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

GB 38508-2020

**Limits for volatile organic compounds content in cleaning
agents**

清洗剂挥发性有机化合物含量限值

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Foreword

All the technical contents of this Standard are mandatory. 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 Ministry of Industry and Information Technology of the People's Republic of China. Limits for volatile organic compounds content in cleaning agents

1 Scope

GB 38508-2020 is the Chinese national standard on limits for volatile organic compounds content in cleaning agents, in the field of chemical technology. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 4 March 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 December 2020. Classification: ICS 71.100.99, CCS G85. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the product classification of cleaning agents, limit requirements, inspection methods and packing marks of volatile organic compounds (VOC). This Standard applies to cleaning agents containing volatile organic compounds and produced

and used in industrial production and service activities. This Standard does not apply to cleaning agents used in aerospace, nuclear industry, military industry and semiconductor (including integrated circuit) manufacturing.

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 4472 Determination of density and relative density for chemical products

GB/T 6283 Chemical products - Determination of water Karl Fischer method (general method)

GB/T 6680 General rules for sampling liquid chemical products

GB/T 13173-2008 Surface active agents - Detergents - Testing methods

GB/T 23990-2009 Determination of the contents of benzene, toluene, ethylbenzene and xylene in coatings by gas chromatography

GB/T 23992-2009 Determination of chlorohydrocarbon content in coatings - Gas chromatographic method

GB/T 23993 Determination of formaldehyde content of waterborne coatings - Spectrophotometric method with acetylacetone

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1 cleaning agent Liquid chemicals or agents that are used in industrial production and service activities to remove dirt (including grease, paint, ink, glue, carbon deposits, dust, etc.) on the surface of devices, equipment, facilities and products, using the principles such as chemical dissolution, complexation, emulsification, wetting, penetration, dispersion, solubilization and peeling.

3.2 volatile organic compounds VOC Organic compounds that have an initial boiling point less than or equal to 250 °C and participate in atmospheric photochemical reactions under the standard atmospheric pressure of 101.3 kPa, or the organic compounds that are determined according to relevant provisions. NOTE. Adapted from GB 24408-2009, definition 3.1; GB 37822-2019, definition 3.1.

3.3 volatile organic compounds content VOC content The mass of volatile organic compounds in the cleaning agent determined under specified conditions. NOTE. Adapted from GB 24408-2009, definition 3.2.

3.4 low-volatile-organic-compounds-content cleaning agent Cleaning agents with low volatile organic compounds content. NOTE. Low-volatile-organic-compounds-content cleaning agents are referred to as "low-VOC- content cleaning agents".

3.5 water-based cleaning agent Cleaning agents that are composed of components such as water, surfactants and additives.

4 Product classification

According to the different components of cleaning agents, cleaning agents are divided into water-based cleaning agents, semi-water-based cleaning agents and organic solvent cleaning agents.

5 Limit requirements

5.1 The VOC content and specific volatile organic compounds content of cleaning agents shall meet the requirements of Table 1.

5.2 Water-based cleaning agents that meet the requirements of Table 1 and semi-water-based cleaning agents that meet the requirements of Table 2 can be classified as low-VOC-content cleaning agents.

6 Inspection methods

6.1 Sampling Sampling shall be carried out according to the provisions of the corresponding product standards. If it is not specified, it shall be carried out according to the provisions of GB/T 6680.

6.3.2 Determination of density

6.3.3 Determination of VOC content CARRY OUT according to the provisions of Clause 15 of GB/T 13173-2008, where the determination procedure of semi-water-based cleaning agents and organic solvent cleaning agents is revised as. Before the determination, it shall evaluate whether there is a safety risk in the determination process according to "Safety Data Sheet" (SDS) of cleaning agent products, and the test sample with a safety risk shall be equipped with an explosion-proof oven for determination;

6.3.4 Determination of formaldehyde CARRY OUT according to the provisions of GB/T 23993.

6.3.5 Determination of the sum of benzene, toluene, ethylbenzene and xylene CARRY OUT according to the provisions of GB/T 23990-2009. Among them, organic solvent cleaning agents are determined according to Method A, and water-based cleaning agents and semi-water-based cleaning agents are determined according to Method B.

6.3.6 Determination of the sum of methylene chloride, trichloromethane, trichloroethylene

and tetrachloroethylene CARRY OUT according to the provisions of GB/T 23992. Calculate the content of methylene chloride, trichloromethane, trichloroethylene and tetrachloroethylene according to

8.5.2 of GB/T 23992-2009, and calculate the sum of the contents of the four substances.

7 Packing marks

7.1 For the cleaning agent products that are qualified according to this Standard, it shall clearly indicate the category of the cleaning agent on the packing mark. Those that meet the requirements of low-volatile cleaning agents can be clearly indicated as "low-VOC-content cleaning agents".