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# The Eco-Choice Ecolabel Programme Product Standard

## Laundry Detergents



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## Use of This Standard

This voluntary environmental labeling standard may be used by competent environmental assessors to establish product compliance with the Heritage Eco-Choice 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.

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## ECO-CHOICE ECOLABEL PROGRAMME STANDARD FOR PRODUCT

# Laundry Detergents

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### Definitions

**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.

**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>

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

**Flourescent Whitening Agent (FWA)** means a compound which by its presence in or on a near-white surface, creates a visual whitening effect by virtue of fluorescence.

**Formulated or manufactured with** refers to the preparation of the detergent and not to the preparation of the components of the detergent unless the components are specifically mentioned in the product requirements. Residual or unreacted components are covered by the product -specific requirements.

**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.

**Genotoxin** means a substance capable of causing damage to genetic material, such as DNA.

**ISO** means the International Organisation for Standardization.

**Label** means the Eco-Choice Label.

**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).

**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.

**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.

## 1 INTRODUCTION

### 1.1. Purpose

This Standard seeks to define good environmental performance benchmarks for a range of laundry detergent products. The voluntary environmental labeling standard implemented by the Eco-Choice Africa Ecolabel Programme (ECA) specifies environmental performance criteria for both domestic and professional products. This standard stipulates the environmental load of such products throughout the major aspects of their life cycle.

### 1.2. Background

The primary function of laundry detergents is to remove stains and dirt and to deliver a mild disinfectant. Millions of litres of laundry detergents are consumed in Africa each year, representing 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 active components in laundry detergents include **surfactants** which facilitate dirt removal, and these may accumulate and become toxic or otherwise harmful in the environment. Surfactants provide a significant load on sewage systems. In addition to surfactants, laundry detergents contain **builders** which serve to overcome water hardness and to improve surfactant performance. Tripolyphosphate is the most common builder used in laundry detergents, although soda ash (a sodium carbonate) is also used as a builder and as a source of alkaline in some products. While builders themselves pose environmental risk, they serve to increase the effectiveness of surfactants and to reduce the amount of surfactant used, so they may be justified in some products as their exclusion could prove counterproductive and more harmful.

In addition to these elements, laundry detergents also include bleaches, fluorescent whitening agents, preservatives, dyes, solvents, fillers, fragrances, corrosion inhibitors and enzymes. Some of these – such as enzymes, contribute to the overall performance of the product while others serve specific purposes such as corrosion inhibitors and others are simply there for cosmetic purposes (smell or brilliance).

The goal of manufacturing environmentally responsible detergents is to reduce or eliminate those components or elements that do not aid the removal of dirt from linen and fabrics. This will result in less stress on sewage systems and waterways, but to maintain a balance between consumer acceptability, efficacy and environmental concerns, the advantages and disadvantages of the constituent parts must be weighed in the overall manufacturing process. The presence of phosphates results in limiting the nutrients available in aquatic environments and is generally discouraged in an effort to eliminate unsustainable plant growth and oxygen starvation (eutrophication) of water bodies.

To reduce environmental and human health impacts, components of detergents should either be environmentally innocuous or should readily biodegrade, and the products that contribute to the efficacy of the products should not pose an increased risk to the environment. Based on a review of currently available information, this standard will produce environmental benefits by reducing water pollution by reducing the volume of total chemicals used in the products and by limiting the use of (VOC's) and potentially hazardous ingredients, conserving transport and energy and by minimising waste production by reducing the amount and type of primary packaging. As information and technology change, product category requirements will be reviewed, updated and progressively amended.

Waste as a result of packaging also poses an environmental impact, and depending on the type of packaging used by the manufacturer and the disposal methods selected by the consumer, this is considered in the overall evaluation of the product itself. Reducing, recycling or otherwise removing waste volumes in the waste stream should be the overriding consideration by manufacturers in this category.

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

## **2 STANDARD CATEGORY SCOPE**

This standard is applicable to the following categories of cleaning products:

### **2.1 Laundry Detergents**

All laundry detergents, in powder, liquid or any other form, for the washing of textiles intended to be used principally in household, launderette or communal laundry washing machines. This standard may not be suitable for commercial laundries and other industrial applications.

Products intended for disinfection or limiting of bacterial growth are excluded from this product standard.

#### **2.2.1 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 product is fit for its intended purpose and:

##### 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.

#### 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 hand dishwashing detergents must be provided with the application for certification.

##### 3.2.1 **Prohibited Substances**

The following substances are prohibited in all certified cleaning products.

- i. Halogenated organic substances or solvents (e.g., chlorinated methane or ethane, fluoropolymer additives).
- ii. Aniline based amines.
- iii. The phthalates DEHP, DBP, DAP or BBP.
- iv. Polybrominated diphenyl ethers, or short-chain chlorinated organic flame retardants.
- v. APEO and other alkylphenol derivatives
- vi. Xylene sulfonates or other linear alkyl benzene sulfonates
- vii. Reactive chlorine compounds (e.g., hypochlorites)
- viii. Organic chlorine carriers (e.g., triclosan)
- ix. Benzalkonium chloride
- x. Trichloroethane
- xi. Butoxyethanol
- xii. Optical brightening agents
- xiii. The chelating agents EDTA, DTPA, NTA or phosphonates.
- xiv. Any substances listed as class 1 or 2a carcinogens by the International Agency for Research on Cancer (IARC).
- xv. Any substance that is potentially bioaccumulative according to the definition given above.

##### 3.2.2 **Restricted Substances**

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.

- i. Certified products may not contain more than 0.1% of formaldehyde or formaldehyde donors expressed and formaldehyde.

- ii. Certified products must not contain more than 0.1 % by mass of in-use solution of any ingredient that is classified as a known or suspected endocrine disruptor, mutagen or teratogen, as defined above.
- iii. Certified products must not contain more than 1 % by mass of in-use solution of any ingredient that is classified as a possible carcinogen (IARC class 2b), possible mutagen or contact sensitizer as defined above.
- iv. Certified products may not contain a total amount of phosphates (as sodium triphosphate – STPP) at the recommended dosage in excess of 25ml per Litre.

### 3.2.3 Surfactants and Enzymes

- I. All surfactants must be readily biodegradable as defined above.
- II. All surfactants must be anaerobically degradable as defined above.
- III. Where used or applicable, micro-organisms used for enzyme production shall not be detectable in the final enzyme preparation.

### 3.2.4 Fragrances and Colourants

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

Fragrances containing mitromusk compounds must not be used because of possible carcinogenic risks. This shall include:

Common Name	CAS number
Moskusxylene	81-15-2
Moskusambrette	83-66-9
Moskene	116-66-5
Moskustibetin	145-39-1
Moskusketone	81-14-1

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 10049:2012). A copy of the Directive(s) is available at:

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

## 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 wash is less than 21g / 150L or 0.14g per litre.

### 3.3.2 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.

### 3.3.3 Other Claims

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

### 3.4 Packaging and Labeling

#### 3.4.1 **Recyclability**

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 ISO 11469.

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.

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

Chlorinated or halogenated plastics must not be used in product packaging.

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

Used packaging shall be able to be recycled 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.
- A list of product ingredients which complies with the requirements of the EEC Commission Recommendation for Labelling of Detergents and Cleaning Products.
- The packaging and labeling of the product must meet the requirements of the South African National Consumer Protection Act.
- Environmentally responsible disposal instructions.
- If the product is to be exported, instructions for safe chemical use must be provided in all appropriate languages.

### 3.5 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 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.