

UNDERSTANDING BEST PRACTICES FOR MAINTAINING OUTDOOR EQUIPMENT IN 2020

At ONE PLANET our aim is to provide quality equipment that lasts whilst keeping kids safe and making life easy for teachers and leaders.

Equipment hygiene has become an essential part of risk management for schools and institutions in 2020, especially for gear that may be used by multiple users within a short time frame.

Our *'Guidelines for Cleaning and Maintenance'* document gives information about our methods for hygiene control and gear maintenance, including suggested practical steps for those working in institutional settings.

Further information can be found at www.oneplanet.com.au/outdoor-education-home, or get in touch directly via sales@oneplanet.com.au

KEY DEFINITIONS

Cleaning: to free from dirt or contaminants

(Cleaning products are used to remove germs, dirt, and other organic material by washing them down the drain)

Sanitising: ridding a surface of contaminants and killing germs

Disinfecting: to free from infection especially by destroying harmful microorganisms.

Disinfectants: a chemical that destroys vegetative forms of harmful microorganisms

Key attributes of disinfectants are:

- what is it effective against (which types of bacteria, viruses and other microorganisms)?
- the dwell time (how long it takes to kill and achieve a 6-log (99.9999%)) reduction in micro-organisms

Virus: any of a large group of sub microscopic infectious agents that typically contain a protein coat surrounding a RNA or DNA core of genetic material but no semipermeable membrane, that are capable of growth and multiplication only in living cells.

REFERENCE

Dictionary by Merriam-Webster: America's most-trusted online dictionary. (n.d.). Dictionary by Merriam-Webster: America's most-trusted online dictionary. <https://www.merriam-webster.com/dictionary/>

RISK & CONCERN IN 2020

In 2020 there is concern about Coronavirus (AKA COVID-19, SARS-CoV-2 or Coronavirus disease) and the spread of infection.

There is the potential and risk of viral infection and spread via 'contact with droplets from an infected person's cough or sneeze'.* These droplets may remain on outdoor gear and equipment between users.

Research published in *The New England Journal of Medicine* on 16 April 2020 found that SARS-CoV-2 can survive for hours – and in some cases, days – outside a host, depending on the surface.† The study looked at the stability of the virus in the air, as well as on plastic, stainless steel, copper and cardboard surfaces.‡

Under experimental conditions, it found that the virus remained viable in air for the entire three-hour experiment. It was more stable on plastic and stainless-steel surfaces than on either copper or cardboard. There wasn't any viable SARS-CoV-2 detected on the copper surface after four hours or on the cardboard after 24 hours, while it could still be detected on the stainless steel and plastic surfaces up to 72 hours later.

In relation to outdoor gear, ONE PLANET's concern is that viruses could remain viable on equipment and spread infection between users.

Equipment in the ONE PLANET range is manufactured from a variety of textiles, foams, components, and trimmings. This includes hard surfaces, as well as coated and uncoated textiles of both porous and non-porous nature.

REFERENCE

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What you need to know about coronavirus (COVID-19). (2020, April 30). Australian Government Department of Health. <https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/what-you-need-to-know-about-coronavirus-covid-19#what-is-covid19>

†

Dr. van Doremalen, Trenton Bushmaker, & Dylan H. Morris. (2020, March 17). *Aerosol and surface stability of SARS-Cov-2 as compared with SARS-Cov-1* | *NEJM*. *New England Journal of Medicine*. <https://www.nejm.org/doi/10.1056/NEJMc2004973>

‡

Suzannah Lyons. (2020, March 22). *How long coronavirus lasts on surfaces*. ABC (Australian Broadcasting Corporation). <https://www.abc.net.au/news/science/2020-03-20/how-long-does-coronavirus-last-on-surfaces/12074330>

MANAGING RISK

Please refer to our '*Guidelines for Cleaning and Maintenance*' document for instructions to improve equipment maintenance and hygiene procedures.

To maintain good gear hygiene, we recommend the thorough cleaning of all ONE PLANET equipment after every journey. Your gear should be stored dry and clean, and regularly serviced.

During servicing, as a step towards disinfection, we suggest the use of 'Advance Chemicals ADSAN LN1856 Virucidal Disinfectant and Sanitiser'.

Please refer to the 'Advance Chemicals ADSAN LN1856 Virucidal Disinfectant and Sanitiser' documentation and associated Safety Data Sheet for more information.

What is ADSAN LN1856 and what is its efficacy?

'ADSAN LN1856 Virucidal Disinfectant and Sanitiser' is a ready-to-use sanitiser for both non-porous and porous surfaces. It is based on patented technology using a blend of specialised quaternary ammonium disinfectants.

'ADSAN LN1856 Virucidal Disinfectant and Sanitiser' will kill a broad spectrum of micro-organisms including bacteria, viruses, yeasts, moulds, fungi and algae.

'ADSAN LN1856 Virucidal Disinfectant and Sanitiser' is modelled on a ready-to-use, surface-disinfecting spray listed by the United States Environmental Protection Agency (EPA) in a list of registered products of manufacturers claiming virucidal kill. This similar product is claimed to kill a wide range of microbes, including 22 viruses, one of which is Coronavirus (SARS-CoV). This virus is in the same family as COVID-19 and is described as a surrogate virus to COVID-19. No manufacturer has yet claimed kill against COVID-19.

