Standard Criteria

‘Recognised – Environmental Credentials Scheme’

for Commercial Cleaning, Hygiene and Related Products

May 2022

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Products for healthy living and a quality lifestyle

Revision history

Version	Notes
Original	Published December 2011, Reviewed by Expert Panel (see Footnote 1, page 3)
March 2012	See *Accord Actions in response to Expert Panel Recommendations* for all changes made (available at accord.asn.au/sustainability/recognised/recognised-documents/)
December 2012	Editorial changes made i.e. for the purpose of further clarification for requirement in response to suggestions/recommendations of the expert reviewer Prof. Barry Hart's Review of the March 2012 criteria. See *Accord Actions in response to Professor Hart's Review of March 2012 Revised Criteria* (available at accord.asn.au/sustainability/recognised/recognised-documents/)
July 2015	*Editorial change:* Clarification of requirements re 6.2.1 Product Concentration
May 2016	Addition of new section 6.4 Microorganisms, setting out requirements for products in which microorganisms are present as active agents – reviewed by Jennifer Wan, Eurofins AMS Laboratories (review and response available at accord.asn.au/sustainability/recognised/recognised-documents/) Addition of GHS equivalents to the existing NOHSC references in Section 6.3. *Editorial changes:* Addition of Revision history Addition of information regarding the Standard Criteria review process Addition of further abbreviations and definitions Update of weblinks as necessary Inclusion of GHS categories for sections 6.3.2, 6.3.5 and 6.3.6 Clarification of requirements re: 6.2.1 Concentration 6.2.4 VOCs 6.3.3 Fragrances
July 2018	Addition of new section *6.2.10 Microbeads*, prohibiting solid plastic microbeads in industrial hand cleaners *Editorial changes:* Expansion of language to include additional explicit references to New Zealand 6.2.4 VOCs – update to reflect new 'Workplace exposure standards for airborne contaminants' (2018) in place of 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment' 6.2.5 Phosphorus – update of figures and rationale 6.2.9 Packaging – update to include reference to New Zealand, and editorial to Rationale to emphasise the need for flexible approaches to minimising packaging waste

	6.3.2 – removal of all references to NOHSC 6.3.5 – removal of reference to NOHSC 6.3.6 – removal of reference to NOHSC
July 2021	Changes to requirements of section *6.2.9 Packaging* to align with the 2025 National Packaging Targets *Scope:* Modification of title to 'Commercial Cleaning **and Related Products**' [change bolded] to recognise that some products without a cleaning function complement the action of cleaning products and are often supplied in conjunction with cleaning products Reflection of the above change throughout the document text Section 3 Scope – inclusion of 'related, complementary products without a cleaning function, such as hand moisturisers/barrier creams' 6.2.1 – addition of 'moisturisers/barrier creams' to the list of product categories that are exempt from the concentration requirement to allow their consideration as ready-to-use products, and inclusion of the rationale for this addition 6.2.1 – change of 'liquid hand soaps' to 'liquid hand hygiene products' *Editorial:* References to NICNAS changed to AICIS Reformatting of units Reformatting of all quotation marks from double to single 6.3.2 – addition of rationale relating to endocrine disruptors
September 2021	6.2.9 – inclusion of the definition of 'primary packaging' and expansion of the rationale to clarify the scope of the packaging requirements
May 2022	6.2.1 – inclusion of liquid body wash products as exempt from the concentration requirements given their similar delivery mode and function to liquid hand wash *Editorial:* Modification of title and wording throughout to 'Commercial Cleaning**, Hygiene** and Related Products' [change bolded] to reflect that cleaning and hygiene products have different functions. Please note that both product categories have been eligible for accreditation under Recognised® since the inception of the scheme.

The Standard Criteria are subject to annual review by the Recognised Technical Working Group (TWG). Publication of a revised version is only by majority agreement and may not be required every year. If required, special revision of the Standard Criteria may be required in addition to the annual review. The Standard Criteria are also considered by the third-party assessor to ensure that the criteria are objectively assessable, and to confirm that interpretation of the criteria is as intended.

Revisions can be of three types:

i. Changes to requirements that products need to meet, including addition of new sections of criteria that may relate only to certain types of products. In this case, review of the revised criteria by a suitable independent expert is required prior to finalisation of the Standard Criteria.

ii. Editorial changes, for example to remove any ambiguity in the requirements or better enable applicants to determine whether their products meet the criteria prior to lodging an application. In this case, no review of the revised criteria by an independent expert is required.

iii. Changes to the scope of products that can be considered for licencing under Recognised®.

Contents

1. INTRODUCTION

This voluntary Scheme sets out the requirements for commercial cleaning, hygiene and related products in order to be licensed to use the *'Recognised – Environmental Credentials Scheme'* product label logo (see Annex 1 for logo design).

Commercial cleaning, hygiene and related products are used for commercial, public and institutional applications and play a vital role in keeping these areas clean, hygienic and comfortable. Good hygiene is essential for the protection of public health, helping to prevent the transmission of disease and thereby reducing the burden on the health care system whilst increasing productivity. Related products are those that complement the action of, and are often supplied in conjunction with, cleaning and hygiene products but that do not have a cleaning or hygiene function; the suitability of such products for inclusion in the Recognised® scheme is determined on a case-by-case basis.

Although efficacy is the number one consideration for commercial cleaning, hygiene and related products, this Scheme recognises and addresses the increasing demand for products with preferable environmental characteristics by defining the characteristics of such products.

However, this Scheme also identifies that the proliferation of environmental claims and eco-labels in the marketplace has contributed to a lack of clarity regarding environmental preferability. Therefore, this Scheme seeks to overcome consumer uncertainty by providing open and transparent rationalisation for selection criteria inclusion, requirements and exceptions. This Scheme also excludes criteria that are not relevant to commercial cleaning, hygiene and related products and explains the basis for these exclusions.

Products that are granted a licence to use the *'Recognised – Environmental Credentials Scheme'* logo are listed separately in the Scheme's online Register at accord.asn.au/sustainability/recognised/register-recognised-products/.

2. BACKGROUND

Commercial cleaning, hygiene and related products are formulated from chemical ingredients. The major categories of chemical ingredients are surfactants, builders, solvents and abrasives. Chemicals across all of these classes can have potential environmental impacts in their production, distribution, use and disposal. To reduce these potential impacts, commercial cleaning, hygiene and related product ingredients are required to:

- be concentrated,
- have low toxicity to aquatic organisms, or to rapidly biodegrade,
- not be bioaccumulative;

and meet specific requirements for:

- dyes and colorants,
- volatile organic compounds, and
- packaging.

While this is primarily an environmental Scheme, the potential impact of commercial cleaning, hygiene and related products on human health is recognised as an important aspect. Limitations and/or disclosure criteria are set for the use of chemical ingredients that are highly toxic, known or suspected carcinogens, mutagens, reproductive toxins, fragrances and sensitisers.

This Scheme also recognises that Australia and New Zealand have rigorous regulatory systems for the protection of human health and therefore does not duplicate requirements and protections already in existence. Such a practice would be seeking to leverage compliance, which is a legal and mandatory requirement, for commercial advantage. Rather, it is expected that the Applicant (and contract manufacturer, for products where the Applicant is not also the manufacturer) complies with all relevant environmental and human health regulations (including labour, anti-discrimination and safety regulations). Any non-compliance with regulatory requirements should be dealt with by relevant regulatory authorities.

Relevant Australian regulatory bodies include AICIS (Australian Industrial Chemicals Introduction Scheme), the TGA (Therapeutic Goods Administration), APVMA (Australian Pesticides and Veterinary Medicines Authority), the ACCS (Advisory Committee on Chemicals Scheduling), FSANZ (Food Standards Australia New Zealand) and the Australian Competition and Consumer Commission (ACCC).

