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The Eco-Choice Ecolabel Programme
Product Standard

Biologically-Based Cleaning and Degreasing Products

ISSUED BY ECO-CHOICE AFRICA
PO BOX 7119, CENTURION 0046
PHONE: +27 (012) 665 1028 FAX: +27 (012) 086 610 7120
E-MAIL: ecochoice@heritagesa.co.za

Use of This Standard

This voluntary environmental labeling standard may be used by competent environmental assessors to establish product compliance with the Eco-Choice Africa Ecolabel Programme. Products that are certified with the mark of conformity in terms of this standard have been independently assessed and demonstrate compliance to the environmental and social performance criteria detailed in this standard. The overall goal of environmental labels and declarations is the communication of verifiable and accurate information, which is not misleading, on environmental aspects of products and services. This encourages the demand for, and supply of, those products and services that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement.

This standard identifies environmental, quality, regulatory and social performance criteria that products sold on the South African market can meet in order to be considered as good "environment practice". Products that have been certified as complying to this standard may gain greater market recognition and a marketing advantage in government and business procurement programs, as well as broad consumer preference.

This standard can be used by South African producers to guide their designs for environment programs by using the environmental criteria as key performance benchmarks to reduce the environmental loads of their product. The standard is necessarily restricted in its identification of environmental loads from the product lifecycle. Producers should consider other environmental measures along the product cycle, which are not included in this standard, in their environment program designs for and aim for even higher levels of environmental performance where technically possible.

For further information please contact:

Eco-Choice Africa

Eco-Choice Ecolabel Programme

Telephone: 012 665 1028

e-mail: info@ecolabelafrica.com

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ECO-CHOICE ECOLABEL PROGRAMME STANDARD FOR PRODUCTS

Biologically-Based Cleaning and Degreasing Products

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Definitions

Anaerobically degradable means that, when measured as directed in ISO 11734 "Water quality - Evaluation of the "ultimate" anaerobic biodegradability of organic compounds in digested sludge - Method by measurement of the biogas production", the substance achieves at least 60 % degradation.

APEO means alkylphenol ethoxylate. APEO and other alkylphenol derivatives are prohibited under this standard due to aquatic toxicity.

Approved strain identification protocol means the method by which microbial strains have been identified by DNA sequencing (full length 1500+1 base pair analysis) and have been named following the naming conventions set in place by the International Code for Nomenclature of Bacteria (ICNB). This protocol shall use the program CLUSTALX (or any other suitable multiple alignment tool such as CLUSTALW, MEGA, PHYLIP) to align the sequence to other closely related species indicated by an initial Basic Local Alignment Search Tool (BLAST) analysis of the sequence. A BLAST search or analysis compares a query sequence with a library or database of sequences, and identifies library sequences that resemble the query sequence above a certain threshold.

Aromatic solvent means a hydrocarbon solvent comprised of 80%or greater aromatic hydrocarbon compounds by mass. An aromatic hydrocarbon as used here is defined as an unsaturated ring of carbon atoms; this includes compounds such as benzene, xylene and toluene and their derivatives.

ASTM means American Society for Testing and Materials.

Bioaccumulative: A substance is classified as potentially bioaccumulative if its octanol-water partition coefficient is greater than 1000 when measured with the following:

OECD 107. Octanol-Water Partition Coefficient (Flask Method).
OECD 117. Octanol-Water Partition Coefficient (HPLC Method).
OECD 107 must not be used for surfactants.
Other test methods may be accepted, including OECD 305.

Builder means any substance intended to maintain alkalinity, and/or bind calcium and magnesium ions (soften the water), and/or keep dirt in suspension, increasing the effectiveness of the detergent. It includes substances such as phosphates, NTA, EDTA, zeolites, sodium citrate, sodium silicate and sodium carbonate.

Carcinogenic means capable of causing cancer. The International Agency for Research on Cancer is the internationally accepted body for the classification of carcinogenic substances. See http://www.iarc.fr

Colony forming unit means a measure of bacteria concentration assuming that each bacterium is capable of forming a colony;

Consortium means the physical association between the cells of two or more types of microorganisms, with the results usually being advantageous to at least one of them;

Contact sensitizer: Any substance that induces a progressively amplified response following continuous or repeated doses of that substance.

EDTA means ethylene diamine-tetra-acetic acid or ethylene dinitrilo-tetra-acetic acid, or any of its salts or primary derivatives.

Fragrance or **Colouring** means organic substances that are added primarily for aesthetic reasons to give colour or smell. Fragrance can also be for the purpose of concealing smells from other ingredients or from the item to be cleaned.

