Body Odor and Clothing - Is Your Product Ready for the Fight?
Introduction & Background
Odor producing products
Formation of sweat odor
### Sweat odor lead substances

<table>
<thead>
<tr>
<th>Odor threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyric acid</td>
</tr>
<tr>
<td>Iso-butyric acid</td>
</tr>
<tr>
<td>Isovaleric acid</td>
</tr>
<tr>
<td>Valeric acid</td>
</tr>
<tr>
<td>Propionic acid</td>
</tr>
<tr>
<td>Steroids</td>
</tr>
</tbody>
</table>
Odor forming bacteria

Odor causing bacteria:

• *Staphylococcus* spp.
• *Corynebacterium* spp.

DIN EN ISO 20743

→ Prevention
Interaction of odor and textile

- Elimination
- Masking

Odor-Binding
Odor-Release
Hohenstein research and testing
Hohenstein research on sweat odor binding

Hammer et al. 2012
Quantitative and sensory evaluation of malodour retention of fibre types by use of artificial skin, sweat and radiolabeled isovaleric acid

*Flavour and Fragrance Journal*
Release of odor substances
Recovery rate
Recovery rate
Sensory evaluation by olfactometry
Adhesion/Dehesion of sweat odor

Variety of influencing parameters:

- chemical structure of the odorants,
- fibre type,
- fibre finish,
- moisture sorption of the fabrics,
- construction and local influences of the skin, e.g. temperature and TEWL
Interaction of materials and odor

Adherence of odor molecules to different materials and odor release determine the perceived smell.

Assessing the capacity of clothing to reduce sweat odor

• in laboratory tests (in vitro)
• in wearing tests (in vivo)
Thank you

John Frazier
Senior Technical Director
Hohenstein Institute America

J.Frazier@hohenstein.com
503.806.7760

Hohenstein.us
Hohenstein Academy
Online & In-person Continuing Education

https://www.hohenstein-academy.com/en/main