Relevant New Zealand regulatory bodies include the NZ EPA (Environmental Protection Authority), WorkSafe, Ministry of Primary Industries and the Commerce Commission (equivalent of ACCC).

3. SCOPE

This Scheme establishes requirements for commercial cleaning, hygiene and related products, that is, products formulated for maintaining hygienic conditions in workplaces, institutions, warehouses and industrial facilities.

This Scheme recognises that commercial cleaning, hygiene and related products have specific requirements and are often subject to higher performance expectations than domestic-use products. Commercial cleaning and hygiene products may contain harsher chemicals or higher concentrations of active ingredients than domestic-use products due to the more stringent hygiene requirements for their applications. Accordingly, the Scheme is exclusive of all products that are primarily designed for household use, as it may be inappropriate to apply uniform criteria across both sectors.

This Scheme includes, but is not limited to, the following products for use in commercial applications:

- hard surface cleaning products including general purpose cleaners, bathroom cleaners, toilet bowl cleaners, glass cleaners, floor cleaners and oven cleaners
- carpet and upholstery cleaners
- laundry detergents
- dishwashing products
- automotive cleaners
- sanitisers
- hand hygiene products
- related, complementary products without a cleaning function, such as hand moisturisers/barrier creams

In addition, this Scheme is specific to commercial cleaning, hygiene and related products and their packaging only, not to whole-of-business sustainability practices. Whilst it is anticipated that applicants of environmentally preferable products are committed to continual improvement in sustainability, this is beyond the scope of this product-based eco-label approach. Accordingly, it is a requirement of this Scheme that all marketing and labelling associated with use of the *'Recognised – Environmental Credentials Scheme'* logo does not imply or attempt to imply that the logo preferentially endorses a company's operations and manufacturing processes.

Finally, this Scheme has been developed in recognition that the vast majority of commercial cleaning and hygiene products enter sewage treatment systems following use and disposal. This Scheme does not, nor can it, consider all potential disposal scenarios including accidental spills and intentional misuse.

4. GOVERNANCE and PROCESS

The Scheme's operational responsibilities are summarised in **Figure 1**.

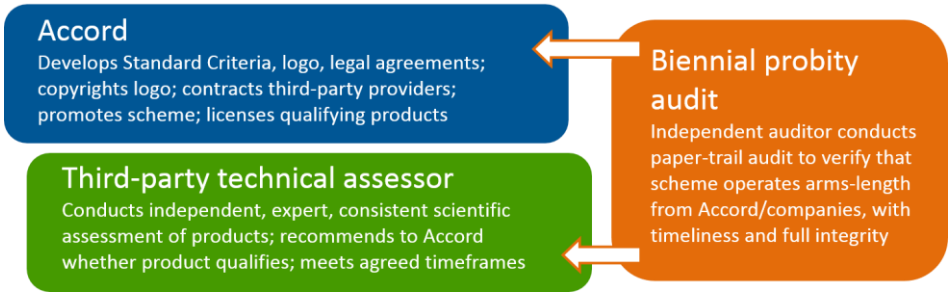

Figure 1

Products are subject to expert, independent, third-party scientific evaluation, with recommendation for approval for use of the *'Recognised – Environmental Credentials Scheme'* logo (see Annex 1) based on weight of available evidence (e.g. test results and modelling). Use of the logo does not imply that all tests included or referenced in Annex 2 have been performed.

The criteria comprising this Scheme have been reviewed by suitable independent experts. This is to verify that the criteria are able to adequately differentiate commercial cleaning, hygiene and related products with preferable environmental characteristics for the purposes described in the Scheme.[1]

Expert reports and Accord's actions in light of the recommendations contained within these reports are publicly available.[2]

Following third-party recommendation to Accord that the product satisfies the requirements of the Standard Criteria, a licence to use the *'Recognised – Environmental Credentials Scheme'* logo (see Annex 1) on the product will be granted for a term of 5 years. During this period, the company must sign and return an annual 'Confirmation Notice' to Accord, declaring that there has been no change to the formulation, and that they have not become aware of any new information that could potentially alter the environmental preferability of the product.

Applications to this Scheme are made in respect to a formulation, with all products sharing that formulation covered by the one Application. Advice on the variation to a formulation that is permissible under an existing Licence, and regarding when a new application is required, is set out in the document *Guidance Note on Formulation Variations*.[2]

The application and assessment process is described on page 4. Please also refer to the document *Guidance on Applying for the Recognised – Environmental Credentials Scheme*.[2]

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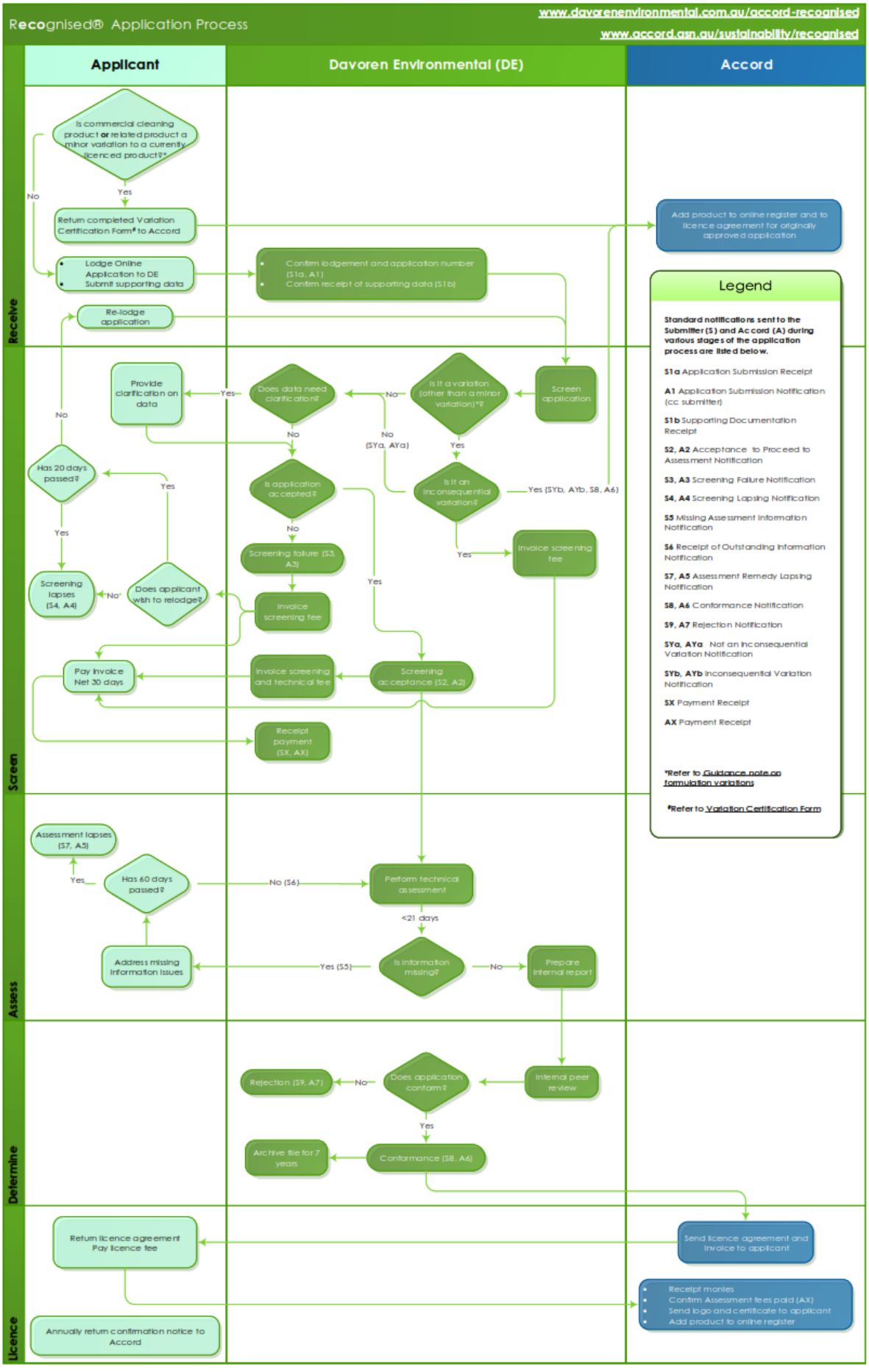
[1] The original Expert Panel comprised Professor Barry Hart, Director, Water Science Pty Ltd and Monash University, Professor Michael R. Moore, University of Queensland, Water Quality Research Australia, and Dr Margaret Hartley, Formerly Director, Office of Chemical Safety and Principal Scientific Advisor, Australian Government Department of Health and Ageing.