Genetically modified organism means an organism that is produced within a laboratory setting, and a gene from one organism is purposely moved to improve or change another organism;

General Purpose Cleaners (GPC) means any cleaner designed to perform on a variety of hard surfaces for household, institutional and/or recreational purposes. It excludes institutional cleaners intended for use in certain situations where a highly germicidal action is required, such as in hospital and food processing areas.

GMO means genetically modified organism

ISO means the International Organisation for Standardization.

Label means the Eco-Choice Label.

Lethal Concentration means the concentration of material that is estimated to prove lethal to test organisms , human, animal or aquatic life

LC_{50} means median lethal concentration, and is the concentration of material that is estimated to be lethal to 50% of the test organisms;

Mutagenic means any substance that causes mutations or genetic abnormalities. The criteria for classification of a substance as mutagenic are defined by the National Industry Chemical Notification and Assessment Scheme (NICNAS).

NTA means nitrilotriacetic acid or any of its salts.

Ozone depleting potential means the ratio of calculated ozone column change for each mass unit of a gas emitted into the atmosphere relative to the calculated depletion for a mass unit of the reference gas CFC-11;

ODP means ozone depleting potential

OECD means Organisation for Economic Co-operation and Development.

pH is formally the negative log function of the activity of the hydrogen ion in solution. In practice, it is a scale indicating how acidic or alkaline a solution is. For water, a pH of 7 is neutral, higher pH values are progressively more alkaline and lower pH values are progressively more acidic. Each pH unit represents a ten-fold concentration change of the hydrogen ion.

Readily biodegradable surfactants mean those where the average level of biodegradation observed in an aerobic sewage treatment plant is at least 90% during a residence time of not more than 3 hours. In order to meet this requirement the surfactant must either meet the requirement for ready biodegradability when determined using any of the following test methods including the OECD Guidelines for Testing of Chemicals, Test Guidelines 301A-301E, ISO 7827 (2010) or achieve a biodegradability of at least 80% when tested by the OECD method or South African equivalent. The pass level of 80% recognises the inherent experimental variability of the OECD test.

Risk Group means one of the four tiers of microorganism classification defined by the World Health Organization in their Laboratory Biosafety Manual, 3rd edition, 2004. These classifications are based on the relative hazard of infection in an occupational setting, to the community, to animal livestock and to the environment. The four tiers of classification are:

- **Risk Group I** (low individual and community risk) – micro-organisms that are unlikely to cause human or animal disease,

- **Risk Group II** (moderate individual risk, low community risk) – pathogens that can cause human or animal disease but are unlikely to be a serious hazard to laboratory workers, the community, livestock, or the environment. Laboratory exposures may cause serious infection, but effective treatment and preventive measures are available and the risk of spread is limited,
- **Risk Group III** (high individual risk, low community risk) - pathogens that usually cause serious human disease but does not ordinarily spread from one infected individual to another. Effective treatment and preventative measures are available, and
- **Risk Group IV** (high individual and community risk) - pathogens that usually produce serious human or animal disease and may be readily transmitted from one individual to another, either directly or indirectly. Effective treatment and preventative measures are not usually available.

Solvent is a general term for a chemically diverse range of liquid phase substances which dissolve other materials.

Surfactant or "**surface-active agent**" means any substance which is intended to reduce surface tension thereby helping water to surround and remove dirt or staining from surfaces.

Teratogenic means any substance capable of producing congenital deformations or birth defects. The criteria for classification of a substance as teratogenic are defined by the National Industry Chemical Notification and Assessment Scheme (NICNAS).

Volatile Organic Compound (VOC) is defined as any organic compound having a vapour pressure of 0.01 kPa or more, at 20 °C, or having a corresponding volatility under the particular conditions of use. For indoor environments, VOC means any carbon-containing compound that evaporates easily at room temperature, including exempt compounds because these have the potential to adversely impact the health of people that are exposed, despite their negligible photochemical reactivity.

1 INTRODUCTION

1.1. Purpose

This Standard seeks to define good environmental performance benchmarks for a wide range of cleaning products. The voluntary environmental labeling standard implemented by the Eco-Choice Ecolabel Programme (ECSA) as part of the Heritage Ecolabel program specifies environmental performance criteria for both domestic and professional cleaning products including general purpose cleaners for use on walls, ceilings, benches or other hard surfaces, kitchens, bathrooms, toilets laundry detergents as well as general purpose and sanitary cleaning agents. This standard stipulates the environmental load of such products throughout the major aspects of their life cycle.

