



UL 7004

SUSTAINABILITY STANDARD

Household Cooking Appliances

Standard for Sustainability Standard for Household Cooking Appliances, UL 7004

Second Edition, Dated January 31, 2017

Summary of Topics

This revision of AHAM 7004/CSA R7004-17/UL 7004 dated November 30, 2022 is being issued to remove the ANSI logo and approval from the title page. No other changes have been made.

As noted in the Commitment for Amendments statement located on the back side of the title page, UL, AHAM, and CSA are committed to updating this harmonized standard jointly. However, the revision pages dated November 30, 2022 will not be jointly issued by UL, AHAM, and CSA as the revisions address a UL administrative change.

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AHAM 7004-2017
Second Edition



CSA Group
CSA R7004-17
First Edition



Underwriters Laboratories Inc.
UL 7004
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Sustainability Standard for Household Cooking Appliances

January 31, 2017

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I

Commitment for Amendments

This standard is issued jointly by the Association of Home Appliance Manufacturers (AHAM), the Canadian Standards Association (operating as "CSA Group"), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to AHAM, CSA Group, or UL at anytime.

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Preface

This is the first edition of CSA R7004, the second edition of UL 7004, and the most recent version of AHAM 7004, Sustainability Standard for Household Cooking Appliances.

This harmonized standard was prepared by the Association of Home Appliance Manufacturers, (AHAM), CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the Technical Harmonization Committee are gratefully acknowledged.

This standard was prepared by CSA Technical Committee on Sustainability of Household Cooking Appliances under the jurisdiction of CSA Strategic Steering Committee on Business Management and Sustainability and has been formally approved by the CSA Technical Committee.

The environmental performance of household cooking appliances is commonly evaluated on the single environmental attribute of electricity consumption during use. This Standard takes a multi-attribute, life cycle approach to measuring a broad spectrum of environmental and social impacts of household cooking appliances as a means of assessing sustainability performance. The multi-attribute approach was developed using representative product life cycle assessment (LCA) information along with other key factors such as hot-spot or hot-button analyses influencing product environmental performance. The attributes and criteria in this Standard are drawn from a much larger list and reflect the understanding of the attributes and criteria that are most prominent in sustainable performance and over which the manufacturers of these products have control. This approach, detailed in Annex A, determined the environmental attributes of household cooking appliances for inclusion in this Standard. The authors acknowledge that revisions to this standard will be considered periodically and that future editions may consider a broader range of sustainability criteria.

It has been contemplated by all parties that this Standard will be updated to reflect new U.S. Department of Energy or Natural Resources Canada minimum energy performance standards for household cooking appliances products. Many of the measurements included in this Standard are unique and have not been conducted on other appliance categories. The Standard's committees expect to learn much from the application of this Second Edition in subsequent years. The use of this Standard and self-assessment by household cooking appliances manufacturers and external third-party assessment bodies will be used to improve the Standard in drafting the second and subsequent editions.

This Standard was written specifically for products placed on the market in the United States and Canada. At the present time, a number of the calculations are based on systems and designs of products in North America.

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Foreword

The Association of Home Appliance Manufacturers (AHAM), CSA Group, and Underwriters Laboratories Inc. (UL), as a Task Force, under the jurisdiction of the AHAM Major Appliance Engineering Council, CSA Group Strategic Steering Committee on Business Management and Sustainability, and UL Environment, collaborated with experts and stakeholders to initiate development of product standards for home appliances as the first step in a broader product sustainability initiative. The overall goal of this family of standards is to provide meaningful product sustainability performance information to consumers and stakeholders. It is intended for this initiative to drive innovation and continual improvement in the sustainability performance of home appliances by empowering consumers. This Standard is based on product life cycle information and consideration for consumer expectations. It provides information for consumers, governments, retailers, and other program developers to help distinguish between products based on environmental criteria.

AHAM, CSA Group, and UL would like to acknowledge the assistance of PE INTERNATIONAL and Five Winds Strategic Consulting whose staff served as experts and project managers.

AHAM

The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry in the U.S. and Canada. AHAM's membership includes over 150 companies throughout the world. AHAM is also a standards development organization, accredited by the American National Standards Institute (ANSI) and authors numerous appliance performance testing standards used by manufacturers, consumer organizations and governmental bodies to rate and compare appliances. AHAM administers several appliance rating verification programs, employing third party laboratories. AHAM's consumer safety education program has educated millions of consumers on ways to properly and safely use appliances such as portable heaters, clothes dryers, and cooking products.

