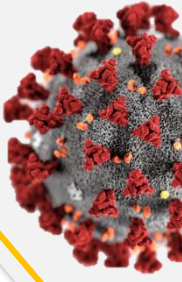




COPPER CLEAN (*COPPER-BASED FOIL ADHESIVE*) FOR PREVENTION OF COVID-19



BACKGROUND

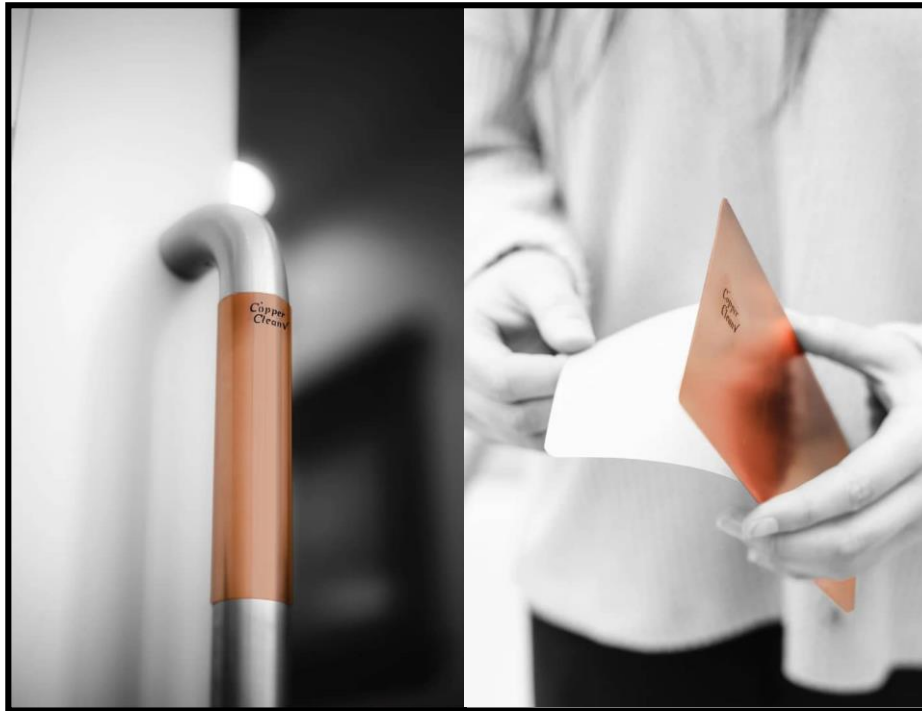


Figure 1A

Figure 1B

Figure 1A: Copper Clean on doorknob. 1B: Copper Clean before sticking onto surfaces

Copper Clean is a highly engineered copper-alloy foil with an adhesive backing which is a product developed by a team of researchers at West Texas A&M University in Canyon, Texas. The copper stickers are Environmental Protection Agency (EPA)-approved and manufactured. It can be attached to high-touch surfaces to alleviate the microbial burden. It was claimed to have potential as a supplement first-line defense measures against COVID-19 including social distancing, practicing proper hand hygiene and routine cleaning of frequently touched surfaces with disinfectants.¹

High-touch surfaces are surfaces that are handled frequently throughout the day by numerous people. These surfaces include doorknobs, light switches, phones, sink faucets, and toys. High-touch surfaces can become contaminated by direct contact with bodily fluids or through indirect contact with other contaminated objects, such as inadequately cleaned rags and sponges or improperly washed hands.² In hospital setting, high touch surfaces include bed rails, bed frames, moveable lamps, tray table, bedside table, handles, intravenous poles, and also blood-pressure cuff.³

COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. COVID-19 is now a pandemic affecting many countries globally.⁴ As to date, confirmed cases of COVID-19 accumulated to 4 million people worldwide, with confirmed death cases of 287 525 people.⁵ The disease is spread by human-to-human transmission via droplets or direct contact.⁶ Surface contamination has recently been found to be more significant than originally thought in the spread of this disease. Spread of this respiratory disease often result in continuous recontamination of surfaces which are then touched, and infectious virus particles may be transferred to facial mucosa.⁷

SARS-CoV-2 was more stable on plastic and stainless steel with viable virus detected up to 72 hours after application to these surfaces. Comparatively, there was no viable SARS-CoV-2 was measured after 4 hours on copper surface. On cardboard, there was no viable SARS-CoV-2 measured after 24 hours.⁸ A laboratory report showed that uncoated copper and copper alloy surfaces have antimicrobial activity against one strain of human coronavirus which is HUCoV-229E. Human coronaviruses are responsible for severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).⁷

Currently, the mean to control the infection or prevent the spread of SARS-CoV-2 is by primary intervention.

EFFECTIVENESS/EFFICACY and SAFETY

There was no article retrieved from the scientific databases such as Medline, EBM Reviews, EMBASE via OVID, PubMed and from the general search engines [Google Scholar and US Food and Drug Administration (USFDA)] on the use of copper-based foil adhesive for prevention of spread against COVID-19 or coronavirus.

There were several clinical studies retrieved on usage of copper as antimicrobial surfaces to reduce healthcare-acquired infections and/or against bacterial pathogens such as *Clostridium difficile* (*C. difficile*), Methicillin-resistant *Staphylococcus aureus* (MRSA), Vancomycin resistant enterococcus (VRE), *Acinetobacter* spp., Enterobacteriaceae (including *Escherichia coli*, *Klebsiella* sp. *Enterobacter* sp. and others) and extended spectrum beta lactamase (ESBL) producing organisms.⁹⁻¹³

COST

The copper clean stickers are sold for \$24.50 (~RM 106.26) which contains 5 pack of stickers (each patch with the size of 5.25 inches in length times 3.625 inches in width).¹

CONCLUSION

Due to the limited evidence against SARS-CoV-2, further trials are required to assess the effectiveness of copper surfaces against SARS-CoV-2.

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Based on available evidence up to 14 May 2020

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Disclaimer: This rapid assessment was prepared to provide urgent evidence-based input during COVID-19 pandemic. The report is prepared based on information available at the time of research and a limited literature. It is not a definitive statement on the safety, effectiveness or cost effectiveness of the health technology covered. Additionally, other relevant scientific findings may have been reported since completion of this report.

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