REFERENCE

Advance Chemicals LN1856 information sheet

EPA recommendations and criteria

All products on the EPA's List N meet the EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19. The list is here: www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19

While surface disinfectant products on [List N](#) have not been tested specifically against SARS-CoV-2 (the cause of COVID-19), the EPA expects them to kill the virus because they:

- Demonstrate efficacy (effectiveness) against a harder-to-kill virus; or
- Demonstrate efficacy against another type of human coronavirus similar to SARS-CoV-2.

On this list, 219 of 429 products list quaternary ammonium as a key primary ingredient (as of 10/06/2020).

Quaternary ammonium disinfectants work by denaturing the proteins of the cell, including the viral protein envelope, causing death. This means they are effective against viruses living outside a host.

Why a quaternary ammonium disinfectant (QAC) over other options?

Hypochlorite or chlorine bleach (eg, White King bleach).

- Is very effective at killing microorganisms at the right concentrations
- But very harsh and is likely to cause damage to the gear. It can also be dangerous if not used correctly, so best avoided.

Hydrogen peroxide and/or “peroxy” compounds including perborates and percarbonates (eg, Sard and/or Vanish powders).

- These are very effective at killing microorganisms and safer to use than chlorine bleach
- But once diluted and ready for use has a limited useful lifetime

Alcohols – methanol, ethanol, isopropanol (eg, methylated spirits)

- Can be effective at killing micro-organisms
- But they need to be of sufficiently high concentration to be effective and evaporate quickly – They become less effective over time as the alcohol evaporates.
- They are highly flammable

The United States Food and Drug Administration (FDA) has not cleared any liquid chemical sterilant or high-level disinfectant that has alcohol as the main active ingredient.

<https://www.cdc.gov/infectioncontrol/guidelines/disinfection/disinfection-methods/chemical.html>

Quaternary ammonium disinfectant – Advantages

- Quaternary ammonium-based sanitisers are effective against a large range of micro-organisms
- They have a stable and long shelf life
- By forming bacteriostatic film, it can limit the regrowth after cleaning.
- No need to rinse off the treated surface, once dried QAC will bind to the surface and will not readily transfer to a user’s skin.
- A stable sanitiser around organic matter and temperature changes
- Not dangerous for the purpose of transportation
- Simple goggles and gloves are the recommended Personal protective equipment

For more information <https://advancechemicals.com.au/sanitisers/>

REFERENCE

EPA releases list of disinfectants to use against COVID-19. (2020, March 5). US EPA. <https://www.epa.gov/newsreleases/epa-releases-list-disinfectants-use-against-covid-19>

List N: Disinfectants for use against SARS-Cov-2 (COVID-19). (2020, June 11). US EPA. <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19>

Why is ADSAN LN1856 a good choice of virucidal disinfectant and sanitiser?

We believe ADSAN LN1856 Virucidal Disinfectant and Sanitiser to be the ideal choice in improving hygiene and managing risk

- Effective against virus's
- Easily and simply applied
- Tested on ONE PLANET equipment
- Safe to use and transport

'ADSAN LN1856 Virucidal Disinfectant and Sanitiser' can be applied by spray (leave for two minutes) or immersion (one to five minutes), making it ideal for outdoor equipment and the easy bulk-processing of gear. It will tolerate a light soil load without losing its effectiveness. (Cleaning your equipment before use is recommended, especially for heavily soiled items.)

It is corrosion-safe on all metal and painted surfaces and will not harm plastics or fabric. It also works effectively on both non-porous and porous surfaces, ideal for outdoor equipment with its range of fabrics, textiles and componentry.

'ADSAN LN1856 Virucidal Disinfectant and Sanitiser' has very low irritancy on skin and is safe and simple to use, with the use of safety goggles and gloves recommended by Advance Chemicals. It is also non-flammable and low odour.

Finally, 'ADSAN LN1856 Virucidal Disinfectant and Sanitiser' is Australian made and can be sourced in bulk quantities.

REFERENCE

Advance Chemicals LN1856 information sheet

Using ADSAN LN1856 on ONE PLANET products?

We have tested ADSAN LN1856 on ONE PLANET products. It is safe to use on ONE PLANET rucksacks, duffels, tents & flies, Gaiters and Accessories whilst maintaining equipment performance.

Our study was designed explicitly to test if the disinfectant is harmful to our products and we cannot make any claims about its effectiveness against SARS-CoV-2 (*please refer to ADSAN LN1856 Virucidal Disinfectant and Sanitiser information sheet for efficacy*).

Our testing method

- involved submerging materials and components in concentrate ADSAN LN1856 for 72 hours before letting the materials dry naturally
- We then test performance characteristics against our quality control standards
- We then repeat daily with a spray application and performance testing

Disinfectant and cleaning solutions must always be prepared and used according to the manufacturer's instructions. This includes instructions for protecting the safety and health of workers, use of personal protective equipment, and avoiding mixing different chemicals.

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DISCLAIMER - These cleaning processes are recommended for the regular maintenance of your equipment and the health and safety of individuals who use it. Prolonged regular use of sanitisers may shorten the life of products, change their feel/texture and colour. We are continuing to monitor and test the long-term effects of regular use of ADSAN LN1856. ONE PLANET makes no claims towards the efficiency with which spray sanitisers reduce or remove micro-organisms on the above products. Information is accurate at time of printing (June 2020) and is subject to change without notice. ONE PLANET will not be held responsible for any damage to equipment caused through regular servicing. ONE PLANET has no commercial relationship with Advance Chemicals. For the latest information and updates please visit www.oneplanet.com.au/outdoor-education-home