synthetic solid ingredients	✓	MPIs have been replaced by some companies with alternatives that are non-organic (synthetic)	• Greenpeace East Asia 2016 report ¹⁹
		Synthetic alternatives to plastic ingredients can be labelled as "biodegradable", but it is not known whether they are biodegradable in conditions relevant to the marine environment	• UNEP 2015 Biodegradable Plastic and Marine Litter report ²³
		The only known standard assessing marine environmental biodegradability of plastics (ASTM D7081-05) has been deprecated	• ASTM Website ²⁴
		One company has publically acknowledged using a plastic ingredient with supposed "biodegradable" properties in its reformulation process; this replacement is known to not be fully marine biodegradable	• Company phase-out report ²⁵
4. No exemption for plastic ingredients below a certain size	✓	MPIs ranging from 0.0003mm up to 0.5mm in size have been found in products	• Dow Chemical sunspheres data sheet ²⁶ • Napper et al. 2015 study ²⁷ • Tanaka & Takada 2016 study ²⁸
		Some corporate commitments have specified a lower size limit for the MPIs they will remove	• Greenpeace East Asia 2016 report ¹⁹
		The European cosmetic trade body Cosmetics Europe had previously considered only MPIs above 0.001mm to be "microbeads"	• Eunomia 2016 report ²⁹
5. Implementation within an ambitious timeframe	✓	Many corporate "microbead phase out" commitments do not set an implementation date	• Greenpeace East Asia 2016 report ¹⁹
		The European "voluntary phase-out" recommendation by trade body Cosmetics Europe only requires compliance within five years of being issued	• Cosmetics Europe 2015 voluntary phase-out recommendation ²⁰
		The US Microbeads ban requires compliance within two years	• US Microbead-Free Waters Act ²¹
6. Applies to all brands in a company's portfolio	X	Some corporate commitments are different between and within their brand portfolio	• FFI correspondence ³⁰
7. Applies to all future formulations of products	X	Some completed corporate commitments have resulted in reformulating products with synthetic ingredients that perform in the marine environment comparably to plastic	• Company phase-out report ²⁵

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- ³⁰ Private correspondence between FFI and several multinational brands has demonstrated confusion as to whether a parent company's microplastic ingredient policy applies to its entire portfolio and whether a subsidiary company's microplastic ingredient policy also applies to the parent company. Additional confusion has arisen where the policies issued by a parent company and one or more of its subsidiaries appear to be misaligned or inconsistent with one another.