

## CENTREGO MICROBIOLOGICAL TEST CERTIFICATES: August 2023

Centrego holds the following microbiological test reports for its systems and solutions:

Test Certificate	Test Type	Environment	Microorganism Species	Contact Time	Log and %age Reduction	Concentration	Pass
<b>EN1276 (2019)</b>	Bacterial activity	Evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas.	Pseudomonas aeruginosa	1 min	≥Log 5 99.999%	100ppm	Pass
			Escherichia coli		≥Log 5 99.999%	100ppm	Pass
			Staphylococcus aureus		≥Log 5 99.999%	100ppm	Pass
			Enterococcus hirae		≥Log 5 99.999%	100ppm	Pass
<b>EN 14476:2013+A3:2019</b>	Viricidal activity	This European Standard applies to products that are used in the medical area in the fields of hygienic handrub, hygienic handwash, instrument disinfection by immersion, surface disinfection by wiping, spraying, flooding or other means and textile disinfection. This European Standard applies to areas and situations where disinfection is medically indicated. Such indications occur in patient care, for example: - in hospitals, in community medical facilities, and in dental institutions; - in clinics of schools, of kindergartens, and of nursing homes; and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products directly for the patients.	Modified vaccinia virus	5 mins	>Log 4 99.99%	500ppm	Pass
			Ankara (MVA)		>Log 4 99.99%	200ppm	Pass
			Enveloped virus	1 min	>Log 4 99.99%	100ppm	Pass
					>Log 4 99.99%	500ppm	Pass
					>Log4 99.99%	200ppm	Pass
					Log3.98 99.98%	100ppm	Pass

<b>EN16777</b>	Viricidal activity	Evaluation of products that are used in the medical area for disinfecting non-porous surfaces including surfaces of medical devices without mechanical action. Such indications occur in patient care, for example: in hospitals, in community medical facilities, in dental institutions; in clinics of schools, of kindergartens, and of nursing homes and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products directly for the patients.	Vaccinia virus Enveloped virus	5 mins	>Log 4 99.99%	500ppm	Pass
				1 min	>Log 4 99.99% >Log 4 99.99% >Log 4 99.99% >Log4 99.99% Log3. 99.98%	200ppm 100ppm 500ppm 200ppm 100ppm	Pass Pass Pass Pass Pass
<b>EN13697</b>	Bacterial activity	Non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas.	Pseudomonas aeruginosa Escherichia coli Staphylococcus aureus Enterococcus hirae	1 min	>Log4 99.99% >Log4 99.99% >Log4 99.99% >Log4 99.99%	100ppm 100ppm 100ppm 100ppm	Pass Pass Pass Pass
<b>EN1650</b>	Yeast	Fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas -	Candida albicans	1 min	≥Log 4 99.99%	500ppm 250ppm	Pass Pass
	Fungi/mould		Aspergillus brasiliensis	1 min	≥Log4 99.99% 2.98 99.98% 2.32 99.32%	125ppm 500ppm 250ppm 125ppm	Pass Pass Pass
<b>EN14348</b>	Mycobactericidal	Evaluation of mycobactericidal activity of chemical disinfectants in the medical area including instrument disinfectants	Mycobacterium avium Mycobacterium terrae	1 min	>Log 4 99.99% >Log 4 99.99% Log 1.53 95.30%	500ppm 250ppm 50ppm	Pass Pass
<b>EN13727:2012 + A2:2015.</b>	Bacterial Activity	This European Standard applies to areas and situations where disinfection or antisepsis is medically indicated. hygienic handrub, hygienic handwash, surgical handrub, surgical handwash, instrument disinfection by immersion, and surface disinfection by wiping, spraying. Such indications occur in patient care, for example: - in hospitals, in community medical facilities and in dental institutions; - in clinics of schools, of kindergartens and of nursing homes;	Pseudomonas aeruginosa Escherichia coli Staphylococcus aureus Enterococcus hirae	30 secs	>Log 5 99.999% >Log 5 99.999% >Log 5 99.999%	1000ppm 500ppm 200ppm	Pass Pass Pass

