



SPOTLESS MICROBIOLOGICAL REPORT

SKY CHEMICALS (UK) Ltd
Tel: +44 (0)114 278 0222 Fax: +44 (0)114 272 7750
Unit 12, Sheffield Design Studios, Sheffield, UK, **S3 8DB**

SPOTLESS

MICROBIOLOGICAL PROFILE

<u>CONTENTS</u>	<u>PAGE</u>
INTRODUCTION	2
1 BACTERIOSTATIC ACTIVITY	3
The following bacteria tested	
<i>Escherichia coli</i>	
<i>Listeria monocytogenes</i>	
<i>Proteus vulgaris</i>	
<i>Pseudomonas aeruginosa</i>	
<i>Staphylococcus aureus</i>	
2 BACTERICIDAL ACTIVITY	4-8
The following bacteria tested	
<i>Campylobacter jejuni</i>	
<i>Enterococcus hirae</i>	
<i>Escherichia coli</i>	
<i>Escherichia coli</i> '0157''	
<i>Listeria monocytogenes</i>	
Methicillin Resistant <i>Staphylococcus aureus</i>	
<i>Pseudomonas aeruginosa</i>	
<i>Salmonella enteritidis</i>	
<i>Salmonella typhimurium</i>	
<i>Staphylococcus aureus</i>	
3 FUNGICIDAL ACTIVITY	9
The following fungi tested	
<i>Aspergillus niger</i>	
<i>Candida albicans</i>	
4 VIRUCIDAL ACTIVITY	9
The following viruses tested	
Hepatitis B	
Human Immunodeficiency type 1 (HIV)	
 <u>APPENDICES</u>	
APPENDIX I	TEST METHOD REFERENCES
	10-11
APPENDIX II	GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS
	12-15

SPOTLESS MICROBIOLOGICAL PROFILE

INTRODUCTION

SPOTLESS is an un-perfumed, multi-purpose cleaner and terminal disinfectant. It can be used on a variety of surfaces including worktops, cutting boards, tables, vending machines, refrigerators, kitchen equipment, shelves, walls and floors.

SPOTLESS helps prevent the spread of infection and was formulated specially for the food and catering industry.

SPOTLESS has been tested and shown to be effective against a range of disease causing micro-organisms. Tests have been carried out in the UKAS accredited Microbiology Laboratory of Evans Vanodine International PLC or at the relevant expert virology laboratory.

Results are presented in tables following with effective dilution rates expressed as parts of product in parts of water.

PLEASE REFER TO PRODUCT LABEL FOR HOW TO USE AND FOR ALL RECOMMENDED USE DILUTION RATES

SPOTLESS MICROBIOLOGICAL PROFILE

1 BACTERIOSTATIC ACTIVITY

TEST METHOD: BS 6905 TEST TEMPERATURE 20°C / CONTACT TIME 72 HOURS			
BACTERIA	DISEASE	MINIMUM INHIBITORY CONCENTRATION	TEST REFERENCE
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:16000	1
<i>Listeria monocytogenes</i>	Food poisoning	1:64000	1
<i>Proteus vulgaris</i>	Urinary tract infections	1:320	1
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:160	1
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:16000	1

Minimum Inhibitory Concentration (MIC) values are an indication of the ability of a product to prevent the growth of bacteria (expressed as bacteriostatic action), they are not an indication of in-use dilutions for practical situations.

SPOTLESS MICROBIOLOGICAL PROFILE

2 BACTERICIDAL ACTIVITY

TEST METHOD: BS 6905 TEST TEMPERATURE 20°C, CONTACT TIME 8 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
Methicillin Resistant <i>Staphylococcus aureus</i>	Skin, bone and wound infections, pneumonia. Resistant to treatment with the antibiotic Methicillin	1:25	2

2 BACTERICIDAL ACTIVITY

TEST METHOD: BS 6471 TEST TEMPERATURE 22°C, CONTACT TIME 10 MINUTES			
BACTERIA	DISEASE	ANTIMICROBIAL VALUE	TEST REFERENCE
<i>Escherichia coli</i> 9517	Food poisoning, urinary tract infections	130	3
<i>Escherichia coli</i> '0157'	Food poisoning, which can result in enteritis and haemolytic uraemic syndrome (characterised by renal failure)	100	3

SPOTLESS MICROBIOLOGICAL PROFILE

2 BACTERICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD: BSEN 1276 TEST TEMPERATURE 20°C, CONTACT TIME 5 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:400	4
<i>Escherichia coli</i> "0157"	Food poisoning, which can result in enteritis and haemolytic uraemic syndrome (characterised by renal failure)	1:50	4
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:20	4
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:400	4