1.2. Background

The primary function of general purpose cleaners is to remove soils from hard surfaces. Millions of kilograms of general purpose cleaners are consumed in Africa each year. This represents a potentially significant burden on the environment in terms of wastewater loading and subsequent treatment, emissions of volatile organic compounds (VOC's), resource consumption and disposal of packaging materials.

The major active components in general purpose cleaners are surfactants, builders, solvents and scouring abrasives. Components, such as surfactants, may accumulate and may be toxic or otherwise harmful in the environment. Surfactants provide a significant load on sewage systems. Builders serve to overcome water hardness and improve surfactant performance. Phosphate and nitrilotriacetic acid (NTA) are commonly used builders. Although NTA is an efficient builder, it increases the mobility of heavy metals in aquatic environments.

Biologically- based cleaning and degreasing compounds contain microbial cultures that promote microbial digestion of hydrocarbons, organic contaminants and other undesirable substances. Biologically-based products may also contain surfactants and other compounds, which increase their efficacy. In addition, the use of aqueous or semi-aqueous cleaners, rather than those made primarily of organic solvents, results in a reduction in volatile organic compounds and ozone depleting substances emitted.

To reduce environmental and human health impacts, components of biologically-based cleaners should either be environmentally innocuous or should readily biodegrade, and the products of degradation should not pose an increased risk to the environment.

As information and technology change, product category requirements will be reviewed, updated and progressively amended.

This standard has been developed using international environmental and toxicological research. Toxicological requirements are generally consistent with European ecolabelling standards, with other criteria introduced for the South African market.

1.3 Notice

1.3.1 While every effort has been made to ensure that the relevant national or international codes, references or relevant documentation systems are used in this standard, where a local equivalent is not referred to, but does exist, the local standard or regulation will take precedence over any international reference.

1.3.2 This standard does not address the asthma-related impacts or issues associated with the use of products that are licenced under the standard. As this is an international issue under research and definition, as and when an international standard for asthma-related impacts is available, it will be incorporated into this standard.

2 STANDARD CATEGORY SCOPE

This category includes all biologically-based cleaning and degreasing compounds as further defined in the subcategories in this section. The subcategories are:

2.1 Consumers for use in private homes

This category includes biologically-based household cleaners and degreasers for use on toilets, bathrooms and other wet-areas.

2.2 Institutional and Industrial users

This category includes biologically-based general facility maintenance cleaners and biologically-based degreasers and part cleaners.

2.3 Use of the Eco-Choice Label

The Label must be used appropriately by certified organisations in line with the licensing agreement offered to successful applicants. This includes specification of the certified service and licence number alongside any display of the label. The Label must not be used to over-represent the extent and scope of certification under this Standard.

Certification under this Standard applies only to the administrative function of the retailer seeking certification. The Label must not be associated with goods or with other services excluded by this scope that are provided by the retailer, or as part of advertising material for those goods or services.

Physical goods may be certified by Eco-Choice under the relevant product category standard and may only then carry the Eco-Choice Label for goods. The Eco-Choice label for retail services does not in any way constitute endorsement of products provided by the retailer.

3 ENVIRONMENTAL PERFORMANCE CRITERIA

3.1 Fitness for Purpose

Certified products should be good performers in their intended application. Certain standards of quality and effectiveness are implicit in the Label. The manufacturer must ensure that the biologically-based cleaning or degreasing product is fit for its intended purpose and that:

3.1.1 Applicable Standards

The product meets or exceeds the requirements of the relevant South African Standard applicable to the product (e.g.: SANS 232; SANS 1044; SANS 1828), or the product meets the applicable and accepted standard in its target market if it is to be exported to any market in which a similar Eco label standard exists.

3.1.2 Demonstrated Performance

If there is no relevant local Standard, the product can demonstrate sufficient quality by providing testing reports from an independent organisation or case studies from cleaning trials conducted by an independent organisation demonstrating suitability and quality. In all independent testing practices, the ISO 17025 standard must be met.

2.1.3 Safety and Performance

The product must exceed and applicable national, regional and local industrial standards in respect of safety and performance.

2.1.4 Legally Compliant

The product must be provided in such manner as to ensure that all processes, including the disposal of waste products arising from its manufacture, will comply with all relevant national, provincial or local laws, regulations or by-laws.

3.2 Chemical Requirements

All raw materials must be sourced from facilities that comply with Section 4 of this standard. Proof of compliance by the applicant must be provided with the application.

Details of all ingredients used in all certified cleaning products must be provided using the Ingredients List spreadsheet available with this standard.