<b>EN13624:2013</b>	Fungicidal or yeasticidal activity	This European Standard applies to areas and situations where disinfection or antisepsis is medically indicated, and for hygienic handrub, hygienic handwash, surgical handrub, surgical handwash, instrument disinfection by immersion, and surface disinfection by wiping and spraying. Such indications occur in patient care, for example in hospitals, in community medical facilities and in dental institutions, in clinics of schools, of kindergartens and of nursing homes; and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products.	Candida albicans	30 secs	>Log4 99.99% ≤3.08 99.90% ≤3.08 99.9.0%	1000ppm 500ppm 200ppm	Pass
<b>NF T 72-281</b>	Misting	The purpose of standard NF T 72-281 is to reference and validate the bactericidal, fungicidal, yeasticidal, sporicidal and virucidal effectiveness of the products of manufacturers of airborne surface disinfection systems (spray).The sectors concerned by these products are human and veterinary health, the food industry, the industrial sector and communities.	Pseudomonas aeruginosa Escherichia coli Staphylococcus aureus Enterococcus hirae Bacillus subtilis spores	1 min	Log6.49 99.9999% Log7.53 99.9999% Log6.63 99.9999% Log7.32 99.9999% Log4.0 99.99%	200ppm 200ppm 200ppm 200ppm 200ppm	Pass Pass Pass Pass Pass
<b>EN1656: 2019</b>	Bacterial activity	Evaluation of bactericidal activity of chemical disinfectants and antiseptics used in the veterinary area.	Escherichia coli Staphylococcus aureus Streptococcus uberis Streptococcus agalactiae	5min	>Log 5 99.999% >Log 5 99.999% >Log 5 99.999% >Log 5 99.999%	200ppm 200ppm 200ppm 200ppm	Pass Pass Pass Pass
<b>EN13727</b>	Bacterial activity	This European Standard applies to products that are used in the medical area in the fields of hygienic handrub, hygienic handwash, surgical handrub, surgical handwash, instrument disinfection by immersion, and surface disinfection by wiping, spraying, flooding or other means. This European Standard applies to areas and situations where disinfection or antisepsis is medically indicated. Such indications occur in patient care, for example: - in hospitals, in community medical facilities and in dental institutions; - in clinics of schools, of kindergartens and of nursing homes; and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products directly for the patients.	K. pneumoniae (ESBL strain)		>Log 5.9 99.999% Log 4.07 99.99% Log 3.82 99.98% Log 2.82 99.82%	100ppm 80ppm 50ppm 25ppm	Pass Pass

<b>EN1500</b>	Bacterial activity	Hygienic handrub evaluation	Escherichia coli	30 secs	Log3.2 99.92%	500ppm	Pass
<b>EN13697</b>	Bacterial activity	Surface test for the evaluation of bactericidal and/or fungicidal activity of disinfectants used in food, industrial, domestic and institutional areas.	Pseudomonas aeruginosa	1 min	Log4 99.99%	100ppm	Pass
			Escherichia coli		Log4 99.99%	100ppm	Pass
			Staphylococcus aureus		Log4 99.99%	100ppm	Pass
			Enterococcus hirae		Log4 99.99%	100ppm	Pass
<b>AOAC Method 961.02 (AOAC Official Methods of Analysis; 2005), ASTM E1053 "Standard Test Method for Efficacy of Virucidal Agents Intended for Inanimate Environmental Surfaces", and ASTM E2111-00 "Standard Quantitative Carrier Test Method to Evaluate the Bactericidal, Fungicidal, Mycobactericidal and Sporocidal Potencies of Liquid Chemical Germicides".</b>	Bacterial and viricidal activity	Test undertaken in US laboratory for US certification for use a general biocide and viricide in environments such as medical facilities, dental clinics, schools, children's nurseries, care homes, offices etc, for surface disinfection, medical instrument disinfection, food processing and water treatment.	Staphylococcus aureus (MRSA)	1 min	Log5 99.999%	100ppm	Pass
			Salmonella enterica	1 min	Log5 99.999%	100ppm	Pass
			Listeria monocytogenes	1 min	Log5 99.999%	100ppm	Pass
			Pseudomonas aeruginosa	1 min	Log5 99.999%	100ppm	Pass
			E. coli O157:H7	1 min	Log5 99.999%	100ppm	Pass
			Murine Norovirus MNV-1 (Human Norovirus Surrogate)	1 min	Log5 99.999%	100ppm	Pass
Poliovirus CHAT	1 min	Log6 99.9999%	100ppm	Pass			
<b>EN13624 - 2013</b>	Fungal Activity	This European Standard applies to areas and situations where disinfection or antisepsis is medically indicated, and for hygienic handrub, hygienic handwash, surgical handrub, surgical handwash, instrument disinfection by immersion, and surface disinfection by wiping and spraying. Such indications occur in patient care, for example in hospitals, in community medical facilities and in dental institutions, in clinics of schools, of kindergartens and of nursing homes; and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products.	Candida albicans	30 secs 5 mins	>Log 4.55 99.995%	500ppm 500ppm	Pass Pass
			Aspergillus brasiliensis ATCC 16404	30 secs 5 mins	>Log 4.55 99.9955%	500ppm 500ppm	Pass Pass
					Log 3.31 99.93%		
					>Log 4.44 99.994%		

