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NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 13.020

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GB/T 32885-2016

Guide for resources utilization evaluation of waste electrical and electronic products recycler

废弃电器电子产品处理企业资源化水平评价导则

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Issued on: August 29, 2016

Implemented on: March 01, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;**

Standardization Administration of PRC.

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by AND shall be under the jurisdiction of the National Standardization Technical Committee for Environmental Standardization (SAC/TC 297) for Electrical and Electronic Products and Systems.

The drafting organizations of this standard: China Quality Certification Center, Shenzhen Institute of Measurement Quality Testing, Ministry of Environmental Protection Solid Waste and Chemicals Management Technology Center, Jingmen City Green New Materials Co., Ltd., Shanghai Jinqiao Environmental Protection Co., Ltd., Qingdao Xintiandi Ecological Cycle Technology Co., Ltd., China Household Electrical Appliances Research Institute.

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Guide for resources utilization evaluation of waste electrical and electronic products recycler

1 Scope

This standard specifies the terms and definitions, basic principles and requirements, evaluation indexes, and graded evaluation standards for the resources utilization evaluation of waste electrical and electronic products recycler, wherein the evaluation indexes and grade evaluation standards only provide the basic framework and method, AND the standard users shall conduct evaluation and classification separately in accordance with the technical specifications of the specific products.

This standard applies to the resources utilization evaluation of the recycler by the waste electrical and electronic products recycler, industry associations, third-party agencies and industry authorities; AND other industries can refer to it.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

GB/T 19001 Quality management system - Requirements

GB/T 24001 Environmental management system - Requirements with guidelines for use

GB/T 28001 Occupational health and safety management systems - Requirements

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Waste electrical and electronic products

that need to be processed outside the product dismantling line (e.g. motor), or those that containing hazardous substances (e.g. lead-containing glass);

- The recycling shall separate as far as possible single material or high compatibility material which can be directly used for raw material production, such as single metal, single plastic, two or more high compatibility thermoplastics;
- As for the treatment and disposal, it shall adopt current best available techniques and the necessary measures, or the new technologies developed by the enterprise, in order to ensure that the human health and environment pollution during treatment and disposal comply with the relevant standards, AND avoid contaminants affecting the other materials in the treatment process.

5 Evaluation index

5.1 General

The resources utilization evaluation of waste electrical and electronic products recycler is based on three indicator categories: management level, technology level, and resource utilization level. AND each category is composed of several indicators. Generally, before the evaluation, the recycler shall provide the statistics of the relevant data of its resource utilization level; AND the data filling and reporting may refer to the Recycler Information Table in Appendix A and the Statistic Information of Waste Product Treatment in Appendix B.

5.2 Management level

5.2.1 Data information management

The recycler shall establish the data information management system complying with the management provisions of relevant departments, AND track and record the entire flow process of the waste electrical and electronic products in the recycler as well as the production operations, including waste electrical and electronic products in-factory, warehousing in, warehousing out, stock cancelling, and stock, as well as the treatment process, warehousing-in, warehousing-out, stock, and exit-factory information of the disassembled products.

5.2.2 Disassembled product tracking management

The recycler shall conduct tracking management against the disassembled products which are sold or transferred to the downstream resource-based

R_{cyc} , waste products - The recycling rate of waste product, %;

m_{cyci} - The mass of the i^{th} recycle or reusable component and/or material, in kilograms (kg);

n - The total number of categories of components and/or materials that are recycled (reused);

m_v - The total mass of the waste products, in kilograms (kg).

Note: The recycling rate of waste products is the indicator that actually occurred or realized by the recycler, NOT the theoretical calculation value.

Among them, the waste product recycling rate calculation principles include:

- Recycling rate shall be calculated in accordance with the total amount of waste products and disassembled products in the evaluation period;
- The mass of the reused components/material complying with relevant standard requirements can be included into the numerator;
- The components included in the National List of Hazardous Wastes (whether or not they are disposed of by the recycler) are not included in the numerator;
- The mass of the components/materials which can be recycled using the current technology BUT not actually recycled cannot be included in the numerator;
- The recycler shall, based on different types of products (materials), establish the recycling statistical information table, as shown in Appendix B. The mass of the recycled components/materials which do not included into the recycling statistical information table cannot be included in the numerator;

Note: The aforementioned “numerator” refers to the numerator in equation (2).

5.4.2 Material output

The output of such materials as waste products copper and copper cables, iron and ferroalloy, aluminum and aluminum alloys, compatible thermoplastics and other materials shall be calculated in accordance with the equation (3).

$$M_{\text{material output}} = \frac{m_{\text{disassembled}}}{m_v} \dots\dots\dots (3)$$

ene PE-HD																
Polypropylene PP	4	2	1	2	4											

Table D.1 (Continued)

Thermoplastics	Low density polyethylene PE-LED	Linear low density polyethylene PE-LLD	Very low density polyethylene PE-VLD	Polyethylene PE	High-density polyethylene PE-HD	Polypropylene PP	Ethylene & Propylene Plastics E/P	Polystyrene PS	Styrene & acrylonitrile plastic SAN	Acrylonitrile & Butadiene & Styrene Plastics ABS	Polyvinyl chloride PVC	Polyamide PA	Polycarbonate PC	Polymethylmethacrylate PMMA	Polybutylene terephthalate PBT	Polyethylene terephthalate PET
Ethylene & Propylene Plastics E/P	4	4	1	3	4	1	-	-	-	-	-	-	-	-	-	-
Polystyrene PS	4	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-
Styrene & acrylonitrile plastic SAN	4	4	4	4	4	4	4	1	-	-	-	-	-	-	-	-
Acrylonitrile & Butadiene & Styrene Plastics ABS	4	4	4	4	4	4	4	4	1	-	-	-	-	-	-	-

Table D.1 (Continued)

Thermoplastics	Low density polyethylene PE-LED	Linear low density polyethylene PE-LLD	Very low density polyethylene PE-VLD	Polyethylene PE	High-density polyethylene PE-HD	Polypropylene PP	Ethylene & Propylene Plastics E/P	Polystyrene PS	Styrene & acrylonitrile plastic SAN	Acrylonitrile & Butadiene & Styrene Plastics ABS	Polyvinyl chloride PVC	Polyamide PA	Polycarbonate PC	Polymethylmethacrylate PMMA	Polybutylene terephthalate PBT	Polyethylene terephthalate PET
Polybutylene terephthalate PBT	4	4	4	2	4	4	4	4	4	4	4	4	1	4	-	-
Polyethylene terephthalate PET	4	4	4	3	4	4	4	4	4	4	4	4	1	4	3	
Styrene butadiene plastic SB	4	4	4	4	4	4	4	1	3	2	3	3	4	3	4	4
Note: 1 - Excellent; 2 - Good; 3 - Acceptable; 4 - Incompatible.																

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