SPOTLESS MICROBIOLOGICAL PROFILE

2 BACTERICIDAL ACTIVITY UNDER DIRTY CONDITIONS

TEST METHOD: TEMPERATURE 20°C, CONTACT TIME 5 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:200	4
<i>Escherichia coli</i> 0157	Food poisoning, which can result in enteritis and haemolytic uraemic syndrome (characterised by renal failure)	1:25	4
<i>Campylobacter jejuni</i>	Enterocolitis. A major cause of diarrhoea	1:200	4
<i>Listeria monocytogenes</i>	Food poisoning	1:100	4
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:10	4
<i>Salmonella enteritidis</i>	Food poisoning (linked with poultry) resulting in gastro-enteritis	1:40	4
<i>Salmonella typhimurium</i>	Food poisoning (linked with cattle) resulting in gastro-enteritis	1:20	4
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:200	4

SPOTLESS MICROBIOLOGICAL PROFILE

2 BACTERICIDAL ACTIVITY UNDER DIRTY CONDITIONS AT LOW TEMPERATURES

TEST METHOD: BSEN 1276 TEST TEMPERATURE 10°C, CONTACT TIME 5 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:200	4
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:10	4
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:10	4
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:200	4

TEST METHOD: BSEN 1276 TEST TEMPERATURE 5°C / CONTACT TIME 5 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:200	4
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:10	4
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:10	4
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:100	4

SPOTLESS MICROBIOLOGICAL PROFILE

2 BACTERICIDAL ACTIVITY UNDER DIRTY CONDITIONS SHORTER CONTACT TIMES

TEST METHOD: BSEN 1276 TEST TEMPERATURE 20°C, CONTACT TIME 30 SECONDS			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:50	4
<i>Escherichia coli</i>	Food poisoning, urinary tract infections)	1:5	4
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:10	4
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:50	4

TEST METHOD: BSEN 1276 TEST TEMPERATURE 20°C, CONTACT TIME 1 MINUTE			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:160	4
<i>Escherichia coli</i>	Food poisoning, urinary tract infections)	1:10	4

SPOTLESS MICROBIOLOGICAL PROFILE

3 FUNGICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD: BSEN 1650 TEST TEMPERATURE 20°C, CONTACT TIME 15 MINUTES			
FUNGI	DISEASE	FUNGICIDAL DILUTION	TEST REFERENCE
<i>Aspergillus niger</i>	Aspergillosis	1:10	5
<i>Candida albicans</i>	Thrush	1:200	5

3 FUNGICIDAL ACTIVITY UNDER DIRTY CONDITIONS

TEST METHOD: BEEN 1650 TEST TEMPERATURE 20°C / CONTACT TIME 15 MINUTES			
FUNGI	DISEASE	FUNGICIDAL DILUTION	TEST REFERENCE
<i>Aspergillus niger</i>	Aspergillosis	UNDILUTED	5
<i>Candida albicans</i>	Thrush	1:50	5

4 VIRUCIDAL ACTIVITY

ROOM TEMPERATURE, CONTACT TIME 10 MINUTES			
VIRUS	DISEASE	VIRUCIDAL DILUTION	TEST REFERENCE
Hepatitis B (HBV)	Hepatitis B	1:25	6a
Human Immunodeficiency type 1 (HIV)	AIDS	1:5	6b

SPOTLESS MICROBIOLOGICAL PROFILE

APPENDIX I

TEST METHOD REFERENCES

Laboratory tests for bactericidal and fungicidal activity, have been performed by the UKAS accredited Microbiology Laboratory (Testing Number 1108) of Evans Vanodine International Plc.

1 BRITISH STANDARD: BS 6905:1987 APPENDIX A

Appendix A Minimum Inhibitory Concentration Test

In addition to the referenced organisms, *Listeria monocytogenes* was tested. The values are an indication of the ability of SPOTLESS to prevent the growth of bacteria in a clean environment i.e. bacteriostatic. They are not in-use dilutions.

2 BRITISH STANDARD: BS 6905:1987

Estimation of concentration of disinfectants used in `dirty` conditions in hospitals by the modified Kelsey-Sykes test

Only one organism was tested. Methicillin resistant *Staphylococcus aureus* (MRSA), under conditions simulating dirty conditions in hospitals.

3 BRITISH STANDARD: BS 6471:1984

Determination of the antimicrobial value of QAC disinfectant formulations

For the evaluation of household and domestic service disinfectants. *Escherichia coli* '0157' was tested in addition to the standard reference organism.

