

# Rely+On<sup>TM</sup> Virkon<sup>TM</sup>

Broad Spectrum  
Virucidal Disinfectant



- Unique formulation
- Effective against a broad spectrum of disease-causing organisms
- For use in medical facilities, pathology and biosafety containment laboratories, treatment salons and residential homes



# Rely+On™ Virkon™

The broad spectrum formulation of Rely+On™ Virkon™ is unique. No other disinfectant has the same powerful composition or extensive portfolio of performance and safety testing data. It combines application flexibility with broad spectrum efficacy, on hard surfaces, and in the face of organic challenge. These qualities make Rely+On™ Virkon™ the disinfectant of choice for use in medical facilities, pathology and biosafety containment laboratories, treatment salons and residential homes.

## Superior Operator Safety Profile

Rely+On™ Virkon™ has fewer handling and use constraints than many other disinfectant products and is not classified as harmful or a sensitiser in both powdered form and in-use dilutions, in accordance with EU legislation on the classification and labelling of chemical preparations.

### Environmental Profile

Rely+On™ Virkon™ oxygen-based chemistry contains simple organic salts and organic acids and the active ingredient decomposes by a variety of routes within the environment, in soil and water, breaking down to form the naturally occurring substances, potassium salts and oxygen. The major organic components are classified as readily biodegradable according to OECD and EU tests.

Rely+On™ Virkon™ is not considered persistent in the environment, according to the standard European process for the classification and labelling of chemical preparations. Independent studies have shown that diluted Rely+On™ Virkon™ should not, when used as directed, pose any threat to sewage treatment facilities.<sup>1</sup>



### Mode of Action

Rely+On™ Virkon™ oxidizes key structures and compounds, such as proteins, leading to widespread, irreversible damage and subsequent deactivation/destruction of the microorganism.

There is no evidence to suggest that bacterial disease-causing organisms develop resistance towards Rely+On™ Virkon™ as opposed to some other disinfectant types.



### Proven Broad Spectrum Efficacy

Independently proven highly effective against:

- over 100 strains of virus in 22 viral families
- over 400 strains of bacteria
- over 60 strains of fungi and yeast

using a wide variety of contact times, temperatures and organic challenge levels.

## Applications

### Medical Facilities

- Routine disinfection of hard surfaces, furniture, floors, walls and doors in hospital wards, clinics and laboratories.
- Broad spectrum disinfection and decontamination of hard surfaces in critical clinical facilities, such as operating theatres, intensive care units and accident and emergency departments.
- Body fluid spillage clear-up and decontamination.

### Pathology and Biosafety Containment Laboratories

- Routine cleaning and disinfection of hard surfaces and equipment\*, such as benches, floors, walls and doors, cabinets, centrifuges and pipette discard jars.

### Treatment Salons

- Routine cleaning and disinfection of hard surfaces such as floors, walls, doors and door handles.

### Residential Homes

- Routine disinfection of hard surfaces, equipment\*, furniture, floors, walls, doors and door handles in treatment and communal areas, corridors and bathrooms.\*\*

### Public Areas

- Routine disinfection of surfaces, including floors, walkways, walls, doors and door handles.

## Hard Surface & Equipment Cleaning & Disinfection

The level of disease-causing organisms present after general cleaning can remain high enough to offer a serious disease challenge to patients and staff. Using a disinfectant proven to be effective against viruses, bacteria and fungi, such as Rely+On™ Virkon™, is essential.

## Easy to Prepare

Readily soluble in warm tap water, Rely+On™ Virkon™ dissolves into a pink solution, which remains stable for up to 5 days, as a 1:100 solution. Consult your local representative for advice on stability for any alternate strength solutions.

Unused or inactive solutions may be disposed of via the sink (leading to waste water treatment facilities and in accordance with local regulations).



| Task                                             | Dilution Rate                                                | Application                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hard Surface Disinfection                        | 1:100 (10 grams of Rely+On™ Virkon™ to every litre of water) | Apply disinfectant solution using either a trigger spray bottle, a suitable knapsack type sprayer, cloth, sponge or floor mop. Allow to dry, before any re-use of treated areas. For disinfection of hard surfaces, apply the solution at a rate of 200ml/m <sup>2</sup>                                                                  |
| Equipment Disinfection (not for medical devices) | 1:100 (10 grams of Rely+On™ Virkon™ to every litre of water) | Suitable equipment can either be submerged and washed in disinfectant solution or sprayed and then wiped clean with a cloth or sponge. Rinse disinfected equipment with clean water after 10 minutes when materials compatibility is of concern. Refer to the product Instruction for Use leaflet (IFU) for further specific information. |

\* Not for use for the disinfection of medical devices.

\*\* Users should always check for compatibility with any sensitive materials before use. Do not use on any soft metals such as brass or copper. Not recommended for use on soft furnishings, textiles or carpets.