All products under this category must:

3.2.1 Microbial Components

(a) (i) for liquid formulation, have a plate count greater than or equal to 1x107 colony forming units per milliliter, when the count is measured in the product at its recommended dilution for typical use1;

(ii) for dry product formulation, have a plate count greater than or equal to 1x108 colony forming units per milliliter, when the count is measured in the product at its recommended dilution for typical use;

(b) use only those bacterial cultures that are derived from a Risk Group I microbial culture;

(c) not contain the following pathogenic strains when screened through the test methods specified below or alternates that have been approved by the Eco-Choice Program:

(i) E. Coli, when tested using Method 9222G or 9213D from Standard Methods for the Examination of Water and Wastewater, 19th/20th editions,

(ii) Streptococcus (Enterococcus), when tested using Method 9230B or 9230C from Standard Methods for the Examination of Water and Wastewater, 18th/19th/ 20th editions,

(iii) Staphylococcus aureus, when tested using the test or rapid detection methods accepted in the US Food and Drug Administration"s Bacteriological Analytical Manual, Chapter 12,

(iv) Bacillus cereus, when as tested using the test or rapid detection methods accepted in the US Food and Drug Administration"s Bacteriological Analytical Manual, Chapter 14, and

(v) Salmonella, when tested using the test or rapid detection methods accepted in the US Food and Drug Administration‟s Bacteriological Analytical Manual, Chapter 5 and a MacConkey Test for detecting gram negatives.

(d) not be formulated or manufactured with genetically modified organisms;

(e) contain only those microbial strains that have been identified in accordance with an approved strain identification protocol;

(f) be susceptible to anti-microbial agents, as demonstrated by testing the microbial strain against an acceptable substance in accordance with the EPA/OPP Standard Operating Procedure for AOAC Use Dilution Method for Testing Disinfectants, SOP Number: MB-05-04;

(g) be susceptible to each of the five major antibiotic classes (aminoglycoside, macrolide, beta-lactam, tetracycline and fluoroquinolones), as demonstrated by testing the microbial strain in accordance with Beckman Dickinson BBL antimicrobial susceptibility disc method;

3.2.2 Prohibited Substances

The following substances are prohibited in all certified cleaning products.

i. any substance or material with a zero ODP;
ii. any formulation or manufacture with:
    a) alkylphenol ethoxylates (APEOs) including nonylphenol, octylphenol and their ethoxylates,
    b) aromatic solvents, chlorinated organic solvents,
    c) butoxy-ethanol,
    d) nitrilotriacetic acid (NTA), or
    e) phosphorus-based builders.
iii. not be formulated or manufactured with ethylene diaminetetracetic acid, ethylene dinitrilotetracetic acid, nitrilotriacetic acid or the salts of these compounds. The only exception to this prohibition is when one of the above compounds is used as a preservative and is present in concentrations of less than 100 ppm in the undiluted product;
iv. not be formulated with any ingredient that is listed as a Group 1 (known), Group 2a (possible), or Group 2b (probable) carcinogen in the International Agency for Research on Cancer (IARC) Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans;

3.2.3 RestrictedSubstances

This section places limits on certain substances based on the concentration of the in-use solution or solid. For products sold as concentrates or solids for dissolution (e.g., laundry powder), the concentration will be measured when the solution is diluted as directed on the label. If multiple dilution options are given for various applications, the concentration will be measured for the most concentrated application rate.

3.2.3.1 Volatile Organic Compounds

The product may not contain more than the following levels of VOC's

(i) 1% by weight, for biologically-based household cleaners and degreasers (CCD-110A),
(ii) 1% by weight, for biologically-based facility maintenance cleaners (CCD-110B), and
(iii) 5% by weight, for biologically-based parts cleaners (CCD-110C).

VOCs must have been determined using the following method-: California ARB Method 310. Determination of Volatile Organic Compounds (VOC) in Consumer Products, as last amended on August 6, 2010.

LVP-VOC status of compound or mixtures used in the product shall be determined using ASTM Method D2879-97 as modified in Appendix B of ARB Method 310 and ASTM E 1719-97 to verify exemption.

For products for which the label specifies dilution prior to use, VOCs should be measured after the minimum recommended dilution has taken place. The minimum recommended dilution shall not include recommendations for the incidental use of a concentrated product to deal with limited special applications, such as hard to remove soils and stains.

3.2.3.2 Surfactants and Enzymes

All surfactants must be readily biodegradable as defined above.

All surfactants must be anaerobically degradable as defined above.

The micro-organism used for enzyme production shall not be detectable in the final preparation.