[2] See http://accord.asn.au/sustainability/recognised/recognised-documents/


Recognised® Application Process
www.davorenenvironmental.com.au/accord-recognised
www.accord.asn.au/sustainability/recognised
Applicant
Davoren Environmental (DE)
Accord
Receive
Screen
Assess
Determine
Licence
Is commercial cleaning product or related product a minor variation to a currently licenced product?*
Yes
No
Return completed Variation Certification Form# to Accord
Add product to online register and to licence agreement for originally approved application
Lodge Online Application to DE
Submit supporting data
Confirm lodgement and application number (S1a, A1)
Confirm receipt of supporting data (S1b)
Re-lodge application
Legend
Standard notifications sent to the Submitter (S) and Accord (A) during various stages of the application process are listed below.
S1a Application Submission Receipt
A1 Application Submission Notification (cc submitter)
S1b Supporting Documentation Receipt
S2, A2 Acceptance to Proceed to Assessment Notification
S3, A3 Screening Failure Notification
S4, A4 Screening Lapsing Notification
S5 Missing Assessment Information Notification
S6 Receipt of Outstanding Information Notification
S7, A5 Assessment Remedy Lapsing Notification
S8, A6 Conformance Notification
S9, A7 Rejection Notification
SYa, AYa Not an Inconsequential Variation Notification
SYb, AYb Inconsequential Variation Notification
SX Payment Receipt
AX Payment Receipt
*Refer to Guidance note on formulation variations
#Refer to Variation Certification Form
Screen application
Is it a variation (other than a minor variation)*?
No (SYa, AYa)
Yes
Does data need clarification?
Yes
No
Provide clarification on data
Is it an inconsequential variation?
Yes (SYb, AYb, S8, A6)
Yes
Invoice screening fee
Is application accepted?
No
Screening failure (S3, A3)
Has 20 days passed?
Yes
No
Screening lapses (S4, A4)
Does applicant wish to relodge?
No*
Yes
Invoice screening fee
Yes
Pay Invoice Net 30 days
Invoice screening and technical fee
Screening acceptance (S2, A2)
Receipt payment (SX, AX)
Assessment lapses (S7, A5)
Yes
Has 60 days passed?
No (S6)
Perform technical assessment
<21 days
Address missing information issues
Yes (S5)
Is information missing?
No
Prepare internal report
Internal peer review
Does application conform?
No
Rejection (S9, A7)
Yes
Conformance (S8, A6)
Archive file for 7 years
Return licence agreement
Pay licence fee
Send licence agreement and invoice to applicant
Receipt monies
Confirm Assessment fees paid (AX)
Send logo and certificate to applicant
Add product to online register
Annually return confirmation notice to Accord

5. ABBREVIATIONS and DEFINITIONS

ACCS: Advisory Committee on Chemicals Scheduling

AICIS: Australian Industrial Chemicals Introduction Scheme

AOAC: Association of Official Analytical Chemists

Applicant: A brand owner of commercial cleaning, hygiene and related products who wishes to obtain Accreditation under the '*Recognised – Environmental Credentials Scheme'*.

ASTM: American Society for Testing and Materials

BCF: 'Bioconcentration factor' is a measure of bioconcentration, the process by which the concentration of a chemical in an aquatic organism achieves a level that exceeds the concentration of that chemical in the water, as a result of exposure of the organism to the chemical via the water but excluding exposure via the diet. BCF is the ratio of the concentration of a chemical in/on the aquatic organism to the concentration of the chemical in the water at steady state.

CARB: California Air Resources Board

CESIO: European Committee of Organic Surfactants and their Intermediates

CFU: Colony forming units, used as an estimate of the number of viable microorganism cells in a sample.

EC: European Commission

Enzyme: A protein that acts as a catalyst in biochemical reactions. Each enzyme is specific to a particular reaction or group of similar reactions.

EPA: Environmental Protection Agency (USA)

EPI Suite™: Estimation Program Interface, a windows-based screening tool developed by US EPA and Syracuse Research Corp. (SRC).

GHS: Globally Harmonised System for the Classification and Labelling of Chemicals[3]

GMO: Genetically modified organism, an organism that has been modified by gene technology or that has inherited particular traits from an initial organism that occurred in the initial organism because of gene technology.

HCIS: Hazardous Chemical Information System

IARC: International Agency for Research on Cancer

IFRA: International Fragrance Association

ISO: International Organization for Standardization

[3] On 1 January 2021, Australia began a two-year transition to the 7th revised edition of the GHS (GHS 7). During the transition, manufacturers and importers may use either GHS 3 or GHS 7 to prepare classifications, labels and SDS for hazardous chemicals. From 1 January 2023, only GHS 7 may be used. GHS 7: https://unece.org/ghs-rev7-2017; GHS 3: http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html

K_{ow}: Octanol/water partition coefficient, describing the ratio of the concentration of a chemical in octanol and in water.

L/E/IC50: Concentration of a substance that is lethal/effective/inhibitory to 50% (one half) of test organisms after a specified time (e.g. 48 h, 96 h etc).

$mg \cdot L^{-1}$: Milligrams per litre

Microorganisms: Organisms of microscopic size including bacteria, fungi, viruses and protozoa

NPI: National Pollutant Inventory

NZ EPA: New Zealand Environmental Protection Authority

OECD: Organisation for Economic Cooperation and Development

OPPTS: Office of Prevention, Pesticides and Toxic Substances (USA)

Organic chemical: A carbon-based chemical compound.

Preservative: A chemical substance added to a product to prevent spoilage due to microorganisms or undesirable chemical reaction, primarily oxidation.

RIFM: Research Institute for Fragrance Materials

SDS: Safety Data Sheets

Spores: Dormant microorganisms which only become active after germinating; a resistant form of the organism often adopted in adverse conditions

SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons

TGA: Therapeutic Goods Administration

TWG: Technical Working Group

VOC: Volatile Organic Compound

WDCM: World Data Centre for Microorganisms

WHO: World Health Organization

YOPI: Vulnerable populations i.e. Young (under 5), Old (over 65), Pregnant, Immunocompromised.

6. STANDARD CRITERIA

6.1 General principles

6.1.1 Product performance

Products must be fit for purpose, i.e. satisfying health, safety and consumer performance needs. The products must meet or exceed the requirements of the relevant Australian or New Zealand Standard for performance, if there is one.

> *Rationale: The market is the most efficient selector of effective products. Those that do not perform are weeded out; further demonstrations of efficacy are therefore unnecessary.*

6.1.2 Product ingredient disclosure

Confidential, full-formulation disclosure is required to the third-party certifier.

