

ICS 29.035.01
CCS K 15



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 21223.2-2015

**Guide for the statistical analysis of ageing test data -- Part 2:
Validation of procedures for statistical analysis of censored
normally distributed data**

老化试验数据统计分析导则 第2部分：截尾正态分布数据统计分析的验证程序
(English Translation)

Issued on: July 3, 2015

Implemented on: February 1, 2016

Issued by: Standardization Administration of China

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Foreword

GB/T 21223 "aging test statistical analysis Guide" includes the following two parts.

--- Part 1. based on mean values of normally distributed test results on the way;

--- Part 2. cut normal statistical analysis of data verification.

This is Part 2 GB/T 21223 of.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses redrafted Law Amendment uses IEC/T R60493-2. section 2010 "aging test statistical analysis Guide 2.

Censored normal statistical analysis of the verification process. " this part of IEC/T R60493-2. Compared to 2010, the standard for ease of use, made the following changes.

--- Remove the "4.1.3 Description of the computer program," This is the body of the IEC/T R60493-2 instructions accompanying CD-ROM's, to provide a software program example shows;

--- Delete the words "Annex C (informative) illustrates an example data set of statistical functions," This program is divided into graphs generated using the calculated the example shows;

--- Removed "Appendix D (informative) computer program," Appendix D Appendix C is

generated illustrated calculation program.

Consistent correspondence between this part of the normative references the following documents.

--- GB/T 11026.3-2006 heat resistance, electrical insulating materials - Part 3. Calculation procedure thermal characteristic parameters (IEC 60216-3:2006, IDT);

--- GB Part 7/T 11026.7-2014 heat resistance, electrical insulating materials. Part 7 of the heat-resistant electrical insulating materials Score. determine the relative thermal index of insulation material (RTE) (IEC 60216-5:2008, IDT);

--- GB Part 8/T 11026.8-2014 heat resistance, electrical insulating materials. Part 6 of the heat-resistant electrical insulating materials Score. determining the heat insulating material index (TI and RTE) (IEC 60216-6:2006, IDT) method using a fixed time limit;

--- GB/T 21223.1-2015 aging test statistical analysis Guide - Part 1. Create the normal level of the test results the method (IEC 60493-1:2011, IDT) on the basis of the mean.

This part is proposed by the China Electrical Equipment Industrial Association.

This part of the National Electrical insulation materials and insulation systems assessment Standardization Technical Committee (SAC/TC301) centralized.

This section is drafted. Electrical Machinery Industry Beijing Technology and Economy Institute, Yantai, China Roth Special Paper Co., Ltd., Cooper Electric Sub Technology (Shanghai) Co., Ltd.

Introduction

This section provides an overview of the aging nature of the estimation process, including aging test drive specific environmental stress (such as temperature, radiation, and partial discharge) under General file sequence.

In many cases, the specific nature is determined as a function of time for different aging under stress; a function of time can also be selected at the end of the standard each aging stress found. When the fight against aging stress period of downtime can be used to estimate exposure to similar stress predetermined sample failure Room or estimates may lead to stress failure in sample time.

Physical and chemical laws controlling aging phenomenon may launch an assumption. at a fixed aging stress, or aging time and performance Between specific mathematical functions (such as square root or logarithmic), examine the nature of the presence of a linear relationship with the aging time.

Analysis of variance, analysis of covariance and regression analysis mathematical procedure to determine the property value, the aging time and aging temperature exposure.

Sometimes, due to time constraints or measured properties, the property value can not be measured, such data is referred to as "censored data." Mathematical program is widely common, but only to complete (not truncated) data is valid. This section presents the verification process censored data.

Aging test statistical analysis Guide Part 2. cut normal statistical analysis Verification procedures

1 Scope

GB/T 21223 provisions of this part of the normal operation of the design data truncated group and statistical procedures determined.

Operation complete data similar relationship has been tested and made completely censored data group "mixed" or not completely censored data set that can be used the same methods of analysis.

Note that affect the data set size and the degree of change and censored data set size inconsistency generated.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

IEC 60216-3 Electrical insulating materials - Thermal resistance - Part 3. Calculation procedure thermal characteristic parameters (Electricalinsulating materials-Thermalenduranceproperties-Part 3. Instructionsforcalculatingthermalendurance characteristics) IEC 60216-5 Electrical insulating materials - Thermal resistance - Part 5. determine the relative thermal index of insulation material (RTE) [Electricalinsulating materials-Thermalenduranceproperties-Part 5. Determinationofrelative thermalenduranceindex (RTE) ofaninsulatingmaterial] IEC 60216-6 Electrical insulating materials - Thermal resistance - Part 6. Determine heat index of insulating material using the fixed time frame method (TI and RTE) [Electricalinsulatingmaterials-Thermalenduranceproperties-Part 6. Determination ofthermalenduranceindices (TIandRTE) ofaninsulatingmaterialusingthefixedtimeframemeth-od] IEC 60493-1 aging test data statistical analysis Guide Part 1. the establishment of normal distribution based on the average of the test results Method (Guideforthestatisticalanalysisofageingtestdata-Part 1. Methodsbasedonmeanvaluesof normalydistributedtestresults)

3.1 Terms and Definitions

The following terms and definitions apply to this document.

3.1.1

Ordered data According to a set of data in order, from the proper perspective, this column of data in each equal to or greater than the previous one.

Note: in this section, "Ascending" indicates that the data to the first data is the smallest arranged.

3.1.2

Order statistics order-statistic each individual value in an ordered set of data called order statistics, with its numerical position in the sequence is represented.