UL 2887

Outline of Investigation for Sustainability for Wearable Electronics Products

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Summary of Topics

This first issue of the Outline of Investigation for Sustainability for Wearable Electronics Products, Subject 2887, is to establish multiple attribute sustainability criteria for wearable electronics, including the packaging and all components shipped in the box with the device. Separate requirements for the Wearable Electronics Device, external power supply, cables and other accessories shipped in the box are included

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CONTENTS

INTRODUCTION

1 General 5
2 Scope 5
3 Units of Measurement 6
4 Undated References 6
5 Glossary 6

COMPLIANCE, EVALUATION AND ASSESSMENT CRITERIA

6 Compliance Documentation 8
7 Evaluation and Assessment Criteria 9
7.1 General 9
7.2 Levels of Achievement 9

MATERIALS

8 Supply Chain Management of Materials 10
9 Sustainable Use of Raw Materials 10
9.1 Plastics 10
10 ENERGY USE REQUIREMENTS 11

HEALTH AND ENVIRONMENT

11 Substances of Concern 12
12 Dermal Contact Assessment 14
13 Life Cycle Assessment 16
13.1 Conducting a Life Cycle Assessment 16

END OF LIFE MANAGEMENT AND EXTENSION OF USEFUL LIFE

14 End of Life Management 16

PACKAGING

15 Packaging 18

MANUFACTURING AND OPERATIONS

16 Corporate Sustainability (CS) 20
17 Environmental Health and Safety (EHS) Policies 21
18 Supply Chain Impacts 21

INNOVATION

19 General 21

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APPENDIX A

Achievement Matrix

APPENDIX B

Materials Inventory

APPENDIX C

C1 External References C1

APPENDIX D(Informative)

HEALTH AND ENVIRONMENT

AD11 Substances of Concern D1
AD11.8 Required – Textile leather accessories shall meet the following criteria. D1

INNOVATION

AD19 General D2

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INTRODUCTION

1 General

1.1 The manufacture and use of electronics creates an environmental burden that these requirements are intended to improve. When these requirements were first created, defining the sustainability of wearable electronics had not been addressed. These requirements aspire to address sustainability for wearable electronic products.

1.2 The impacts of extraction through production and ultimate disposal are often left to a broad sweeping statement of sustainability without a true definition of what that means. There are various alternative constructions, materials, manufacturing practices and even disposal options that can minimize environmental burdens.

1.3 These requirements provide a life cycle and human health based approach to setting the criteria to be achieved. These requirements reflect the major areas of impact and provide a criteria structure that will allow manufactures to demonstrate that any product meeting these requirements has made significant gains towards becoming sustainable.

2 Scope

2.1 These requirements establish multiple attribute sustainability criteria for wearable electronics products, including the packaging and all components shipped in the box with the product. Separate requirements for the wearable electronics product, external power supply, cables and other accessories shipped in the box are included. Wearable electronics are any electronics product primarily intended to be worn by the user either as a part of clothing or in direct body contact. Example products include smart watches, non-medical (consumer) heart or body function monitors, glasses with embedded electronics and electronics embedded in clothing. Other electronics products having similar characteristics and usage patterns can also be included in the scope of the standard.

2.2 These requirements apply to products that are or will be available for purchase at the time of certification.

2.3 The criteria in these requirements were developed based on the life cycle stages of wearable devices and similar electronics. Sustainability factors considered in these requirements are: materials, packaging, manufacturing and operations, energy efficiency of the external power supply, health and environment, and end of life management. Credit for innovations in these, or other factors not listed, is also addressed in these requirements.

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3 Units of Measurement

3.1 For the purposes of these requirements, values shall be reported in accordance with the requirements of the specific criteria and shall be in metric units. If a manufacturer's choice of units deviates, that change shall be documented and justified as to the reason and relevance for that change.

4 Undated References

4.1 Any undated reference to a code or standard appearing in these requirements shall be interpreted as referring to the latest edition of that code or standard. The exception shall be in the case where the criterion explicitly states a certain version or date to be used.

5 Glossary

5.1 For the purpose of these requirements, the following definitions apply:

5.2 ALTERNATIVE RESOURCES – Resources other than raw or virgin material, including but not limited to bio-based materials, rapidly renewable materials, recycled/reclaimed content.

5.3 BIO-BASED CARBON – Carbon materials that are derived in whole or part from biomass resources. Biomass resources are organic materials that are available on a renewable or recurring basis such as crop residues, wood residues, grasses, and aquatic plants.

5.4 CHEMICAL ABSTRACT SERVICES (CAS) NUMBER – A unique numerical identifier assigned to every chemical by the CAS division of the American Chemistry Council.

5.5 CONFLICT ZONES – Regions which are characterized by conditions of armed conflict and human rights abuses, and receive funding from the revenue of militia-controlled mines.

5.6 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) – Part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects. (Reprinted from Environmental management - Vocabulary, ISO 14050)

5.7 EUROPEAN UNION (EU) HAZARD CLASSIFICATION – The EU's system of classification, labeling and packaging chemical substances and mixtures. The Classification, Labeling and Packaging (CLP) Regulation incorporates the classification criteria and labeling rules agreed upon at the United Nations level in the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

5.8 EUTROPHICATION – The process whereby a body of water receives excess nutrients that stimulate excess plant growth, usually resulting in the depletion of dissolved oxygen.

5.9 GLOBAL WARMING – The sustained increase of the average temperature of the earth's atmosphere, resulting in climatic change, due to the increased emission of greenhouse gases.

5.10 GLOBAL REPORTING INITIATIVE (GRI) – A sustainability reporting framework that can be used to measure and report on the economic, environmental, and social performance of an organization.

5.11 HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS) – A numerical hazard rating developed by the National Paint & Coatings Association (NPCA) as a compliance aid for the Occupational Safety & Health Administration (OSHA) Hazard Communication Standard.

5.12 HOMOGENEOUS – As defined in UK RoHS Guidance Producer Support Booklet.

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