The specified uses and registered claims may vary from country to country. Please contact LANXESS to verify country-specific approved uses.

# Rely+On™ Virkon™

## 1. EN Efficacy Studies (EU)

| Type                 | Method                  | Organisms              | Strains tested              | Dilution rate | Contact time (mins) |
|----------------------|-------------------------|------------------------|-----------------------------|---------------|---------------------|
| Virus , suspension   | EN 14476:2013 +A1:2015  | Adenovirus type 5      | ATCC VR-5                   | 1:100         | 5                   |
| Virus , suspension   | EN 14476:2013 +A1:2015  | Poliovirus type 1      | LSc-2ab (Chiron -Behring)   | 1:100         | 5                   |
| Virus , suspension   | EN 14476:2013 +A1:2015  | Murine norovirus       | Berlin 06/06 DE Isolate S99 | 1:100         | 5                   |
| Virus , suspension   | EN 14476:2013 +A1:2015  | Influenza virus (H3N8) | A/duck/Ukraine/1/63         | 1:500         | 0.5                 |
|                      |                         |                        |                             |               |                     |
| Bacteria, suspension | EN 13727:2012 + A2:2015 | Ps aeruginosa          | ATCC 15442                  | 1:400         | 5                   |
| Bacteria, suspension | EN 13727:2012 + A2:2015 | S aureus               | ATCC 6538                   | 1:400         | 5                   |
| Bacteria, suspension | EN 13727:2012 + A2:2015 | E hirae                | ATCC 10541                  | 1:400         | 5                   |
|                      |                         |                        |                             |               |                     |
| Bacteria, surface    | EN 13697:2015           | Ps aeruginosa          | ATCC 15442                  | 1:100         | 5                   |
| Bacteria, surface    | EN 13697:2015           | S aureus               | ATCC 6538                   | 1:100         | 5                   |
| Bacteria, surface    | EN 13697:2015           | E hirae                | ATCC 10541                  | 1:100         | 5                   |
| Bacteria, surface    | EN 13697:2015           | E coli                 | ATCC 10536                  | 1:100         | 5                   |
|                      |                         |                        |                             |               |                     |
| Yeast, suspension    | EN 13624:2013           | Candida albicans       | ATCC 10231                  | 1:67          | 5                   |
| Yeast, suspension    | EN 13624:2013           | Candida albicans       | ATCC 10231                  | 1:133         | 15                  |
|                      |                         |                        |                             |               |                     |
| Yeast, surface       | EN 13697:2015           | Candida albicans       | ATCC 10231                  | 1:67          | 15                  |

## 2. Additional Virucidal Efficacy

The table below summarises independent efficacy data of Rely+On™ Virkon™ against important disease-causing pathogens.

| Organism/Disease                                       | Strain                          | Dilution Rate  | Organism/Disease            | Strain            | Dilution Rate |
|--------------------------------------------------------|---------------------------------|----------------|-----------------------------|-------------------|---------------|
| Adenovirus (h5)                                        | Type 5 ATCC VR-5                | 1:100          | Hepatitis A                 | Sattar            | 1:100         |
| Bacteriophages                                         | Strep. lactis bacteriophage 66  | 1:500          | Hepatitis B                 | DHBV              | 1:100         |
| Bacteriophages                                         | Bacteriophage T2 with E.coli    | 1:500 – 1:4000 | Hepatitis C                 | BVDV ATCC CCL-222 | 1:100         |
| Bacteriophages                                         | Bacteriophage MS2 with E.coli   | 1:500 – 1:4000 | HIV                         | Type 1            | 1:100         |
| Bacteriophages                                         | Bacteriophage OX174 with E.coli | 1:500 – 1:4000 | Influenza A virus           | ATCC VR-544       | 1:100         |
| Human Coronavirus 229E                                 | ATCC VR-740                     | 1:100          | Orthopox virus              | –                 | 1:100         |
| COVID-19                                               | SARS-CoV-2                      | 1:100†         | Respiratory syncytial virus | ATCC VR-26        | 1:100         |
| Feline calicivirus (surrogate for Norwalk & norovirus) | ATCC VR-782                     | 1:100          | Rotavirus                   | Human Strain      | 1:250         |

### Rely+On™ Virkon™ SARS-CoV-2 Efficacy

Rely+On™ Virkon™ broad spectrum disinfectant demonstrates extremely rapid efficacy against SARS-CoV-2, the virus responsible for COVID-19.

The efficacy testing was undertaken by Microbac Laboratories, Inc. in the USA, in accordance with the U.S. Environmental Protection Agency (EPA) compliant test methods, for products intended for virucidal hard surface disinfection, under high soiling conditions.

† Rely+On™ Virkon™ achieved rapid and complete inactivation of the SARS-CoV-2 virus at a dilution ratio of 1:100 in just 60 seconds.