CSA GROUP

Canadian Standards Association (operating as "CSA Group") is a not-for-profit membership-based association serving business, industry, government, and consumers in the global marketplace. As a solutions-oriented organization, we work around the world to develop standards that address real needs, such as enhancing public safety and health, advancing the quality of life, helping to preserve the environment, and facilitating trade.

UL

Underwriters Laboratories Inc. (UL) is a global independent safety science company offering expertise across five key strategic businesses: Product Safety, Environment, Life & Health, Knowledge Services and Verification Services. Our breadth, established objectivity, and proven history mean we are a symbol of trust and enable us to help provide peace of mind to all. In addition to being a leader in safety science, UL is a world leader in standards development for safety, health, and sustainability. Through more than a century of involvement in the standards and conformity assessment community, UL is recognized for its unrivaled technical expertise and our Standards are used to evaluate and certify products and systems. UL Standards are used by manufacturers to help them design products and systems to meet the requirements for certification, by code development organizations that adopt and reference them in their codes, and by certification organizations that utilize UL requirements for their own certifications.

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1 Scope

1.1 This Standard covers the following products:

a) built-in cook tops:

i) electric powered

1) radiant;

2) halogen;

3) coil;

4) induction; and

5) grill;

ii) gas powered:

1) sealed burner; and

2) open burner;

b) built-in ovens:

i) electric powered:

1) single cavity; and

2) multiple cavity;

ii) gas powered:

1) single cavity; and

2) multiple cavity;

c) ranges:

i) electric powered:

1) free standing;

2) built-in;

3) single cavity; and

4) multiple cavity;

ii) gas powered:

1) free standing;

2) built-in;

3) single cavity; and

4) multiple cavity;

iii) hybrid gas/electric:

- 1) free standing;
- 2) built-in;
- 3) single cavity; and
- 4) multiple cavity;

The above product categories include technologies such as convection, non-convection, and steam products, but specifically exclude microwave technology.

1.2 This Standard does not cover any microwave oven product, or any product that includes a microwave oven in combination with any of the products listed in Clause 1. This standard does not cover portable appliances that are designed for an electrical supply of 120 volts.

2 General

2.1 In this Standard, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; "should" is used to express a recommendation or that which is advised but not required; and "may" is used to express an option or that which is permissible within the limits of the Standard. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

3 References

3.1 Normative references

3.1.1 Where reference is made to any Standards, such reference shall be considered to refer to the latest editions and revisions thereto available at the time of printing, unless otherwise specified.

AHAM (Association of Home Appliance Manufacturers)

AHAM OV-1-2011
Microwave and Conventional Oven (Volume)

AHAM ER-1-2012
Household Electric Ranges

Canadian Competition Bureau

Competition Act, R.S.C. 1985, c. C-34

Consumer Packaging and Labelling Act, R.S.C. 1985, c. C-38

CDP (Carbon Disclosure Project)

Investor Initiatives

Supply Chain Program

Water Program

CENELEC (European Committee for Electrotechnical Standardization)

EN 50581:2012

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

CSA Group

CSA PLUS 14021

Environmental claims: A guide for industry and advertisers

European Parliament and the Council of the European Union

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (cited as Directive 2011/65/EU)

Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) (cited as EMAS Regulation)

Government of Canada

Energy Efficiency Regulations, SOR/94-651

Government of USA

Code of Federal Regulations, Title 16, Part 260, Guides for the Use of Environmental Marketing Claims (cited as Green Guides)

National Appliance Energy Conservation Act, 1987

GRI (Global Reporting Initiative)

Sustainability Reporting Guidelines

ISO (International Organization for Standardization)

11469

Plastics – Generic identification and marking of plastics products

14001

Environmental management systems Requirements with guidance for use

14020

Environmental labels and declarations – General principles

14024

Environmental labels and declarations – Type I environmental labelling – Principles and procedures

14025

Environmental labels and declarations – Type III environmental declarations – Principles and procedures

14040

Environmental management – Life-cycle assessment – Principles and framework

14044

Environmental management – Life-cycle assessment – Requirements and guidelines

14050

Environmental management – Vocabulary

14064-1

Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

14064-2

Greenhouse gases Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements

ISO/IEC (International Organization for Standardization/International Electrotechnical Commission)

6107-2

Water Quality – Vocabulary – Part 2

17000

Conformity assessment – Vocabulary and general principles

Guide 67

Conformity assessment – Fundamentals of product certification

SAE (Society of Automotive Engineers)

