IWSFG Template for Reviewer comments and IWSFG secretariat observations[1]

Document reviewed:	**Due Date:** 2017-09-01

Initials	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment[2]	Comments	Proposed change	Observations of the secretariat
Standard 1	107	1	NA	Technical	The standard is suggesting use of more dispersible material in hygiene products, to qualify for labeling as "flushable", the desired attribute to avoid choking of wastewater systems. Such higher dispersibility is often achieved through shorter length of constituent fibers. Due to their reduced tendency to settle / coalesce, the highly dispersed short material/fiber may more easily bypass through the sewage clearing/filter system and land up downstream. This is supported by the observed predominance of short (1-2 mm) fiber downstream in marine life, as reported in reference 2 of the standard.	The standard must weigh the benefits and disadvantage of high dispersibility, and aim to arrive at an optimum.	
Standard 1	236	7.13	NA	Technical	The standard is recommending to limit and eliminate the use of regenerated fibers based on some reported studies. However, a conclusive understanding of the relative preference of cotton and regenerated cellulosic fibers needs to be arrived at with knowledgeable stakeholders, using wide ranging and statistically validated study. For example, distinction between these fibers may not be very straightforward during the reported studies (and lead to questionable conclusion), as the cellulose II structure (assigned to rayon) could also have resulted from the environment experienced. The cited reference 2 also mentions the diameter as 60 micron for the artificial fiber it attributes as regenerated viscose. The commonly used viscose fibers are 1.5 denier, thus diameter less than 15 micron. The second reference of the standard already recognizes that viscose fibers degrade faster than cotton, and this is established in several other studies: http://arkansasagnews.uark.edu/582-35.pdf http://onlinelibrary.wiley.com/doi/10.1002/app.20879/abstract;jsessionid=364503998314EC57F29A3E5450653851.f03t03	The standard must be balanced and should recognize the benefits of regenerated fibers. The regenerated cellulosic fibers have high propensity to absorb water and moisture as compared to cotton fibers. This is the reason they swell more and quickly, and lose over 50% of their strength in wet condition, making them more easily dispersible. This is an advantage over fibers such as cotton which gain strength when wet, and oil based fibers where strength is not affected by wetting. An additional advantage over cotton for the hygiene products is that the total cellulosics (to be used in such flushable hygiene products) can be reduced with the highly absorbing regenerated fiber constituents. It is widely established that biodegradability of regenerated viscose is better than cotton. Even some of the cited studies are not attributing their observations of regenerated fibers in marine life to the fiber itself but to the accompanying dyes. The standard needs to focus on biodegradability of the comprising	

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					The second reference clearly suspects the toxicity to be generated not from the fiber itself, but from the dyes, which happen to be same for cotton and regenerated cellulose.	materials, and could prescribe a test for the same. It may specify the dyes that can be used in "flushable" products, rather than limiting the cellulose type: cotton or regenerated.	

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