Product shall not contain more than the following levels of surfactants:

(i) 1% by volume, for biologically-based household cleaners and degreasers (CCD-110A),
(ii) 1% by volume, for biologically-based facility maintenance cleaners and degreasers (CCD-110B), and
(iii) 3% by volume, for biologically-based parts cleaners and degreasers (CCD-110C).

For products for which the label specifies dilution prior to use, surfactants shall be measured after the minimum recommended dilution has taken place. The minimum recommended dilution shall not include recommendations for the incidental use of a concentrated product to deal with limited special applications, such as hard to remove soils and stains.

3.2.3.3 Solvents

Certified cleaners must not contain more than 5 % by mass volatile organic compounds (VOC). For products sold as concentrates for dissolution with water, the VOC concentration will be measured or calculated when the solution is diluted as directed on the label. If multiple dilution options are given for various applications, the VOC concentration will be measured for the most concentrated application rate that may be expected for routine use. The VOC requirement may not apply to occasional use of the concentrated product, such as stubborn stain removal.

3.2.3.4 Fragrances and Colourants

Fragrance must be produced and used in accordance with the "Code of Practice" compiled by the International Fragrance Association (IFRA).

Colourants used must be included on the "List of Colouring Agents Allowed for use in Cosmetic Products" in Annex IV of the European Union Commission Directive 76/768/EEC or applicable South African standards (e.g.: SANS 22716:2011/ISO 22716:2007 or SANS TR 24475:2011/ISO TR 24475:2010). A copy of the Directive(s) is available at:

http://ec.europa.eu/enterprise/cosmetics/html/consolidated/dir.htm
https://www.sabs.co.za/

Aromatic compound content shall be determined using the ARB Method 310, Determination of Volatile Organic Compounds (VOC) in Consumer Products, as last amended on August 6, 2010.

Fragrances, considered exempt under ARB, shall be treated and included as VOC content for the purpose of this standard.

3.3 Other Claims

3.3.1 Suitable for Local Wastewater or Greywater Systems

Products that intend to claim suitability for local waste water systems or on-site grey water systems and to declare that environmental characteristic as part of the voluntary environmental labeling declaration use must show that the total sodium load per recommended dose (e.g., per wash for laundry detergents) is less than 0.1 g / L or less than 10 g in total per use, whichever is the lesser emission.

3.3.2 Phosphorus Related Claims

Products that intend to declare "no phosphorus", "phosphorus free" or "phosphate free", or similar, as part of the voluntary environmental labeling declaration must not be in a product category where none of its competitors use phosphorus-containing compounds (e.g., liquid laundry detergent), since this represents a misleading competitive environmental benefit.

If the claim refers to "phosphorus", the product must not contain any phosphorus containing compounds whatsoever.

If the claim refers to "phosphates", the product must not contain phosphates nor any other phosphorus-containing compounds that may react (including via biologically mediated reactions) to provide nutrient in any aquatic system.

3.3.3 Food Safe

Products that intend to declare "food safe", or similar, as part of the voluntary environmental labeling declaration must be able to provide evidence of formal recognition of this claim by applicable South African legislation/Standards (SANS 1828).

3.3.4 Organic

Products that intend to declare "Organic", or similar, as part of the voluntary environmental labeling declaration must be Certified Organic by a recognised authority or organisation or by a National Association for Sustainable Agriculture within South Africa.

3.3.5 Product Performance

The product must perform as well as at least two conventional, functionally equivalent products that are available in South Africa (noting that testing should follow any application and time requirements stated on the product label to allow time for the microbial components to react):

3.3.6 Other Claims

Other environmental claims shall be verifiable by ECSA citing, as a minimum, appropriate test results from an independent, accredited laboratory in accordance with an internationally recognised relevant test method.

3.4 Packaging and Labeling

3.4.1 Recyclability

(i) All plastic containers and plastic components must be made of a plastic type that is recycled in South Africa (or the country to which the product is exported and sold). If only one plastic type is used in the product packaging, major parts must be marked with the appropriate resin identification code promulgated by the Plastics and Chemical Industry Association or in accordance with ISO11469.

(ii) Packaging made from more than one type of material must be easily and quickly separable into component recyclable parts without the need for any tools, and each component must be marked with the appropriate resin identification code promulgated by the Plastics and Chemical Industry Association or in accordance with ISO 11469.

(iii) Packaging must not be impregnated, labeled, coated or otherwise treated in a manner, which would prevent recycling (e.g., reinforced sleeves, metallic labels).

(iv) Polystyrene, Chlorinated or halogenated plastics shall not be used in product packaging.

