

6 November 2020

We recommend against disinfecting of gloved hands

Given the current pandemic situation, hand hygiene and proper glove usage is as critical as ever. We would like to take the opportunity to clarify that medical gloves are **not intended to be disinfected** prior to use. In accordance with the recommendations of the WHO¹, it shall also be avoided to disinfect single-use gloves for reusing them on the same patient. This is similar to what the applicable EU regulation² refers to as a 'single-use device': "a device that is intended to be used on one individual during a single procedure".

Aside all concerns about sterilizing an examination glove – and the potential legal consequences! – there are hazards that are even more relatable to your daily work:

Sanitizers and disinfectants typically contain alcohols (usually ethanol or 2-propanol) as active ingredient. Due to their nature, most disposable gloves are not sufficiently resistant to concentrated alcohols. This means that the chemicals can pass through the glove barrier onto the user's skin (**permeation**). While this may not seem to be a problem in case of hand disinfectants, the opposite is true: The evaporation of the disinfectants is hindered by the glove film. This results in significantly prolonged exposure to harmful chemicals, which causes a hazard for the skin of the user, **potentially resulting in occupational diseases**.

Furthermore, these concentrated alcohols can cause **severe degradation** of the glove polymer film and thus may **reduce** the physical properties (**force at break**) of the glove **considerably!** As a consequence, gloves have a greater risk of breaking which means that **safety and effectiveness are significantly reduced**, up to a point where a potential contamination of healthcare professionals during clinical practice cannot be excluded anymore.

Both internal and external³ studies have shown, that when single-use gloves are exposed to alcohol-based disinfectants, the normative requirements for medical gloves⁴ (6 N) are not met anymore – after an exposure time of 1-3 min (depending on the glove).

¹ WHO, World Alliance for Patient Safety, Information Sheet 6, (Oct. 2016), <https://www.who.int/gpsc/tools/Infsheet6.pdf>, (27.10.2020)

² Regulation (EU) 2017/746: Article 2(8)

³ Examples: Garrido-Molina JM, Márquez-Hernández VV, Alcayde-García A, Ferreras Morales CA, García-Viola A, Aguilera-Manrique G, Gutiérrez-Puertas L, Disinfection of gloved hands during the Coronavirus outbreak (COVID-2019), Journal of Hospital Infection, [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30430-8/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30430-8/fulltext), (27.10.2020); Kampf, Günter; Niermeier, Florian; Lemmen, Sebastian, Desinfektion behandschuter Hände, ds during the Coronavirus outbreak (COVID-2019), Krankenhaushygiene up2date 2018; 13(01): 27 - 40, https://eref.thieme.de/ejournals/1862-5800_2018_01#/10.1055-s-0043-123914, (27.10.2020)

⁴ EN 455-2:2015 "Medical gloves for single use Part 2: Requirements and testing for physical properties"

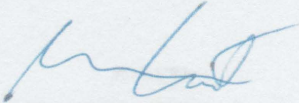
Among the factors that influence the time until degradation are:

- Glove material, wall thickness and type
- Type of disinfectant used
- Additional stress on the glove film (e.g. mechanical, thermal, stretching)

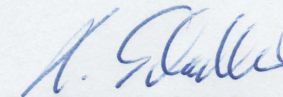
Please also refer to our Sempermed Informs that gives more background and explanations on the effects of disinfectants on glove behavior and which can be accessed via following link:

<https://www.sempermed.com/en/knowledge-centre/chemical-resistance/do-disinfectants-pose-a-danger-to-the-safety-of-medical-gloves/>

In case of doubt or for further questions, please contact Sempermed at sempermed@semperitgroup.com!



Dr. Alexander Weinert
Head of Technical Product Management



Dr. Raimund Schaller
Head of Research & Development and Innovation