> *Rationale: Disclosure of specific ingredients is already mandated in regulation. For situations where customers have specific requirements, applicants agree to discuss disclosure of specified ingredients on a case-by-case basis. Additional formulation information disclosure poses potential risks to confidential formulation information.*

6.2 Environmental criteria

With the exception of section 6.2.2 criteria (aquatic toxicity, persistence and bioaccumulation), which relate to undiluted product/product components, all other environmental criteria relate to the in-use product, as per label directions, rather than the product concentrate. Where multiple dilution factors are specified for different product applications, these criteria relate to the most concentrated dilution.

> *Rationale: Commercial cleaning and hygiene products enter the environment in the form in which they are used. For the vast majority of contexts, the immediate receiving environment for commercial cleaning and hygiene products post-use is the sewage/wastewater system operating in the specific area of use. This Scheme does not, nor can it, consider all potential disposal scenarios including accidents and intentional misuse.*

6.2.1 Product concentration

Liquid products must be concentrated to the greatest degree practicable. The required dilution factor must be clearly stated on the product label.

In general, ready-to-use products are not eligible for licencing under this Scheme unless there is a clear technical reason preventing dilution. On this basis, the only product categories that can be assessed as ready-to-use products and are exempt from the concentration requirement are:

- toilet bowl cleaners
- liquid hand hygiene/body wash products
- abrasive cleaners
- oven cleaners
- moisturisers/barrier creams

Products (in any product category) that are not miscible with water are also exempt from the concentration requirement and may be assessed as ready-to-use.

> *Rationale: Concentrated products have a lower impact on the environment because they reduce the volume of packaging required and the volume of product being transported, translating to savings in fuel and greenhouse gas emissions.*
>
> *Exemptions are based on the significant adverse effect on product hygiene performance, stability or customer safety arising from dilution upon use.*
>
> ***Toilet bowl cleaners** are specifically formulated to achieve a desired viscosity for vertical cling in toilet bowls. Dilution of these products may result in reduced product performance. Also, as concentrated products these would be very viscous and may not be easily mixed manually.*
>
> ***Liquid hand hygiene/body wash products** are specifically formulated to achieve a desired viscosity for pumping. Allowing the consumer to dilute this type of product may also introduce bacterial contamination and reduce the efficacy of preservative.*
>
> ***Abrasive cleaners** are specifically formulated with the correct viscosity to suspend abrasives.*
>
> ***Oven cleaners** are specifically formulated to achieve a viscosity/clinginess that is critical to product performance.*
>
> ***Moisturisers and barrier creams** are specifically formulated as emulsions; dilution is not applicable to this category.*

6.2.2 Aquatic toxicity, persistence and bioaccumulation

Each of the undiluted chemical product components, or the undiluted whole product, must meet the requirements for aquatic toxicity, persistence and bioaccumulation set out in **Table 1** [adapted from the EPA's Safer Choice Program '*Master Criteria for Safer Chemical Ingredients*' (formerly **the** Design for the Environment 2009 '*General Screen for Safer Ingredients'*), Table 12[4]].

> *Rationale: Table 1 recognises that the potential environmental impact of an ingredient or product is a function of its toxicity, the time for which it persists in an environment, whether its biodegradation products are themselves harmful in that environment, and whether it bioaccumulates in organisms. These properties must be considered in relation to each other for a meaningful evaluation of environmental impact. For example, a product that is highly toxic but rapidly breaks down to harmless products in the aquatic environment will have minimal adverse effect on aquatic organisms.*

The vast majority of commercial cleaning and hygiene products enter a wastewater treatment system following use. In these aquatic environments, the product exists not as a single entity but as its constituent ingredients. Following treatment, which for the wastewater containing commercial cleaning or hygiene product waste most commonly occurs at a sewage treatment plant, effluent is discharged to one of several possible destinations, including ocean, inland waterway, or reuse on land.

[4] https://www.epa.gov/sites/production/files/2013-12/documents/dfe_master_criteria_safer_ingredients_v2_1.pdf

For cases where use of the product will or is likely to result in direct release of the product to the environment, and where such practice is permitted according to all relevant regulatory and legal requirements, the applicant is advised to refer to Section 7.

Table 1: Environmental toxicity and fate (persistence and bioaccumulation) criteria

Acute Aquatic Toxicity[1, 2, 3] (L/E/IC50)	Persistence (measured in terms of level of biodegradation)[4]	Bioaccumulation potential[9]
If $\leq$ 1 mg·L^{-1}…	…then may be accepted if the component meets the 10-day window[5,6] as measured in a ready biodegradation test[7] without degradation products of concern[8]…	…and is not expected to bioaccumulate
If > 1 mg·L^{-1} and $\leq$ 10 mg L^{-1}…	…then the component must meet the 10-day window[6] as measured in a ready biodegradation test[7] without degradation products of concern…	
If > 10 mg·L^{-1} and $\leq$ 100 mg·L^{-1}…	…then the component must meet the 28-day pass level as measured in a ready biodegradation test[7] without degradation products of concern…	
If $\geq$ 100 mg·L^{-1}…	…then the component need not meet the 28-day pass level as measured in a ready biodegradation test[7] if there are no degradation products of concern and half-life is <60 days…	

Specific notes regarding Table 1:

1. Acute toxicity data is specified as this data is often more readily available than chronic toxicity data, and because there is a predictable relationship between acute and chronic toxicity. (See footnote 5 to Table 12 of the following link: www.epa.gov/sites/production/files/2013-12/documents/dfe_master_criteria_safer_ingredients_v2_1.pdf) Acute toxicity data is required for algae, aquatic invertebrates and freshwater fish. The lowest value (highest toxicity) is used for evaluation.
2. Where available, whole-product toxicity test data will be considered in preference to individual component/ingredient data.
3. For component-based assessment, the percentage at which each component is present in the product formulation is factored in when applying the requirements of Table 1. For example, if ethanol is present in a formulation at 5% of the total volume, the toxicity assessment factors in that there is 5% ethanol rather than assessing as if the product was 100% ethanol. This is essential in ensuring that component-based and whole product assessments are equitable, because whole product data is by default based upon the sum effects of all individual components at the levels present in the formulation.
4. Biodegradation by definition only applies to organic compounds. Therefore, inorganic compounds need only comply with the bioaccumulation potential requirements.
5. Meeting the 10-day window for the ready biodegradation test is very conservative for most commercial products, the vast majority of which will enter sewage treatment systems.

6. For some mixtures of structurally similar chemicals e.g. surfactants, testing may be performed on the mixture. In such circumstances where it is anticipated that a sequential biodegradation of the individual structures is taking place, the 10-day window result is deemed inappropriate to use to interpret the result of the test. (See OECD Guidelines for the Testing of Chemicals, Section 3, Part 1, Paragraph 43.) For such mixtures with acute aquatic toxicity $\leq$ 10 mg·L^{-1}, the third-party assessor will make an expert determination regarding the acceptability of the data set.
7. In recognition that the environment is a highly complex system, expert judgment by the third-party assessor with full rationalisation and data disclosure may be acceptable for ingredients or products which do not meet the ready biodegradability requirements of Table 1. For example, other types of test data that may be considered in an assessment of the potential environmental hazard or risk include sewage treatment plant (STP) simulation data, inherent biodegradability, anaerobic biodegradability, or biodegradability in seawater and abiotic transformation. (See OECD Guideline for Testing of Chemicals: Proposal for Revised Introduction to the OECD Guidelines for Testing of Chemicals, Section 3 (2005), www.oecd.org/dataoecd/55/12/34898616.pdf).
8. Degradation products of concern are defined by the US EPA as 'compounds with high acute aquatic toxicity (L/E/IC50 $\leq$ 10 mg·L^{-1}) which mineralise < 60% in 28 days'.
9. Consideration of bioaccumulation potential is not required for surfactants due to the difficulty in measuring the octanol/water partition coefficient (K_{OW}) for these components which sit at the octanol/water interface.

