

**Recommendation no. 2**  
**of the BPC Ad hoc Working Group on Human Exposure**

**Professional Mopping and Wiping Time Used for  
cleaning Hard Surfaces (PT2)**

**(Agreed at the Human Health Working Group II on 24 March 2014)**

## 1. Background

Application time is a critical value in the exposure assessment evaluation of glutaraldehyde used as a hard surface disinfectant in hospitals (PT2). It is also relevant for several active substances under evaluation. As different durations have been used in the draft CARs of different active substances (from 60 min to 330 min) the harmonisation of the application time is needed. The former HEEG position on the task duration for mopping and wiping was 330 min (110 min mopping and 220 min wiping) as used in formaldehyde evaluation made by DE (e-mail consultations between 30 October and 2 November 2013).

## 2. Discussion

Hospital cleaning by mopping and wiping with a disinfectant solution are intermittent tasks (3). A worker has typically other tasks as well to perform during a work shift. While a worker may spend 6.5 hours (390 minutes) per day "cleaning" only a portion of this time is spent mopping (about 100 minutes) or wiping (about 30 minutes) (1).

It is estimated in the formaldehyde evaluation made by Germany that 22 patient's rooms are mopped and wiped per day taking 5 min/room for mopping and 10 min/room for wiping. Furthermore, average time for an operation room was 22 minutes and 79 minutes for an isolation room in hospitals according to the study of Schipper *et al.* (1). Tasks performed were dilution and mixing of disinfectant and cleaning surfaces with a wrung cloth or mop and wringer bucket. Estimation is also in line with the statements from the American Society for Healthcare Environmental Services' Practice Guide for Healthcare Environmental Cleaning, where it is estimated that cleaning of an occupied patient room will take approximately 25-30 min per room if made according to all recommendations (8).

The USEPA (2010) memorandum on review of the AEATF II Mop Human Exposure Monitoring Study suggests that 90 minutes (rounded) of mopping per workday is a reasonable maximum duration (4). Duration of washing and wiping floors with mop, bucket and wringer was 8 to 39 minutes (median at 15 minutes) and 8 to 78 minutes (median at 15 minutes) for wiping plumbing fixtures and surfaces with rag washed in bucket in the study of Pependorf and Selim (7).

It is assumed that wiping takes longer than mopping since for wiping it is necessary to clean several small and different surfaces in a patient's room.

In Table 1 results of the literature survey is given concerning mopping and wiping times in hospitals.

Table 1. Mopping and wiping times in hospitals.

<b>Task</b>	<b>Duration</b>	<b>Reference</b>
Mopping and wiping	<b>Mopping 100 min, wiping 30 min</b>	TNO Schippers <i>et al.</i> , 1996 - (1)
Mopping	<b>75 min</b>	Messing <i>et al.</i> (1998) - (2)
Mopping	<b>90 min (max per day)</b>	The USEPA (2010) - (4)
Professionals Task: Washing and wiping floors with mop, bucket and wringer (e.g. hospitals, schools)	<b>Duration 8 to 39 min</b> (median at 15 min). No mixing or loading.	TNSG 2002, Pependorf and Selim, Am. Ind. Hyg. Assoc. J. (56):1111-1120, 1995 - (7)

User: Professionals Task: Wiping plumbing fixtures and surfaces with rag washed in bucket	<b>Duration 8 to 78 min</b> (median at 15 min). No mixing or loading	TNSG 2002, Pependorf and Selim, Am. Ind. Hyg. Assoc. J. (56):1111-1120, 1995 - (7)
Dilution and mixing of disinfectant and cleaning surfaces with a wrung cloth or mop and wringer bucket	The duration of the work considered per shift was on <b>average 22 minutes for an operation room and 79 minutes for an isolation room</b> in hospitals	TNSG 2002, Schipper <i>et al.</i> , 1996, TNO Report V96.314 - (1)

### 3. Proposal for harmonisation

The proposal for harmonisation of the reasonable worst case application time is 110 min for mopping and 220 min for wiping in the professional use of public and industrial areas such as in hospitals (product type 2).

### 4. References

1. H. J. Schipper, J. T. J. Stouten, R. B. M. Geuskens and J. J. Van Hemmen, Indicative Health Risk Evaluation of Hospital Workers to the Disinfectants o-Phenylphenol and o-Benzylp-chlorophenol, TNO Report V 96.314. TNO Nutrition and Food Research Institute, Department of Occupational Toxicology, Zeist, The Netherlands (1996).
2. K. Messing, C. Chatigny, and J. Courville (1998). Light and heavy work in the housekeeping service of a hospital. *Applied Ergonomics*, Vol. 29, No. 6, 451-459.
3. European Commission (2002). DG Environment, Technical Notes for Guidance (TNSG)
4. United States Environmental Protection Agency (2010). Science Review of the AEATF II Mop Human Exposure Monitoring Study. Office of Chemical Safety. Washington, DC. <http://www.epa.gov/hsrb/files/meeting-materials/oct-27-28-2010-meeting/3e-epa-science-rvw-aeatf-mop-study10-4-10.pdf>.
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8. Press Release - Minimal Time Guidelines for Patient Room Occupied and Terminal (Discharge or Transfer) Cleaning and Disinfecting, Reno, September 24 2009.

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