(v) Packaging shall be recyclable, refillable, represent a source-reduced package or contain a minimum of 25% post-consumer waste content.

(vi) Paper used in packaging must not be bleached with any compounds containing or giving rise to elemental chlorine.

(vii) Cardboard packaging must contain at least 70% recycled pulp by weight, or meet the requirements of ECSA Standard for Recycled Paper Products (ECSA-P13-2010).

(viii) All used packaging must be recyclable by local recycling systems.

3.4.2 Product Information

The manufacturer must provide written information to the consumer clearly stating:

- Instructions for proper use so as to maximise product performance and minimise waste.
- The packaging and labeling of the product must meet the requirements of the South African National Consumer Protection Act.
- Contain environmentally responsible disposal instructions.
- If the product is to be exported, instructions for safe chemical use must be provided in all appropriate languages.

In addition, all biologically-based products must indicate the microbiological strains have been used.

3.4.2.1 Toxicity and Labeling

For all products, labeling shall indicate any element regarded as being harmful or an irritant as described in Group 1(Category A and/or B) and Group 2 f the Hazardous Substances Act (Act 15 of 1973) and the Hazardous Substances Amendment (Act 53 of 1992)

3.5 Manufacturing Facility

To be considered for registration as a biologically-based cleaning or degreasing product by Eco-Choice Africa, the manufacturer and manufacturing facility shall have a documented quality control and environmental management system.

3.6 Toxicity and Biodegradation

To be considered for registration as a biologically-based cleaning or degreasing product by Eco-Choice Africa, the product must:

i. demonstrate ingredients of product are readily biodegradable using procedures defined in Part 4 of the Globally Harmonized System for Classification and Labeling of Chemicals (GHS).

ii. be based on the recommended dose for typical use, the full formulation should demonstrate low potential for human toxicity (Category 4) using procedures defined in Part 3 of the Globally Harmonized System for Classification and Labeling of Chemicals (GHS);

iii. demonstrate a low potential to bioaccumulate in aquatic organisms (log kow ≥ 4 or BCF< 500), for all individual ingredients or the whole formulation, using procedures defined in the Globally Harmonized System for Classification and Labeling of Chemicals (GHS);

iv. ensure that based on the recommended dose for typical use, the full formulation should have low acute aquatic toxicity (Category 3 toxicity) using procedures defined in the Globally Harmonized System for Classification and Labeling of Chemicals (GHS);

v. ensure no individual ingredients are classified under Category 1 for acute toxicity using procedures defined in both Part 3 & Part 4 the Globally Harmonized System for Classification and Labeling of Chemicals (GHS)

3.7 Ethical Trading Practices

While some aspects of service provision are not covered under this standard, namely the ethical operation or indirect environmental or social impact of the service itself, it is expected that significant social impacts or environmental loads will be managed by the service provider. If an aspect of the service provision is grossly mismanaged or the service provision directly supports socially or environmentally damaging activities, which are

not directly covered by the above environmental performance criteria, assessors may recommend against certification under this Standard.

4 COMPLIANCE TO ENVIRONMENTAL REGULATIONS

The applicant is required to comply with relevant environmental legislation and government regulations at the Local, National and Regional levels, if these have been issued. An applicant's compliance with these criteria may be established by undertaking a series of random checks; and/or by gathering samples of applicant operational procedures and documents from approved assessors as evidence to support compliance during the verification. Where an applicant is bound by foreign jurisdiction, that jurisdiction's environmental regulations will apply. Where the applicant is subject to a guilty verdict by a legally constituted court in the last 24 months on the basis of a breach of any environmental legislation or permits, there must be evidence of corrective action. Failure to provide such evidence shall disqualify the applicant.

5 COMPLIANCE TO LABOUR, ANTI-DISCRIMINATION AND SAFETY REGULATIONS

The applicant shall demonstrate that all employees are protected in terms of the Basic Conditions of Employment Act (Act 75; 1997) and Amendments (2002).

The applicant shall demonstrate general compliance to the terms of the Labour Relations Act (Act 66; 1995); the Occupational, Health and Safety Act (Act 85; 1993) and any other legislation related to anti-discrimination; sexism; child labour or applicable labour standards. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by a South African Court within the last 24 months, there must be evidence of corrective action.

Where the applicant is from a foreign jurisdiction, the applicant shall demonstrate compliance to that jurisdiction's anti-discrimination, occupational health and safety, and workers' compensations regulations. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by a legal court in their respective country within the last 24 months on the basis of a the breach of anti-discrimination, occupational health and safety, and workers' compensation regulations, there must be evidence of corrective action.