General notes regarding Table 1

10. Ingredients added at < 0.1% or as preservatives are exempt from Table 1 requirements.
11. Microorganisms (or viable spores) present as active ingredients are exempt from Table 1 requirements but must satisfy the criteria in Section 6.4. Microorganism-derived products i.e., enzymes must meet the requirements of Table 1 if present at $\geq$ 0.1%.
12. Fragrance ingredients are only assessed against Table 1 requirements when the in-use concentration is $\geq$ 0.1% (see Section 6.3.3)
13. The criteria in Table 1 cover ingredients such as optical brighteners and biocides, which other eco-label schemes may categorically ban without consideration of the individual ingredient characteristics.
14. The criteria in Table 1 provide a highly conservative approach for the vast majority of commercial cleaning, hygiene and related products. The assessment is performed on the undiluted ingredients or whole product, but in most real-life contexts these components will be diluted prior to product use, diluted subsequently as they enter the wastewater system, and then diluted finally as they enter receiving environmental waters following treatment. Therefore, any toxic effects of the undiluted ingredients will be significantly mitigated by the time they reach environmental waters.
15. This Scheme does not, nor can it, take into account all potential misuse scenarios, including accidental or intentional unregulated release to natural waterways.

Hierarchy of data preferability for Table 1

1. Existing primary experimental test data

Please see Annex 2 for a list of tests to provide primary experimental data for aquatic toxicity, persistence and bioaccumulation.

As described in Note 2 to Table 1, whole-product toxicity test data will be considered in preference to individual ingredient toxicity data where it is available.

2. Published data

Data published in peer-reviewed literature or databases, for example:

- Detergents Ingredients Database Part A: List of ingredients 2016 (https://ec.europa.eu/environment/ecolabel/documents/DID%20List%20PART%20A%202016%20FINAL.pdf)
- CESIO RECOMMENDATIONS for the harmonized classification and labelling of surfactants 2017 (www.cesio.eu/images/content/CESIO_CL_Recommendations_Brochure_Updated.pdf)

3. Modelled data

In the absence of published or experimental data, modelled data from the EPA's Estimations Programs Interface for Windows (EPI Suite™) may be considered. EPI Suite™ interfaces numerous models to provide users with estimates of a chemical's physical/chemical and environmental fate properties . Amongst these, of relevance to sourcing modelled data for ecotoxicity, persistence and bioaccumulation are:

- BCFBAF - estimates bioconcentration factor (BCF) and biotransformation rate (kM)
- BioHCwin - estimates biodegradation half-life of hydrocarbons
- BIOWIN - estimates aerobic and anaerobic biodegradation probability
- ECOSAR - estimates aquatic toxicity (LD50, LC50)
- KOWWIN - estimates octanol-water partition coefficient (Kow)

Rationale for hierarchy: In the instance of existing, published and peer reviewed data, further testing is unnecessary and wasteful. However, where existing primary experimental data exists it is considered the most preferable and reliable information source.

6.2.3 Dyes and colorants

No dye or colorant may have any of the following metals intentionally added during its production: arsenic, cadmium, cobalt, hexavalent chromium, lead, manganese, mercury, nickel, and selenium.

Each dye or colorant shall be used in the minimal concentration necessary for maintenance of stable colour in the diluted product.

Each dye or colorant that is present at $\geq$ 0.1% is subject to Table 1 requirements. (Note: each dye or colorant that is present at < 0.1% is exempt from Table 1 requirements according to General note 10 regarding Table 1.)

In addition, in order to be exempt from Section 6.3 requirements, each dye or colorant shall meet one of the following:

- Listed by Commission Regulation (EU) No. 1129/2011, Annex II, Part B (https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32011R1129)
- Listed by Food Standards Australia New Zealand (FSANZ) in Australia New Zealand Food Standards Code, Schedule 16 – *Types of substances that may be used as food additives* (www.legislation.gov.au/Details/F2019C00128)

- Be a natural colour.

  Rationale: Dyes and colorants are ingredients with the sole purpose of modifying the product colour. Dyes and colorants are important components of commercial cleaning and hygiene product formulations due to their role in product identification and differentiation, thus protecting worker safety.

  It must be noted that colorants and dyes are usually in the formulation at very low levels (usually < 0.01% w/v).

6.2.4 Volatile organic compounds

VOC content in the in-use product (most concentrated dilution, excluding recommendations for incidental use of a concentrated product to deal with limited special applications such as hard-to-remove soils or stains) is limited to the levels prescribed below:

- Bathroom and tile cleaners: 5% (excepting aerosols: 7%)
- General purpose cleaners: 10%
- Glass cleaners: 8% (excepting aerosols: 12%)
- Oven cleaners: 5% (liquids) or 8% (aerosols/pumps)

(From US Code of Federal Regulation, Title 40, Part 59 (40 CFR 59), Subpart C: National Volatile Organic Compound Emission Standards for Consumer Products, Table 1; found at www.law.cornell.edu/cfr/text/40/part-59/subpart-C/appendix-Table1*)*

For products outside the above categories, the VOC level requirement for general purpose cleaners (i.e. 10%) will apply.

According to *40 CFR 51.100 (s)*, a VOC is 'any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions'. Exempted compounds are listed in parts (1) and (5). (See www.law.cornell.edu/cfr/text/40/51.100.)

In accordance with *40 CFR 59.203 (f)* solvents may also qualify as 'VOC-exempt' and the VOC content limits prescribed above shall not include any VOC that:

(1) Has a vapour pressure of less than 0.1 millimetres of mercury at 20 degrees Celsius; or

(2) Consists of more than 12 carbon atoms, if the vapour pressure is unknown; or

(3) Has a melting point higher than 20 degrees Celsius and does not sublime (i.e., does not change directly from a solid into a gas without melting), if the vapour pressure is unknown.

(See www.law.cornell.edu/cfr/text/40/59.203)

A solvent may also be considered for VOC exemption under California Air Resources Board (CARB) criteria. (From Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Consumer Products, § 94508 (83); found at ww2.arb.ca.gov/sites/default/files/2020-12/cp_all_regs_5-2019.pdf.)

Rationale: Volatile organic compounds, or VOCs, are compounds released into the outside air that can photochemically react to cause ozone or smog. Some VOCs also contribute to poor indoor air quality, and therefore potentially impact on human health. However, human health

protections exist through the 'Workplace exposure standards for airborne contaminants' 2019, set by Safe Work Australia and agreed to by the States and Territories.

https://www.safeworkaustralia.gov.au/system/files/documents/1912/workplace-exposure-standards-airborne-contaminants.pdf

6.2.5 Phosphorus

The Licence Holder for an accredited product under this Scheme must disclose details of the phosphorus content of the product upon request by a customer or interested party.

Alternatively, a 'No intentionally added phosphorus' claim can be made for commercial cleaning, hygiene and related products that have been formulated without phosphorus (in any form). However, these products may contain trace amounts of incidental phosphorus.

Rationale: Phosphorus that enters inland or static waterways can contribute to eutrophication. However, phosphorus content is not an important consideration when treated waste is discharged to the ocean.

In Australia, for example, most commercial cleaning and hygiene product waste will be treated at a sewage treatment plant. As a result, only very low levels of phosphorus from commercial cleaning products reach waterways because phosphorus is removed from wastewater to levels that are acceptable to Australian environmental regulators. Indeed, phosphorus emissions to water showed a decrease of about 9% between 2005/6 and 2006/7 according to the latest NPI Report.[5] Additionally, in Australia the majority of treated wastewater is discharged to the ocean,[6] and so phosphorus will have negligible impact.

In addition, for cases where sewage treatment effluent is discharged to inland waterways, this sewage generally contributes much less to inland waterway phosphorus load than diffuse sources, which include agricultural and urban run-off.[7,8] It is also thought that extreme weather events, such as storms, lead to the major contributions of nutrients (i.e. phosphorus and nitrogen) to Australian waterways.[9]

With the exception of toilet bowl cleaners, laundry detergents and dishwash detergents that may have intentionally added phosphorus, phosphorus is not present to any great extent in commercial cleaning, hygiene and related products.