4 EUROPEAN STANDARD: BSEN 1276:1997

Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic, and institutional areas

Designed to test bactericidal products specifically for use in the Food and Catering Industry. It is carried out under "dirty" (representative of surfaces which are known to or may contain, organic and/or inorganic materials) and "clean" (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions. Additional temperatures and contact times were used as well as the obligatory test conditions.

SPOTLESS MICROBIOLOGICAL PROFILE

APPENDIX I

TEST METHOD REFERENCES

5 EUROPEAN STANDARD: BSEN 1650 :1998

Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas

Designed to test fungicidal products specifically for use in the Food and Catering Industry. It is carried out under “dirty” (representative of surfaces which are known to or may contain, organic and/or inorganic materials) and “clean” (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

VIRUCIDAL ACTIVITY

All virus tests were carried out by expert virology laboratories.

6a Hepatitis B (HBV)

An indirect method of measuring the activity against Hepatitis B was used as this virus cannot be propagated in tissue culture. The test method relies on the destruction of the surface antigen of HBV. The method is recommended by the German Association for the Control of Viral Diseases and usually makes greater demands on the concentration or contact time of the disinfectant than methods such as the demonstration of destruction of HBV DNA polymerase. The test was carried out at room temperature with a 10 minute contact time. No surface antigen remained detectable at the end of the contact time.

6b Human Immunodeficiency Virus Type 1 (HIV)

The test method uses an assay for measuring the concentration of a virus specific molecule in an infected blood sample following exposure of the sample to the disinfectant. The loss of detectable virus specific molecules is used as a marker of virus ‘killing’. The assay is likely to underestimate the effectiveness of the disinfectant against HCV because the molecule detected is relatively resistant to chemical degradation, it is however, essential for infectivity and so its disappearance following treatment is a good indication of virus inactivation.

SPOTLESS MICROBIOLOGICAL PROFILE

APPENDIX II

GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS

Agar	A derivative of marine sea-weed, used as a solidifying agent in <i>media</i> .
Acid	A substance with a pH less than 7.
Aerobic	Grows in oxygen atmosphere.
Alkali	Substance with a pH greater than 7.
Algicide	A chemical agent which, under defined conditions, is capable of killing algae including their <i>spores</i> .
Amphoteric	A class of surfactant, having both <i>anionic</i> and <i>cationic</i> properties.
Anaerobic	Grows in oxygen free atmosphere.
Anionic	A surfactant in which the surface active agent has a negative charge.
Antimicrobial	A substance capable of killing <i>micro-organisms</i> .
Antisepsis	The destruction or inhibition of <i>micro-organisms</i> on living tissues having the effect of limiting or preventing the harmful results of infection. It is not a synonym for <i>disinfection</i> .
Antiseptic	A chemical agent used in <i>antisepsis</i> .
Bacillus	A rod shaped bacteria.
Bactericide	A chemical agent which, under defined conditions, is capable of killing bacteria but not necessarily bacterial <i>spores</i> .
Bacteriostasis	A state of bacterial population in which, multiplication is inhibited.
Bacteriostat	A chemical agent which under defined conditions induces <i>bacteriostasis</i>
Biocide	A generalised term for a chemical agent capable of killing or inactivating <i>micro-organisms</i> . It embraces the more specific terms <i>algicide</i> , <i>bactericide</i> , <i>fungicide</i> , <i>sporicide</i> and <i>virucide</i> (see also <i>germicide</i>). Note. Pesticides are not considered to be <i>biocides</i> .
Black fluids	Coal-tar fractions solubilised with soaps.
Cationic	A surfactant in which the surface active agent has a positive charge
Chemical Sterilizing Agent	A chemical agent which, under defined conditions, leads to <i>sterilization</i> .
Chlorhexidine	A bisphenol compound used as <i>antiseptic</i> and <i>disinfectant</i> .

