

mqm concept

microbiological quality management

360° concept to secure the high quality of your cosmetic products

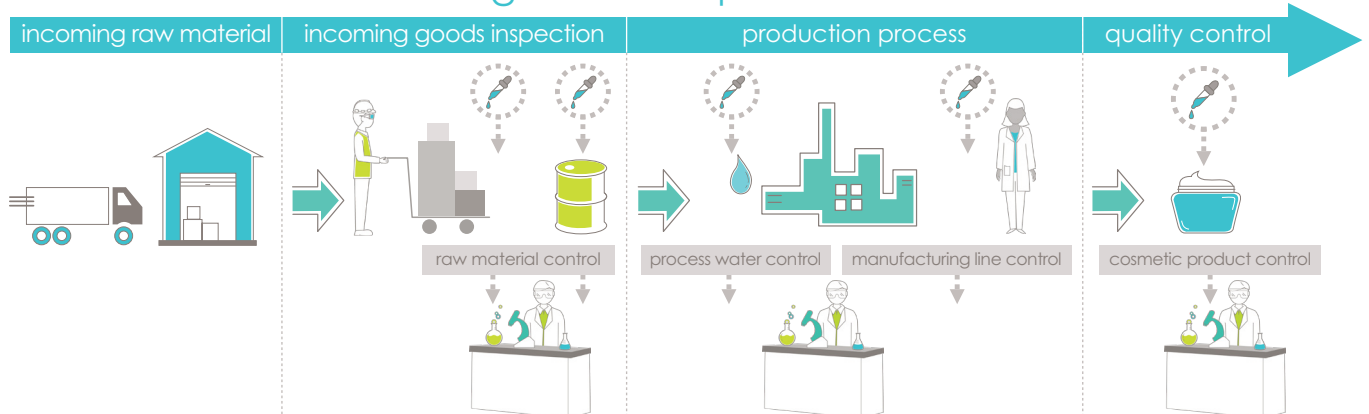
In today's world, the sustainable and responsible use of existing resources is more important than ever. Ashland's mqm concept take a closer look to what matters: achieving holistic product safety that takes ecological and economic aspects into account. The contamination of personal care products poses potential hazard to consumers but likely results in recalls, reputation loss, downtimes and cleaning measures in the production line.

Hence, Ashland's mqm concept offer a broader look on how to improve hygiene and cleaning measures, raw material quality and storage, plant design and even helps to build personnel training schemes.

Only if all relevant measures are taken into account the correct use of antimicrobials can be determined and limited to an essential minimum.



contamination risks during cosmetic production



key features and benefits

- ensure consumer and product safety
- improve hygiene standards and raw material quality
- minimize risks and errors throughout the entire production lifecycle
- achieve cost savings caused by recalls and downtimes

we offer a modular system to ensure product safety according to your needs

1

plant hygiene

- ensure a germ-free production
- cleaning & sanitation measure
- germcount™ combi dipslide to monitor hygiene measure
- hygienic design



During a hygiene audit all critical process steps are examined. This examination includes dosing, mixing, and filling, cleaning measurements, the hygiene of raw materials, tanks, filters, filling lines and packaging. A detailed report with all documented observations made and recommendations for improvement will be filed and issued.

In addition, Ashland offers hygienic plant design consultations.

2

product protection

- ensure a safe cosmetic product during storage & consumer usage
- right choice of preservative and/or multifunctional
- raw materials
- hurdle technology



Selecting the best suitable antimicrobial is the most important factor for a microbiologically safe cosmetic products. Ashland helps to choose the right technology from an extensive line that addresses all global requirements.

The so-called "Hurdle Technology" helps to determine the necessary dose level to balance safety and cost.

3

challenge tests

- ensure a safe cosmetic product during storage & consumer usage
- testing for the best preservation system and use concentration



Once the right antimicrobial is found a preservative efficacy test is employed for proof of concept. Ashland's in-house method CosPET is an extension to industry standard protocols. A broad spectrum of microorganisms, from industry standards to specifically selected bacteria, better reflects manufacturing reality.

4

trainings

- for staff to increase professional competence
- identify and avoid sources of errors



Thorough and repetitive training plays a major role to achieve best possible product safety. Provision of microbiological and production cleanliness knowledge will lead to greater hygiene awareness. Only skilled personnel will help to mitigate risk as to avoid product spoilage and produce safe personal care products.

germcount™ combi dipslide

easy hygiene testing with dipslides containing TTC and Rose Bengal Medium

key features and benefits

- evaluation of total germ count
- simple application
- fast, safe and easy
- precise and reliable
- economical to use
- separate evaluation of bacteria, yeasts and molds