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[5] National Pollutant Inventory summary report 2006–07, Department of the Environment, Water, Heritage and the Arts, 2009

[6] For example, over 95% of Sydney Water's treated wastewater is discharged to the ocean. (Calculated from www.sydneywater.com.au/SW/water-the-environment/how-we-manage-sydney-s-water/wastewater-network/index.htm)

[7] For example, diffuse sources (not sewage) are estimated to contribute 70–80% of the phosphorus load in the Hawkesbury-Nepean catchment. (Source: The State of NSW and Department of Environment, Climate Change and Water NSW 2010, *Lower Hawkesbury-Nepean River nutrient management strategy*, Department of Environment, Climate Change and Water, Sydney (citing Davis *et al.* 1998). www.environment.nsw.gov.au/resources/water/10225hnnms.pdf.

[8] An estimated 65–95% of phosphorus reaching Australian waterways comes from diffuse sources, primarily soil erosion. (Source: Summary Report of Third Year Data 2000–2001, National Pollution Inventory. http://www.npi.gov.au/resource/national-pollutant-inventory-summary-report-third-year-data-2000-2001)

[9] Donnelly, T. H., Barnes, C. J., Wasson, R. J., Murray, A. S. and Short, D. L. 1998, 'Catchment Phosphorus Sources and Algal Blooms – An Interpretive Review', Technical Report 18/98, CSIRO Land and Water.

Intentionally added ingredients are all the constituents of a formulated chemical product with the exception of incidental ingredients. Incidental ingredients are those ingredients that have no technical or functional effect in the product, but which may be present in the product at trace levels as an ingredient of another product ingredient, or as a result of their use during manufacture as processing aids.

6.2.6 Sodium

The Licence Holder for an accredited product under this Scheme must disclose details of the sodium content of the product upon request by a customer or interested party.

Rationale: Sodium is ubiquitous in the environment. For specific situations where the sodium content of the commercial cleaning, hygiene or related product is relevant, applicants agree to disclose the sodium content.

6.2.7 Plant- vs animal- vs petrochemical-based raw materials

This Standard does not stipulate the source of raw materials and ingredients used in commercial cleaning, hygiene and related product formulations.

Rationale: The complexity and breadth of issues associated with ingredient sources cannot be stated simplistically, nor be translated to a simple criterion that guarantees environmental preferability.

Petrochemicals, animal fats and vegetable oils are the three general types of raw materials used to make surfactant ingredients in commercial cleaning, hygiene and related products. There is a general public perception that plant-derived ingredients have less of an impact on the environment than non-renewable petrochemical-based ingredients. Similarly, there is a perception that plant-derived ingredients are more 'natural' or 'environmentally friendly' than animal-derived ingredients.

These perceptions are problematic for a number of reasons:

1. The extraction of all types of raw materials has environmental impacts.

2. It is very difficult to determine whether a surfactant is from plant based, animal based or petrochemical sources as most surfactants have at least some portion that is derived from petrochemical sources.

3. There are concerns that some plant-based ingredients, such as palm oil, are not always produced in an environmentally sustainable manner. Whilst this standard does not endorse or reject these concerns, it illustrates that the choice of the 'best source' ingredients is not clear-cut.

6.2.8 Ozone-depleting compounds

Ozone depleting compounds (EPA Classes I and II – see www.epa.gov/ozone-layer-protection/ozone-depleting-substances) are banned in commercial cleaning, hygiene and related products. Requirements regarding ozone-depleting compounds are therefore irrelevant and have not been included in this Standard.

6.2.9 Packaging

The primary packaging must be reusable, recyclable or compostable in Australia or New Zealand (as applicable) and/or be made from 100% recycled material. The packaging label or accompanying product information must clearly identify the post-use pathway for the packaging. Recyclable packaging must be labelled with the relevant recycling code. Here, the primary packaging is defined as the main product container.

> *Rationale: Reuse or recycling of packaging saves resources. In Australia and New Zealand, where there can be limited availability of certain types of recycled packaging, as well as limited or variable accessibility to recycling services, it is important that packaging requirements are flexible enough to facilitate different approaches to minimising packaging waste.*
>
> *To satisfy this requirement it should be demonstrated that reuse or recycling of the package is viable in the local area.*
>
> *Additionally, in recognition that other components of commercial cleaning, hygiene and related product packaging are often integral to product safety and quality, and that these packaging components can be made from different materials and may have different recycling profiles to the primary container but are only a minor percentage of the overall packaging componentry, they are excluded from the packaging requirements. These include components such as the closure (lid, trigger, etc.) and any inserts/tubing designed for dispensing.*

6.2.10 Microbeads

Solid plastic microbeads (measuring < 5 mm in any dimension) are not permitted.

> *Rationale: Environment Ministers from all Australian State, Territory and Federal Governments agreed on a voluntary phase-out of solid plastic microbeads from certain categories of products, including industrial handwash, by 1 July 2018.*

6.3 Human health criteria

Human health criteria are included in this primarily environmental Scheme in recognition of the potential for human exposure to commercial cleaning, hygiene and related products, in either concentrate or dilute form, through contact with the skin or via inhalation.

The criteria contained in this section do not duplicate existing Australian or New Zealand regulatory requirements which mandate the provision of information via labelling regarding known or suspected human health impacts of ingredients (on the basis of, for example, toxicity, carcinogenicity and mutagenicity). Rather, the criteria in this section prohibit or restrict the use of such substances.

Unless otherwise stated, all human health criteria relate to ingredients in the undiluted product concentrate, in recognition of the fact that human contact with the product is possible before product dilution. This is with the exception of closed-dispensing systems where human contact with the product concentrate is prevented.

No specific criteria relating to endocrine disruptors are included. This is because endocrine disruption is not a toxicological endpoint, but in some cases can lead to toxicological endpoints such as

carcinogenicity, mutagenicity or reproductive toxicity. Carcinogenic, mutagenic or reproductive effects are covered by criteria in sections 6.3.2a, b and c, respectively.

6.3.1 Prohibited substances

All products classified for acute toxicity categories 1–3 under GHS or as Dangerous Goods Division 6.1 (toxic substances) are prohibited.

> *Rationale: GHS acute toxicity categories 1–3 and Dangerous Goods Division 6.1 (toxic substances) comprise substances liable to cause death or serious injury or harm from inhalation, ingestion or absorption through the skin.*

6.3.2 Restricted Substances

6.3.2a Carcinogens

The GHS 3rd and 7th revised edition identifies three categories of carcinogenic substances. **Table 2** lists these categories and the applicable cut-off values under this scheme, which are in line with the Australian implementation of GHS.

Table 2: GHS categories for substances classified as carcinogens and applicable Scheme criteria

	GHS	**Cut-off values (%) for this Scheme**
Known human carcinogens	Category 1A	≤ 0.1 as impurity only
Presumed human carcinogens	Category 1B	≤ 0.1 as impurity only
Suspected human carcinogens	Category 2	≤ 1 of product

Where there is sufficient evidence for carcinogenic effects of an ingredient, expert judgement by the third-party assessor will be applied to ascertain whether the effects are relevant to the use of the cleaning or hygiene product.

Ethanol, for example, is classified as a Group 1 carcinogen (see *Note*, below). However, as there is sufficient evidence linking this carcinogenic effect to a specific route of exposure that is not relevant for cleaning and hygiene products, i.e., ingestion, ethanol in cleaning and hygiene products would pass this criterion.