SPOTLESS MICROBIOLOGICAL PROFILE

APPENDIX II

GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS

Chlorine	A member of the Halogen group of elements. Frequently, but usually, incorrectly used to define the active species in, e.g. solutions of sodium hypochlorite.
Coccus	A spherical bacterium.
Disease	Any change from a general state of good health.
Disinfectant	A chemical agent which under defined conditions is capable of <i>disinfection</i> .
Disinfection	The destruction of <i>micro-organisms</i> , but not usually bacterial <i>spores</i> : it does not necessarily kill all <i>micro-organisms</i> , but reduces them to a level acceptable for a defined purpose, for example, a level which is harmful neither to health nor to the quality of perishable goods.
DNA	Deoxyribonucleic acid.
Formaldehyde	A colourless gas with a characteristic pungent odour. Used as a disinfectant in <i>fumigation</i> .
Fumigation	Exposure of enclosed spaces to action of gaseous or vapour-phase disinfectants or sterilants.
Fungicide	A chemical agent which under defined conditions is capable of killing fungi including their <i>spores</i> .
Fungus	A group of diverse unicellular and multicellular microorganisms (pl. fungi)
Fungistasis	A state of fungal population the development of which is inhibited.
Fungistat	A chemical agent which under defined conditions induces <i>Fungistasis</i> .
Genus	See <i>Species</i> .
Germ	A vague term which should be avoided. A <i>micro-organism</i> which can be harmful.
Germicide	A vague term which should be avoided. An agent under defined conditions, which is capable of killing <i>germs</i> .
Glutaraldehyde	A broad spectrum biocide used as an active ingredient in formulated disinfectants.
Gram Stain	Stain technique used to classify bacteria into two groups: Gram negative or Gram positive.

SPOTLESS MICROBIOLOGICAL PROFILE

APPENDIX II

GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS

Halogens	A group of chemicals consisting of e.g. Fluorine, <i>Chlorine</i> , <i>Iodine</i> and Bromine.
Hydrogen Peroxide	A bleaching/oxidising agent used as a disinfectant.
Hypochlorite	Usually sodium hypochlorite, solutions of hypochlorite are oxidising disinfectants producing the biocidally active hypochlorite anion and hypochlorous acid.
Iodine	A <i>Halogen</i> similar to <i>chlorine</i> but more stable and less reactive.
Iodophor	<i>Iodine</i> in solution of surfactant with stabiliser.
Media	A nutrient rich solid or liquid (agar or broth) used to grow <i>micro-organisms</i> .
Microbe	An alternative expression for <i>micro-organism</i> .
Micro-organism	A microscopic entity capable of replication. It includes bacteria, viruses and the microscopic forms of algae, fungi and <i>protozoa</i> .
Motile	Describes organisms which can move independently.
Mould	Any fungus that forms visible <i>mycelia</i> growth.
Mycelium	A visible mass of tangled filaments of fungal growth.
Nucleic Acids	An organic compound composed of nucleotides <i>DNA</i> and <i>RNA</i>
Oocyst	An oval body in the reproduction cycle of certain <i>protozoa</i> .
Pathogen	An organism that causes <i>disease</i> animals, plants or <i>micro-organisms</i> .
Peracetic acid	Acid produced by combination of acetic acid and <i>hydrogen peroxide</i> .
Phenol	Chemical derived from coal tar. Used as a <i>disinfectant</i> .
Preservation	Maintaining numbers of <i>micro-organisms</i> at low levels i.e. low enough to make food safe to eat or to prevent spoilage.
Protozoa	Unicellular <i>micro-organisms</i> . Classified in the Animal Kingdom.
Quaternary Ammonium	
Compound	A <i>cationic surfactant</i> with strong bactericidal but weak detergent properties.
RNA	Ribonucleic acid involved in protein synthesis.
Sanitization	A term used mainly in the food and catering industry. A process of both cleaning/disinfecting utensils, equipment and surfaces.
Sanitizer	A chemical agent used for <i>sanitization</i> .

SPOTLESS MICROBIOLOGICAL PROFILE

APPENDIX II

GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS

Somatic	Refers to the “body” or main part of a cell. Does not include reproductive structures such as <i>spores</i> .
Species	Fundamental rank of the classification system. (Two or more species grouped together are classed as a <i>genus</i>).
Spirochete	A twisted bacterial rod with a flexible cell wall containing axial filaments for <i>motility</i> .
Spore	A highly resistant structure formed from <i>somatic</i> cells in several genera of bacteria. e.g. <i>Bacillus</i> . Also a reproductive structure formed by fungi.
Sporicide	A chemical agent which, under defined conditions, is capable of killing bacterial <i>spores</i> .
Sterile	Free from all living <i>micro-organisms</i> .
Sterilization	A process which renders an item <i>sterile</i> .
Sterilizing agent	An agent or combination of agents which under defined conditions leads to <i>sterilization</i> .
Surfactant	A surface active agent.
Toxin	A poisonous substance produced by a <i>species</i> of <i>micro-organism</i> .
Vibrio	A form of <i>bacteria</i> occurring as a curved rod.
Virucide	A chemical agent which, under defined conditions, is capable of killing or inactivating <i>viruses</i>
Virus	A non-cellular entity consisting of protein and <i>nucleic acid</i> . Can only replicate after entry into specific types of living cell.
White fluids	Prepared by emulsifying tar fractions.
Zoonosis	Any <i>disease</i> which can be transmitted from animal to man and vice-versa