J 1344

Marking of Plastic Parts

TCR (The Climate Registry)

General Reporting Protocol, Version 2.1, January 2016

UL (Underwriters Laboratories)

UL 113

Procedure for the Preparation of a Toxicological Assessment

UL 2789

Environmental Claim Validation Procedure for Calculation of Estimated Recyclability Rate

United Nations World Commission on Environment and Development

Report of the UN World Commission on Environment and Development: Our Common Future, 1987

WRI (World Resource Institute)

Aqueduct Water Risk Atlas (available at <http://www.wri.org/resources/maps/aqueduct-water-risk-atlas>)

WRI and WBCSD (World Resource Institute and World Business Council on Sustainable Development)

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition, March 2004

WTO (World Trade Organization)

Technical Barriers to Trade (TBT) Agreement

3.2 Informative references

3.2.1 A list of informative references to laws and regulations for cooking appliances is provided in Annex [B](#).

4 Definitions

4.1 The following definitions shall apply in this Standard:

4.2 **Accreditation** – third-party attestation related to a conformity assessment body conveying a formal demonstration of its competence to carry out specific conformity assessment tasks.

Note: *These tasks include sampling and testing, inspection, certification, and registration. [ISO/IEC 17000, Conformity assessment – Vocabulary and general principles]*

4.3 **Attestation** – issue of a statement, based on a decision following review, that fulfillment of specified requirements has been demonstrated. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.4 **Attribute** – a characteristic of a product that has a direct influence on the sustainable use of resources and environmental impact of the product.

4.5 **Automatic feature** – a feature within the appliance that self-executes without any required action from the user.

4.6 **Brand owner** – a company that manages a brand name. This company might or might not have engineering, manufacturing, quality assurance activities. This company might be an original equipment manufacturer (OEM) but might also purchase a finished product from an OEM and conduct sales, marketing, and management of the brand name.

4.7 **Certification** – third-party attestation related to products, processes, or persons that convey assurance that specified requirements have been demonstrated. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.8 **Criteria** – the requirements used to assess the performance of the product as found in the Standard. [Environmental Labels and Declarations – Type I Environmental Labelling – Principles and Procedures, ISO 14024]

4.9 Dematerialization – the reduction of the mass of and/or number of materials used in the production of the final product.

Note: For appliances, a more appropriate measure is the more efficient use of raw materials.

4.10 Direct greenhouse gas emission (scope I) – see "Greenhouse gas (GHG) scopes," Clause [4.23](#).

4.11 Efficient use of raw materials – the reduction of the mass of and/or number of materials used in the production of the final product. Some standards use the term "Dematerialization."

4.12 Energy indirect greenhouse gas emission (scope II) – see "Greenhouse gas (GHG) scopes," Clause [4.23](#).

4.13 Environmental management system (EMS) – part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects. [Environmental management – Vocabulary, ISO 14050]

4.14 EU eco-management and audit scheme (EMAS) – an environmental performance management tool covered in the *EMAS Regulation (EC) No. 1221 of the European Parliament and of the Council of 25 November 2009*

4.15 Eutrophication – enrichment of water, both fresh and saline, by nutrients, especially compounds of nitrogen and phosphorus, that will accelerate the growth of algae and higher forms of plant life.

4.16 First party – generally the person or organization that provides the object. In the case of this Standard, the first party is the appliance manufacturer. Also see "Third party", Clause [4.42](#).

4.17 First-party declaration – procedure by which a first party conveys assurance (self-declaration) that the object of conformity fulfills specified requirements. [Reprinted from Conformity assessment – Vocabulary and general principles, ISO/IEC 17000]

4.18 Gate-to-gate – suggests that the data set or study only covers the boundary of one company and that nothing upstream or downstream of that organization is considered.

4.19 Global warming potential (GWP) – factor describing the radiative forcing impact of one mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide over a given period of time.

4.20 Greenhouse gas (GHG) – gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. [Environmental management – Vocabulary, ISO 14050]

4.21 Greenhouse gas (GHG) scopes –

Direct greenhouse gas emission (WRI scope I) – GHG emission from greenhouse gas sources owned or controlled by the organization.

Energy indirect greenhouse gas emission (WRI scope II) – GHG emission from the generation of imported electricity, heat, or steam consumed by the organization.

Other indirect greenhouse gas emission (WRI scope III) – GHG emission, other than energy indirect GHG emissions, which is a consequence of an organization's activities, but arises from greenhouse gas sources that are owned or controlled by other organizations. [Greenhouse gases