> *Rationale: Trace amounts of known and presumed human carcinogens are permitted on the basis that raw materials may contain trace impurities that cannot easily be removed. Limited amounts (≤1%) of suspected carcinogens are permitted on the basis that there is insufficient evidence to conclusively demonstrate the carcinogenic potential of these substances on humans, and in light of the fact that the presence of the ingredient at ≤1% in the product concentrate will represent a very low risk to users, especially after dilution.*
>
> *Note: Listing of carcinogens with known, probable or possible human carcinogenic effect as defined by the International Agency for Research on Cancer (IARC) as Group 1, 2A and 2B respectively can be found at http://monographs.iarc.fr/ENG/Classification/index.php.*

6.3.2b Mutagens

The GHS 3rd and 7th revised edition identifies three categories of mutagenic substances. **Table 3** lists these categories and the applicable cut-off values under this scheme, which are in line with the Australian implementation of GHS.

Table 3: GHS categories for substances classified as mutagens and applicable Scheme criteria

	GHS	Cut-off values (%) for this Scheme
Known human mutagens	Category 1A	≤ 0.1 as impurity only
Presumed human mutagens	Category 1B	≤ 0.1 as impurity only
Suspected human mutagens	Category 2	≤ 1 of product

Where there is sufficient evidence for mutagenic effects of an ingredient, expert judgement by the third-party assessor will be applied to ascertain whether the effects are relevant to the use of the cleaning or hygiene product.

Rationale: Trace amounts of known and presumed human mutagens are permitted on the basis that raw materials may contain trace impurities that cannot easily be removed. Limited amounts (≤ 1%) of suspected mutagens are permitted on the basis that there is insufficient evidence to conclusively demonstrate the mutagenic potential of these substances on humans, and in light of the fact that the presence of the ingredient at ≤1% in the product concentrate will represent a very low risk to users, especially after dilution.

6.3.2c Reproductive toxicants

The GHS 3rd and 7th revised edition identifies four categories of reproductive toxicants. **Table 4** lists these categories and the applicable cut-off values under this scheme, which are in line with the Australian implementation of GHS.

Table 4: GHS categories for substances classified as reproductive toxicants

	GHS	Cut-off values (%) for this Scheme
Known human reproductive toxins	Category 1A	≤ 0.3 as impurity only
Presumed human reproductive toxins	Category 1B	≤ 0.3 as impurity only
Suspected human reproductive toxins	Category 2	≤ 3 of product
	Effects on or via lactation	≤ 0.3 as impurity only

Where there is sufficient evidence for reproductive toxicity effects of an ingredient, expert judgement by the third-party assessor will be applied to ascertain whether the effects are relevant to the use of the cleaning or hygiene product.

For example, ethanol is classified as a reproductive toxicant on the basis of epidemiological data derived from human alcohol (i.e. beverage) consumption. However, as these effects are linked only to ingestion of ethanol, ethanol in cleaning and hygiene products would pass this criterion.

Rationale: Trace amounts of known and presumed human reproductive toxicants are permitted on the basis that raw materials may contain trace impurities that cannot easily be removed. Limited amounts (≤ 3%) of suspected reproductive toxicants are permitted on the basis that there is insufficient evidence to conclusively demonstrate the reproductive toxicity potential of these substances on humans, and in light of the fact that the presence of the ingredient at ≤ 3% in the product concentrate will represent a very low risk to users, especially after dilution.

The use of ethanol in cleaning and hygiene products leading to potential inhalation or skin absorption of ethanol is not likely to lead to reproductive toxicity. The Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) lists ethyl alcohol as one of the substances considered not to require control by scheduling (Appendix B, Part 3).

6.3.3 Fragrances

Fragrances that adhere to the International Fragrance Association (IFRA) 'Code of Practice' are exempt from other Section 6.3 requirements.

Listings of fragrances can be found in the:

- Research Institute for Fragrance Materials (RIFM) Database (www.rifm.org/)
- The IFRA list of fragrance ingredients (https://ifrafragrance.org/initiatives/transparency/ifra-transparency-list)

Each fragrance that is present at ≥ 0.1% in the in-use product (most concentrated dilution, excluding recommendations for incidental use of a concentrated product to deal with limited special applications such as hard-to-remove soils or stains) is subject to Table 1 requirements. For fragrances that are mixtures of different ingredients, the ≥ 0.1% cut-off applies to each individual ingredient (taking into account the fragrance's concentration in the in-use product) rather than the fragrance mixture as a whole. For example, if a fragrance mixture present in the in-use product at 0.3% contains an ingredient present at 20%, the level of that ingredient in the final product is 0.06% and therefore not subject to Table 1 requirements.

Rationale: The primary concerns regarding fragrances are the potential human health impacts including irritation and sensitisation that can occur in some individuals following exposure. Therefore, it was considered appropriate that fragrances be considered in the Human Health section of this document.

Fragrance ingredients in these databases have been assessed for human health impacts and are approved for use.

Fragrance ingredients may also have environmental impacts, and these are considered through Table 1. However, as fragrance ingredients are designed to volatilise and enter the air rather than entering the wastewater stream, as opposed to the majority of other cleaning and hygiene product ingredients, it is the in-use concentration that determines whether environmental assessment is required.

6.3.4 Corrosives

Requirements regarding corrosive ingredients are not included in these Standard Criteria for the following reasons:

- Existing regulation protects human health from product corrosivity. Corrosivity is one of the factors for consideration by the Advisory Committee on Chemicals Scheduling (ACCS) for chemical scheduling, leading to subsequent risk management controls including labelling and packaging requirements. Applicants and suppliers of chemical products are also required to provide Safety Data Sheets (SDS) to workplaces for onsite risk assessment.

- pH limits for municipal discharge already exist and vary between localities depending on effluent destination and treatment.
- Additionally, products are diluted prior to discharge to the environment and so product corrosivity is generally irrelevant to its actual environmental impact.

6.3.5 Respiratory sensitisers

Applicants agree to provide information on the presence/absence of specific ingredients that are classified as Respiratory Sensitisers Category 1, according to the Australian implementation of the GHS 3rd and 7th edition, at the request of the customer.

> *Rationale: Existing regulations specify concentration cut-offs for which respiratory sensitisers are required to be listed on the product label [see the Hazardous Chemical Information System (HCIS)]. However, certain individuals may be affected by sensitiser ingredients to a greater extent than others if they have had prior exposure to these ingredients.*

6.3.6 Skin sensitisers

Applicants agree to provide information on the presence/absence of specific ingredients that are classified as Skin Sensitisers Category 1, according to the Australian implementation of the GHS 3rd and 7th edition at the request of the customer.

> *Rationale: Existing regulations specify concentration cut-offs for which skin sensitisers are required to be listed on the product label [see the Hazardous Chemical Information System (HCIS)]. However, certain individuals may be affected by sensitiser ingredients to a greater extent than others if they have had prior exposure to these ingredients.*

6.4 Microorganisms

All products to which microorganisms (or viable spores) have been added as active ingredients must meet the criteria in this Section 6.4. Please note that this section does not apply to microorganism-derived products i.e. enzymes, which are assessed according to the requirements of Sections 6.2 and 6.3.

6.4.1 Taxonomic identification

Microorganisms must be pure and identified by a full-service culture collection listed at the WFCC-MIRCEN World Data Centre for Microorganisms (WDCM), see http://ccinfo.wdcm.org/. Taxonomic identification by another competent specialist will be accepted at the discretion of the third-party assessor.

Precise taxonomic identification to the species level is required, and to the strain level for species known to include higher-risk strains e.g. opportunistic pathogens or food poisoning organisms. 16S rDNA or rRNA sequencing must be part of the identification method.

> *Rationale: Accurate identification of the microorganism is imperative in order to draw valid conclusions relating to its potential impacts on human health and the environment. In some cases, closely-related species or strains may have different pathogenic or toxigenic impacts on human health or the environment.*

6.4.2 Quality assurance

The product must contain only the species or strain/s taxonomically identified in part 6.4.1.