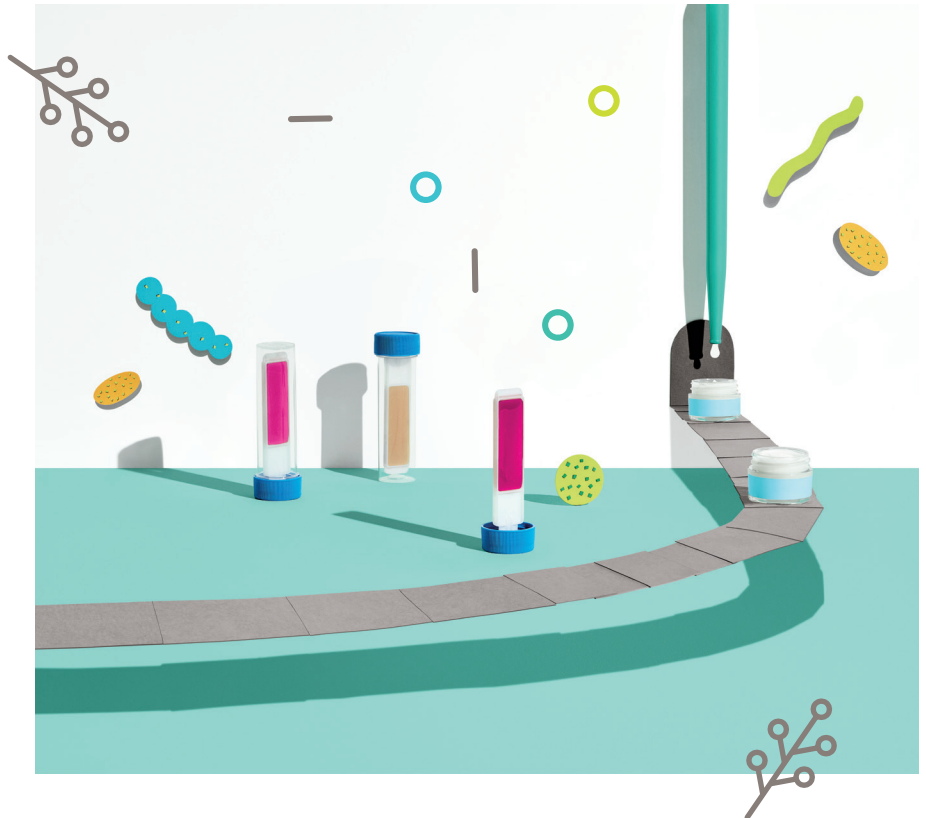
description

Germcount™ combi dipslide is a plastic slide coated on one side with TTC-agar (bacterial growth) and on the other side with Rose Bengal Agar (yeast and mold growth).

Germcount™ combi dipslide is manufactured under aseptic conditions. The agar surfaces contain no toxic ingredients that could be transferred to the products being tested.

Furthermore, this dipslide is supplied with a transparent, shatterproof protective tube. Subsequent contamination is therefore prevented, and the results can be evaluated with the tube sealed, thus avoiding the risk of contamination to employees.

With strict production standards, we guarantee that germcount™ combi dipslide is a product of consistent high quality.



quality assurance with germcount™ combi dipslide

In addition to production hygiene measures, hygiene guidelines and quality assurance concepts require routine hygiene controls during the production process and documentation of the results. Germcount™ combi dipslide provides every operation with individual means of rapid and reliable hygiene controls. These dipslides can be used for testing raw materials, for in-process controls during the production process, for quality control of finished products, and in watermixed coolants. Germcount™ combi dipslide enables simple sampling and evaluation of the results, even by personnel without any microbiological training. Special laboratory equipment is not necessary.

application

- cosmetic industry
- household industry
- technical industry



CosPET

Ashland's challenge test to find the best solution for your cosmetic products

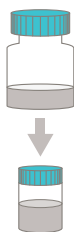
This method is used to determine the effect and impact of antimicrobials in cosmetic formulations, e.g. creams, lotions and shampoos. It includes a single inoculation of the test batches with a bacterial or fungal suspension. Simultaneously, streak cultures of each batch are made before inoculation. The microbial growth is evaluated semi-quantitatively. After inoculation the germ count is expected to decrease over time. The final assessment is based on European Pharmacopoeia guidelines.

In addition to the microorganisms suggested in guidelines such as Ph. Eur., Ashland's CosPET contains additional bacteria that can occur in the production of a cosmetic product. An example of this is *Pluralibacter gergoviae*, which has been responsible for recalls of cosmetic products.

Successfully passing Ashland's CosPET ensures highest standards in antimicrobial efficacy and reliable safety of the tested products.

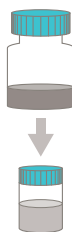
bacterial suspension

- S. aureus**
- S. epidermidis*
- P. aeruginosa**
- P. gergoviae*
- P. putida*
- B. cepacia*
- E. coli**
- K. pneumoniae*



fungal suspension

- C. albicans**
- A. brasiliensis**



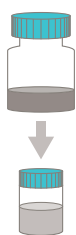
bold = used in EP/USP/JP*

**E. coli is used in products to oral application.*

evaluation time points:

bacteria: 2, 7, 14, 28d

fungi: 14, 28d



evaluation criteria	criteria	germ reduction requirement			
		2d	7d	14d	28d
bacteria	A	≤+++	≤++	–	n.i.
	B	–	–	≤++	n.i.
yeast & mold	A	n.d.	n.d.	≤++	n.i.
	B	n.d.	n.d.	≤+++	n.i.



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