The applicant's compliance with these criteria may be established by undertaking a series of random checks; gathering samples of applicant operational procedures and documents from approved assessors; and/or by providing a self-declaration document signed by an executive officer of the applicant organisation as evidence to support compliance during verification.

6 EVIDENCE OF CONFORMANCE

6.1 Audit Methodology

Conformance with this standard shall be demonstrated by undertaking an assessment under the above criteria by an approved assessor, following the certification and verification procedures detailed in the Heritage Green Business Management System, which generally follows the environmental auditing requirements of ISO 14001.

6.2 Assessor Competency

The Eco-Choice Ecolabel Program classifies approved assessors as:

a. Assessors registered by Heritage as environmental professionals that hold expertise relevant for an assessment, and who have undertaken training in the procedures of the Eco-Choice Ecolabel Program; or

b. Environmental auditors accredited with the SANAS.

6.3 Suitable Sources

Audit evidence should be of such a quality and quantity that competent environmental auditors, working independently of each other, will reach similar audit findings from evaluation of the same audit evidence against the same audit criteria.

Suitable sources of information to establish compliance may be, but are not limited to:

a. Technical specification of a product.
b. Obvious characteristics of the product under examination.
c. Scientific test results and reports.
d. Environmental management system and audit reports and results.
e. Life-cycle assessment of each stage of the product life-cycle via a physical audit and examination.
f. Life-cycle assessment via scientific testing.
g. A statement of confirmation by an executive officer.
h. An assessment of company or government records, including minutes of meetings, policy documents and receipts.
i. Other material that can be considered objective evidence.

6.4 Verification

To verify that any claims that a product meets the criteria prescribed in this standard, Eco-Choice Africa may require access to all relevant quality control and production records and right of access to production facilities on a scheduled basis. The applicant shall not unreasonably withhold such access.

A signed statement by the Chief Executive Officer or equivalent of the manufacturer shall confirm compliance to this standard. Should any change take place in the manufacturing process, or should any non-compliance with the prescribed standard take place, the applicant shall notify Eco-Choice Africa in writing immediately of such situation. Eco-Choice Africa may choose to suspend, withdraw or cancel the licence upon such instance in terms of the Licence Agreement.

6.5 Laboratory Testing

New testing shall be undertaken by a laboratory accredited by SANAS, or equivalent international accreditation agents who can conduct the relevant tests and/or provide documentation detailing environmental performance against the criteria of this standard. The test results should be presented in a prescribed manner or from a laboratory acceptable to Eco-Choice Ecolabel Programme.

If test results or environmental auditing results are not available, and/or there is insufficient data to establish full compliance with the criteria required by this standard, then certification cannot be awarded.