The product must be manufactured in a facility with a documented quality control / quality assurance procedure.

> *Rationale: Product purity is essential for a meaningful determination of the potential human health and environmental impacts of the product. Manufacture according to documented procedures will help prevent microbial contamination during manufacture and subsequent processing.*

6.4.3 Impacts on organisms

Microorganisms must be considered non-pathogenic and classified as Risk Group 1 according to Standard AS/NZS 2243.3:2010 or World Health Organization (WHO), or equivalent.

> *Rationale: According to AS/NZS 2243.3:2010, Risk Group 1–4 classifications are based on the pathogenicity of the agent, the mode of transmission and host range, availability of effective preventative measures, and the availability of effective treatment. Classifications are based on healthy adults. Risk Group 1 (low individual and community risk) identifies microorganisms that are unlikely to cause human or animal disease.*

6.4.4 Susceptibility to antimicrobial agents

6.4.4.1 Susceptibility to disinfectants

Each species/strain of microorganism in the product must be demonstrated to be susceptible to a TGA recognised disinfectant in accordance with the TGA Disinfectant Test (Australian Therapeutic Goods Order 54 Schedule 1, Option C or higher, see https://www.legislation.gov.au/Details/F2019L00482), or equivalent e.g. Association of Official Analytical Chemists (AOAC) International, Use Dilution Method for Testing Disinfectants, SOP Number: MB-05-04.

6.4.4.2 Susceptibility to antibiotics

Each species/strain of bacteria in the product must be demonstrated to be susceptible to each of the major five classes of antibiotics (aminoglycoside, macrolide, beta-lactam, tetracycline and fluoroquinolones) in accordance with Becton Dickinson BBL™ Sensi-Disc™ Antimicrobial Susceptibility Disc Method (see https://www.bd.com/en-us/products-and-solutions/products/product-families/bd-bbl-sensi-disc-antimicrobial-susceptibility-test-discs), or equivalent. The EUCAST 'Antimicrobial wild type distributions of microorganisms' database (see https://mic.eucast.org/) contains searchable information on antimicrobial susceptibility and may provide evidence in relation to this requirement.

> *Rationale: Disinfectants and antibiotic agents play a vital role in preventing the unwanted over-proliferation of microorganisms. Resistance to antimicrobial agents could increase the risk of an uncontrolled outbreak with potentially significant impacts on human health and the environment, including the development of environmental reservoirs and zoonotic potential.*

6.4.5 Exposure during use (YOPI, food handling/processing)

To help prevent inhalation of aerosolised microorganisms, products containing microorganisms must not be used with spray application.

In addition, products containing microorganisms must not be intended for use in areas commonly frequented by vulnerable populations or for use on food-contact surfaces, unless it can be demonstrated that there is a low risk of exposure to the vulnerable population e.g. due to the mode or nature of product application.

> *Rationale: Research into the causes of laboratory-acquired microbial infections has indicated that a high proportion (up to 80%) of infections is caused by inhalation of aerosols. (Collins, C. H. and Kennedy, D. A. (eds.) Laboratory-acquired infections: history, incidence, causes and prevention. 4th ed. Oxford: Butterworth Heinemann, 1999; cited in AS/NZS 2243.3:2010.)*
>
> *Vulnerable populations include children under 5 years of age, adults over 65, pregnant women and immunocompromised individuals. These categories may be more susceptible to infection than healthy adults on whom Risk Group classifications (see Section 6.4.3) are based.*

6.4.6 Genetically-Modified Organisms (GMO)

GMO may not be present unless permitted according to the Office of the Gene Technology Regulator (see www.ogtr.gov.au).

> *Rationale: Unapproved GMO, or unlicensed applications of GMO, pose unknown potential risks to human health and the environment.*

6.4.7 Efficacy

Evidence that product performance is maintained for the duration of the product's shelf life must be provided.

> *Rationale: It is essential that where microorganisms perform an active function in the product, that they remain viable throughout the use life of the product. The evidence requirement for product performance is flexible rather than prescriptive (e.g. requiring a minimum plate count) to provide assurance of product performance whilst also ensuring that potential new technologies and microorganism-based cleaning and hygiene product applications are assessable under this Scheme. The acceptability of evidence is at the sole discretion of the third-party assessor.*

6.4.8 Accompanying information

Documentation containing the following information must accompany a product containing microorganisms:

- Clear identification that the product contains microorganisms.
- Instructions for use, including warnings that:
  - the product may not be effective in the presence of chemical sanitisers/disinfectants.
  - the product should not be used by, or in areas frequented by, immunocompromised individuals; nor should it be used on food-contact surfaces
  - contact with open cuts or sores should be avoided

- the product must not be used with spray application
- users should wash their hands after using the product

7. ADDITIONAL INFORMATION

Applicants may have additional requirements relating to, but not covered by the Scheme as detailed in sections 1–6.

Such requirements could include, for example:

- Additional advice regarding the suitability of the product to direct-release scenarios (for products that are assessed as meeting all criteria for this Scheme).
- Additional explanation/feedback regarding specific aspects of, or the outcome of, the third-party assessment.

All such requirements are subject to negotiation with the third-party assessor including regarding an additional fee for the additional service requested.

Access to information and documents relating to the 'Recognised – Environmental Credentials Scheme' is at www.accord.asn.au/sustainability/recognised.

Annex 1 – Logo for Environmental Credentials Scheme

Annex 2 – Tests for primary experimental aquatic toxicity, persistence and bioaccumulation data

- Aquatic toxicity:
  - ISO 7346-2 (fish)
  - OECD Test Guideline 203: Fish, Acute Toxicity Test
  - OPPTS Harmonised Guideline 850.1075: Fish acute toxicity test, freshwater and marine
  - OECD Test Guideline 202, Part 1, Daphnia sp., Acute Immobilisation Test
  - OPPTS Harmonised Guideline 850.1010: Aquatic invertebrate acute toxicity test, freshwater daphnids
  - OPPTS Harmonised Guideline 850.1035: Mysid acute toxicity test
  - OECD Test Guideline 201, Alga, Growth Inhibition Test
  - OPPTS Harmonised Guideline 850.5400: Algal toxicity, Tiers I and II

Where relevant, the following test methods may also be considered:

  - OPPTS Harmonised Guideline 850.1085: Fish acute toxicity mitigated by humic acid
  - OPPTS Harmonised Guideline 850.1025: Oyster acute toxicity test (shell deposition)
  - OPPTS Harmonised Guideline 850.1045: Penaeid acute toxicity test
  - OPPTS Harmonised Guideline 850.1055: Bivalve acute toxicity test (embryo larval)
  - OPPTS Harmonised Guideline 850.4400: Aquatic plant toxicity test using Lemna spp. Tiers I and II
- Persistence:
  - OECD Test Guidelines 301A–F: Ready Biodegradability
  - OPPTS Harmonised Guideline 835.3110: Ready biodegradability
  - ISO 7827, 9439, 10707, 10708, 9408, 14593
  - Regulation (EC) No 648/2004 on detergents

For organic ingredients that do not exhibit ready biodegradability in these tests, biodegradability in sewage treatment plants using the OECD 303A Activated Sludge Units Test may be demonstrated. (This does not apply where products may be released directly to natural waterways).

- Bioaccumulation:
  - OECD Test Guidelines 305: Bioconcentration: Flow-Through Fish Test
  - OPPTS Harmonised Guideline 850.1710: Oyster BCF
  - OPPTS Harmonised Guideline 850.1730: Fish BCF
  - ASTM E-1022-94(2013) Standard Guide for Conducting Bioconcentration test with Fishes and Saltwater Bivalve Molluscs