### 3. Additional Bactericidal Efficacy

| Organism/Disease              | Strain                      | Dilution Rate |
|-------------------------------|-----------------------------|---------------|
| Acinetobacter baumannii       | Carbapenem resistant strain | 1:200         |
| Bacillus cereus (veg)         | ATCC 14579                  | 1:100         |
| Bacillus subtilis (veg)       | NCTC 10073                  | 1:100         |
| Campylobacter jejuni          | ATCC 24929                  | 1:100         |
| Chlamydia psittaci            | VR-125 (strain 6BC)         | 1:100         |
| Clostridium perfringens (veg) | ATCC 13124                  | 1:100         |
| Coxiella burnetii             | Nine mile (RSA 493)         | 1:100         |
| Enterobacter cloacae          | ATCC 13407                  | 1:400         |
| Escherichia coli 0157         | ATCC 43895                  | 1:100         |
| Escherichia coli              | CIP 54.127                  | 1:200         |
| Escherichia coli              | NCTC 8196                   | 1:100         |
| Escherichia coli (ESBL)       | NCTC 11560                  | 1:200         |
| Enterococcus faecium          | ATCC 6569                   | 1:400         |
| Enterococcus hirae            | CIP 58.55                   | 1:200         |
| Enterococcus faecium          | ATCC 10541                  | 1:100         |
| Legionella pneumophila        | NCTC 1192                   | 1:5000        |
| Listeria monocytogenes        | ATCC 19117                  | 1:100         |
| Klebsiella pneumoniae         | ATCC 4352                   | 1:100         |
| Klebsiella pneumoniae (ESBL)  | NCTC 13368                  | 1:200         |
| Pasteurella multocida         | ATCC 12947                  | 1:100         |

| Organism/Disease           | Strain                               | Dilution Rate |
|----------------------------|--------------------------------------|---------------|
| Proteus mirabilis          | ATCC 14153                           | 1:100         |
| Proteus vulgaris           | NCTC 4635                            | 1:100         |
| Ps. aeruginosa             | ATCC 15442                           | 1:100         |
| Ps. aeruginosa             | CIP 103467                           | 1:200         |
| Ps. aeruginosa             | ATCC 15442                           | 1:100         |
| Ps. aeruginosa             | CIP A22                              | 1:100         |
| Ps. aeruginosa             | NCTC 6749                            | 1:200         |
| Ps. aeruginosa             | PaFH72/a                             | 1:100         |
| Salmonella enteritidis     | CVI – WVR – Lelystad                 | 1:200         |
| Salmonella typhimurium     | DT104                                | 1:200         |
| Salmonella typhimurium     | ATCC 23564                           | 1:100         |
| Shigella sonnei            | ATCC 25931                           | 1:100         |
| Staphylococcus aureus      | ATCC 33592 (MRSA)                    | 1:100         |
| Staphylococcus aureus      | ATCC 6538                            | 1:100         |
| Staphylococcus aureus      | NCTC 4163 (MRSA 2 clinical isolates) | 1:100         |
| Staphylococcus aureus      | CIP 4.83                             | 1:200         |
| Staphylococcus epidermidis | ATCC 12228                           | 1:100         |
| Streptococcus faecalis     | NCTC 775                             | 1:100         |
| Streptococcus pyogenes     | ATCC 11229                           | 1:100         |
| Streptococcus suis         | ATCC 43765                           | 1:100         |

### 4. Additional Fungicidal/Yeasticidal Efficacy

| Organism/Disease           | Strain     | Dilution Rate |
|----------------------------|------------|---------------|
| Aspergillus niger (spores) | AnFH85/a   | 1:33          |
| Candida albicans           | CaFH69/a   | 1:40          |
| Candida albicans           | Gbl 648    | 1:100         |
| Candida albicans           | ATCC 10231 | 1:200         |

| Organism/Disease            | Strain     | Dilution Rate |
|-----------------------------|------------|---------------|
| Fusarium moniliforme        | ATCC 10052 | 1:50          |
| Saccharomyces cerevisiae    | ScFH68/a   | 1:40          |
| Trichophyton mentagrophytes | ATCC 9533  | 1:50          |

## Presentations

### Rely+On™ Virkon™ Powder

- 50 g sachet – makes 5 litres of disinfectant
- 500 g container – makes 50 litres of disinfectant
- 5 kg drum – makes 500 litres of disinfectant

### Rely+On™ Virkon™ Tablets

Convenient to store and easy to handle; simplifies accurate dosing of a disinfectant solution.

- 10 x 5 g tablets – makes 5 litres of disinfectant
- 50 x 5 g tablets – makes 25 litres of disinfectant



**Use biocides safely. Always read the label and product information before use.**

## Reference

1. WRc, 1997. Study to determine the toxicity of the virucidal disinfectant Virkon™ to the waterflea (*Daphnia magna*), the earthworm (*Eisenia foetida*) and anaerobic sludge.

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