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

GB/T 19608.1-2022

**Classification of special environmental condition - Part 1: Dry
heat**

特殊环境条件分级 第1部分：干热

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Foreword

This document was issued on 11 July 2022 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 February 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 19608.1-2022 covers the environmental parameters of a dry heat environment and the severity levels a product is classified against for it - an overview of what such an environment consists of, then severity levels for each family of conditions: the climatic conditions marked K, the special climatic conditions marked Z, the chemically active substances marked C, the mechanically active substances marked S, the mechanical conditions marked M, and the biological conditions marked B. It applies to products stored, transported, handled and used in dry heat, and it notes that a location with climate protection may still be exposed to the outside climate. Heat by itself is only part of what a desert or an arid inland site does to equipment: the daily temperature swing, the solar load, the wind-blown sand and dust that grind seals and block filters, and the low humidity that

changes how materials age all act together, and equipment specified only to a peak temperature still fails there. Naming a level from each family gives a designer and a purchaser one shorthand for the whole exposure. Part 1 of the series. Written for equipment designers, specifiers writing tenders for arid regions, and test houses setting conditioning programmes.

This document specifies the environmental parameters and severity classification of products under dry heat environmental conditions.

This document applies to products that are stored, transported, handled, and used in dry and hot environments. Applicable items and levels can be selected according to the environmental shock and degree of the product.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 4798.10, Environmental conditions existing in the application of electric and electronic products - Guidance

GB/T 20625, Special environmental condition - Terminology

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 20625 apply.

4 Overview of environmental conditions

The dry heat environmental conditions are described by climatic environmental conditions (K), special climatic environmental conditions (Z), biological environmental conditions (B), chemically active substances (C), mechanically active substances (S) and mechanical environmental conditions (M) respectively.

Environmental condition classification allows for possible combinations of various environmental conditions. It can truly reflect the shock of environmental conditions on product storage, transportation, loading-unloading, and use. For some environmental

parameters, it is difficult to quantify its severity level.

According to GB/T 4798.10, the environmental condition level is characterized by the following identifications:

- The first digit identifies the application condition (1 means storage; 2 means transportation and loading-unloading; 3 means fixed use in places with climate protection; 4 means fixed use in places without climate protection);
 - Letters: Climatic environmental conditions (K), special climatic environmental conditions (Z), biological environmental conditions (B), chemically active substances (C), mechanically active substances (S) and mechanical environmental conditions (M);
 - Another digit identifies the severity. Generally, the larger the value, the more severe the condition. A level can be further divided into H (high) and L (low). For example, temperatures may be very low, but high ambient conditions will not occur.
- Example: Level 2K3, in which: 2 means transportation and loading-unloading; K means climatic environmental conditions; 3 means severity level.

5 Severity level for various environmental conditions

5.1 Climatic environmental conditions (K)

Choose the right level. It is necessary to pay attention to whether the climatic environmental conditions of the place with climate protection are affected by the environment of the place without climate protection, especially the temperature and solar radiation.

The severity levels of climatic environmental conditions are shown in Table 1.

1K10: Suitable for indoor storage under dry and hot environmental conditions, without temperature and humidity control.

1K11: Suitable for outdoor sheltered storage under dry and hot environmental conditions.

1K12: Suitable for storage without shelter outdoors under dry and hot environmental conditions.

2K10: Suitable for climate-protected transport and loading-unloading in dry and hot ambient conditions, without temperature and humidity control in unventilated enclosures.

2K11: Suitable for transport and loading-unloading without weather protection in hot and dry ambient conditions.

where industrial production activities are distributed throughout the area, or in cities with heavy traffic.

2C3: Suitable for transportation and loading-unloading in areas close to industrial chemical pollution sources.

3C1: Suitable for indoor stationary use in rural and urban areas with low industrial activity and moderate traffic. Heating in dense urban areas in winter can lead to increased pollution.

3C2: Suitable for indoor stationary use with general pollution levels, with industrial activities distributed throughout the region or in cities with heavy traffic.

3C3: Suitable for indoor stationary use near industrial sources of chemical emissions.

3C4: Suitable for indoor fixed use in industrial production plants, where high concentrations of chemical pollutants may occur.

4C1: Suitable for outdoor fixed use in rural and urban areas with a small amount of industrial pollution and low traffic.

4C2: Suitable for outdoor fixed use in cities with industrial pollution and heavy traffic.

4C3: Suitable for outdoor fixed use close to chemical pollution sources.

4C4: Suitable for outdoor fixed use in industrial processing plants. Chemical pollutant emissions are in high concentrations.

2S2: Suitable for transport and loading-unloading where limited (anti-sand) measures have been taken to minimize the presence of sand and dust, such as enclosed transport and loading-unloading.

2S3: Suitable for unenclosed transport and loading-unloading near sources of sand and dust, where no special precautions are taken to reduce the presence of sand and dust.