Appendix 1: VOCs Determined to be of Negligible Photochemical Reactivity

1) *acetone*
2) *ammonium carbonate*
3) *carbon monoxide*
4) *carbonic acid*
5) *ethane*
6) *metallic carbides or carbonates*
7) *methane*
8) *methylene chloride (dichloromethane)*
9) *methyl acetate*
10) *methyl formate*
11) *dimethyl carbonate*
12) *propylene carbonate*
13) *cyclic, branched, or linear completely methylated siloxanes*
14) *parachlorobenzotrifluoride (PCBTF)*
15) *perchloroethylene (tetrachloroethylene)*
16) *1,1,1-trichloroethane*
17) *trichlorofluoromethane (CFC-11)*
18) *dichlorodifluoromethane (CFC-12)*
19) *trichlorotrifluoroethane (CFC-113)*
20) *dichlorotetrafluoroethane (CFC-114) (u)*
    chloropentafluoroethane (CFC-115) (v)
    chlorodifluoromethane (HCFC-22)
21) *dichlorotrifluoroethane (HCFC-123)*
22) *dichlorofluoroethane (HCFC-141b) (y)*
    chlorodifluoroethane (HCFC-142b) (z)
    2-chloro-1,1,1,2-tertrafluoroethane (HCFC-124)
23) *trifluoromethane (HFC-23)*
24) *1,1,1,2,3,4.4,5,5,5-decafluoropentane (HFC-43-10mee)*
25) *pentafluoroethane (HFC-125)*
26) *1,1,2,2-tetrafluoroethane (HFC-134)*
27) *1,1,1-trifluoroethane (HFC-143a)*
28) *1,1-difluoroethane (HFC-152a) (gg)3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)*
29) *1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)*
30) *perfluorocarbons (classes of):*
    (a) cyclic, branched, or linear, completely fluorinated alkanes
    (b) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
    (c) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
    (d) sulfur-containing perfluorocarbons with no unsaturations with the sulfur bonds only to carbon and fluorine
31) *difluoromethane (HFC-32) (kk)*
32) *ethylfluoride (HFC-161)*
33) *1,1,1,3,3,3-hexafluoropropane (HFC-236fa)*
34) *1,1,2,2,3-pentafluoropropane (HFC-245ca)*
35) *1,1,2,3,3-pentafluoropropane (HFC-245ea)*
36) *1,1,1,2,3-pentafluoropropane (HFC-245eb)*
37) *1,1,1,3,3-pentafluoropropane (HFC- 245fa)*
38) *1,1,1,2,3,3-hexafluoropropane (HFC-236ea)*
39) *1,1,1,3,3-pentafluorobutane (HFC-365mfc)*
40) *chlorofluoromethane (HCFC-31)*
41) *1-chloro-1-fluoroethane (HCFC-151a)*
42) *1,2-dichloro-1,1,2- trifluoroethane (HCFC-123a)*
43) *1,1,1,2,2,3,3,4,4-nonafluoro-4- methoxy-butane (C4F9OCH3 or HFE-7100)*
44) *2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-Heptafluoropropane ((CF3)2CFCF2OCH3)*
45) *1-ethoxy-1,1,2,2,3,3,4,4,4- nonafluorobutane (C4F9OC2H5 or HFE-7200)*
46) *2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane (CF3)2CFCF2OC2H5)*
47) *1,1,1,2,2,3,3-heptafluoro-3-methoxy- propane (n-C3F7OCH3 or HFE-7000)*
48) *3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500)*
49) *1,1,1,2,3,3,3-heptafluoropropane (HFC -227ea)*
50) *1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300)*

Appendix 2: Interpretation Document: Definition of Aromatic Solvents

Interpretation:

Eco-Choice Africa standards may include requirements that address aromatic solvents. These standards generally define aromatic solvents as organic compounds containing at least one ring structure consisting of six carbon atoms joined by alternating single and double bonds. To further refine this definition for certification criteria documents for cleaning products, theECo-Choice Programme has added the following clause:

Aromatic solvents means those organic compounds containing:
- at least one ring structure consisting of six carbon atoms joined by alternating single and double bonds AND
- two or less simple substitutions (additional chemical groups) to the basic benzene ring.

Basis for Interpretation:

Once a certification criteria document has been published, Eco-Choice may be requested to clarify the intention behind a particular criterion, the relevance of a particular criterion to a particular market segment, and/or how an applicant product will be assessed for compliance against a particular criterion. Eco-Choice Africa reserves the right to determine what evidence is both appropriate and adequate to prove compliance.

The rationale for prohibiting aromatic solvents is to limit highly volatile solvents that are very close in chemical structure to aromatic carcinogens (e.g. benzene) or to those with reproductive effects (e.g. toluene, xylene). In general, the more substituted an aromatic compound is, the lower its volatility (or the more chemical group substitutions on the basic ring structure, the more likely the compound will not volatilize).

For example, the following compounds would be considered aromatic:

- Benzene (C6H6). This is the basic aromatic ring structure with zero substitutions. Therefore it would be considered aromatic.

- Toluene (C7H8). This compound has one substitution – methyl (CH3). Although methyl is considered a simple substitution, there is still only one. Therefore, the solvent is considered aromatic.

- Phenol (C6H6O). This compound has one substitution – alcohol (OH). Although alcohol is considered a simple substitution, there is still only one. Therefore, the solvent is considered aromatic.

- Xylenes (C8H10). This group of compounds includes o-Xylene, m-Xylene and p-Xylene. These compounds have two additional substitutions of methyl (CH3). Although methyl is considered a simple substitution, there are still only two. Therefore, the solvent is considered aromatic.

- Benzyl alcohol (C7H8O). This compound has two substitutions – one alcohol (OH) and one methyl (CH3). Although both are considered to be simple substitutions, there are still only two. Therefore, the solvent is considered aromatic.

The following compounds would not be considered aromatic:

- Phenyl ethyl alcohol (C8H10O). This compound has two substitutions - one ethyl (C2H6) and one alcohol (OH). Ethyl is not considered a simple substitution. Therefore, the solvent is not considered aromatic.

- Phenoxyethanol (C8H10O2). This compound has three substitutions - one ether (R–O–R), one alcohol (OH) and one methyl (CH3). Although all substitutions are simple, there are more than two. Therefore the solvent is not considered aromatic.