<b>EN 13697 2015+A1: 2019</b>	Fungal activity	Surface test for the evaluation of bactericidal and/or fungicidal activity of disinfectants used in food, industrial, domestic and institutional areas.	Candida albicans Aspergillus brasiliensis ATCC 16404	5 mins 5 mins	>Log 3.17 99.91% >Log 5.72 99.999%	500ppm 500ppm	Pass Pass
<b>EN1276 2019 (Dirty Conditions)</b>	Bacterial activity	Evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas under dirty conditions (organic load)	Pseudomonas aeruginosa ATCC Escherichia coli Staphylococcus aureus Enterococcus hirae	1 minute	>Log 5.37 99.999% >Log 5.42 99.999% >Log 5.03 99.999% >Log 5.24 99.999%	125ppm 125ppm 125ppm 125ppm	Pass Pass Pass Pass
<b>EN17126 (2018)</b>	Sporicidal activity	Evaluation of sporicidal activity in hospitals, in community medical facilities and in dental institutions, in clinics, schools, kindergartens and nursing homes	Clostridium difficile Bacillus cereus Bacillus subtilis	5 minutes	>Log4.12 99.99% >Log4.04 99.99% >Log4.19 99.99%	500ppm 500ppm 500ppm	Pass Pass Pass
<b>EN 1656:2019 (Aquaculture) Dirty conditions</b>	Bacterial activity	Evaluation of bacterial activity of chemical disinfectants and antiseptics in the aquaculture industries, including fish farming, fish hatcheries, fish storage, fish processing and packaging.	Aeromonas salmonicida Yersinia ruckerii Carnobacterium maltaromaticum Lactococcus garviae	30 minutes	>Log5.08 99.999% >Log5.19 99.999% >Log5.13 99.999% >Log5.00 99.999%	500ppm 500ppm 500ppm 500ppm	Pass Pass Pass Pass
<b>EN 14675: 2015 (Aquaculture) Dirty conditions</b>	Viricidal activity	Evaluation of viricidal activity of chemical disinfectants and antiseptics in the aquaculture industries, including fish farming, fish hatcheries, fish storage, fish processing and packaging.	Infectious Pancreatic Necrosis Virus (IPNV) serogroup A2 Spjarup (SP) (ATCC VR-1318)	30 minutes	>Log4.17 99.99%	500ppm	Pass
<b>EN 16615:2015</b>	Bacterial activity Fungal activity	4 field test is the standard protocol that specifies the test procedure for determining the bactericidal and yeasticidal activity of disinfectant wipes intended to be used in hospitals in clean and dirty conditions	Pseudomonas aeruginosa Staphylococcus aureus ATCC Enterococcus hirae ATCC Candida albicans ATCC	1 minute	Log 5.48 Log 6.09. Log >5.73 Log >4.76	500ppm	Pass Pass Pass Pass

### EUROPEAN CHEMICALS AGENCY (ECHA) AND UK HEALTH & SAFETY EXECUTIVE (HSE) PRODUCT TYPES

Centrego devices and solutions are registered with the European Chemicals Agency (ECHA), and since 1<sup>st</sup> January 2021 with the UK Health & Safety Executive. This allows Centrego and its distributors to place products in the market in the EU and the UK.

Product Type	Heading	Use
<b>PT 1</b>	Human hygiene	Products in this group are biocidal products used for human hygiene purposes, applied on or in contact with human skin or scalps for the primary purpose of disinfecting the skin or scalp.
<b>PT2</b>	Disinfectants and algaecides not intended for direct application to humans or animals	Used for the disinfection of surfaces, materials, equipment and furniture which are not used for direct contact with food or feeding stuffs. Usage areas include, inter alia, swimming pools, aquariums, bathing and other waters; air conditioning systems; and walls and floors in private, public, and industrial areas and in other areas for professional activities. Used for disinfection of air, water not used for human or animal consumption, chemical toilets, waste water, hospital waste and soil. Used as algaecides for treatment of swimming pools, aquariums and other waters and for remedial treatment of construction materials. Used to be incorporated in textiles, tissues, masks, paints and other articles or materials with the purpose of producing treated articles with disinfecting properties.
<b>PT3</b>	Veterinary hygiene	Used for veterinary hygiene purposes such as disinfectants, disinfecting soaps, oral or corporal hygiene products or with anti-microbial function. Used to disinfect the materials and surfaces associated with the housing or transportation of animals.
<b>PT4</b>	Food and feed area	Used for the disinfection of equipment, containers, consumption utensils, surfaces or pipework associated with the production, transport, storage or consumption of food or feed (including drinking water) for humans and animals. Used to impregnate materials which may enter into contact with food.
<b>PT5</b>	Drinking water	Used for the disinfection of drinking water for both humans and animals.