

Temporary recommendations for environmental cleaning in facilities exposed to COVID-19.

**Recommendations are elaborated based on the interim guidelines by the European Centre for Disease Prevention and Control (ECDC) and the recommendations by the World Health Organization. The aim is to provide guidance for environmental cleaning in non-healthcare facilities (e.g. rooms, public offices, transports, schools, etc.) where confirmed COVID-19 cases have been.*

Environmental cleaning options

COVID-19 is an acute respiratory diseases, which led to a widespread outbreak in China, and which is also registered outside China. The causative virus (SARS-CoV-2) of COVID-19 belongs to the family of Coronaviridae, and since it can survive for several days in the environment, rooms exposed to COVID-19 shall be cleaned and disinfected before re-use, by using disinfectants.

Several disinfection agents are known to be effective against coronaviruses (see table). Active ingredients, such as sodium hypochlorite (contained in the household bleach) and ethanol (ethyl alcohol) are widely available in domestic settings.

Studies have been carried out to compare the effect of different healthcare germicides on coronaviruses. For example, **one minute** contact time with **70% concentration ethanol** on different coronaviruses (including human coronaviruses) and contact time with **0.05% and 0.1%** concentration sodium hypochlorite after **five minute exposure** have been tested. Similar results were obtained using household detergents containing sodium sulphate, sodium lauryl, alkyl polyglycosides and coco-fatty acid diethanolamide.

Table. Antimicrobial agents effective against different coronaviruses: human coronavirus 229E

(HCoV-229E), mouse hepatitis virus (MHV-2 and MHV-N), canine coronavirus (CCV), transmissible gastroenteritis virus (TGEV), and severe acute respiratory syndrome coronavirus (SARS-CoV)

Active ingredient	Concentration	Tested coronaviruses
Ethanol	70%	Hcov-229e, MHV-2, MHV-N, CCV, TGEV
Sodium hypochlorite	0.1-0.5% 0.05-0.1%	Hcov-229e SARS-CoV

Cleaning and disinfection

The use of 0.1% sodium hypochlorite (dilution 1:50 if household bleach at an initial concentration of 5% is used)

after cleaning with a neutral detergent is suggested by ECDC and WHO for decontamination purposes. Although no data on the effectiveness against the COVID-19 are available, but it is proven to be effective against other human coronaviruses and SARS-CoV.

For surfaces that could be damaged by sodium hypochlorite, 70% concentration of ethanol is needed for decontamination after cleaning with a neutral detergent.

All frequently touched areas, such as door handles, surfaces of walls and windows, surfaces in toilet and bathroom, phones, tablets and keyboards, should be also carefully cleaned. 70% concentration ethanol is recommended for treating small surfaces.

All textiles (e.g. bed linens, towels, curtains, etc.) should be washed using a hot-water cycle (90 °C) and adding laundry detergent. If a hot-water cycle cannot be used due to the characteristics of the tissues, specific detergents with a disinfectant should be used when washing the textiles (e.g. bleach or laundry products containing sodium hypochlorite). Bed linen is collected with caution, by not shaking it and placing it in a separate bag (i.e. not mixed with other bed linen). Avoid using furniture and objects, which cannot be treated.

The use of disposable cleaning equipment is recommended, such as cloths/sponges, cleaning rags, wipes or mops, and at the end of the premises cleaning, the cleaning equipment itself shall be cleaned and disinfected.

Using personal protective equipment during the cleaning of premises

Cleaning, disinfection, collection and washing of dirty laundry should be carried out using proper personal protective equipment (hereinafter referred to as PPE). The correct donning and doffing of PPE should be followed. Further information on the donning and doffing procedures can be found in the ECDC Technical Document '[Safe use of personal protective equipment in the treatment of infectious diseases of high consequence](#)'.

The following PPE items are suggested for use when cleaning facilities likely to be contaminated by 2019-nCoV:

- Filtering face pieces (FFP) respirators class 2 or 3 (FFP2 or FFP3);
- Goggles or face shield;
- Disposable long-sleeved water-resistant gown;
- Disposable gloves.

Disposable PPE should be treated as potentially infectious material and disposed as hazardous infectious waste. It is recommended to use disposable equipment, if that is not possible, choose PPE which is easy to clean and disinfect. Non-single use PPE should be decontaminated using the available products (e.g. 0.1% sodium hypochlorite or 70% ethanol). When other chemical products are used, the manufacturer's recommendation should be followed and the products prepared and applied according to them. When using chemical products for cleaning, it is important to keep the facility ventilated (e.g. by opening the windows) in order to protect the health of cleaning personnel.

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