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Limits of harmful substances in adhesives (Draft for comments)

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National Standard of the People's Republic of China

GB xxxx—xxxx

To replace GB 18583-2008, GB 19340-2014, GB 30982-2014

Limits of harmful substances in adhesives

(Draft for Comments)

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Foreword

All technical content of this document is mandatory.

This document is drafted in accordance with the provisions of GB/T 1.1-2020 “Rules for standardization work - Part 1: Structure and drafting of stabilizing documents”.

This document replaces GB 18583-2008 “Indoor decorating and refurbishing materials - Limit of harmful substances of adhesives”, GB 19340-2014 “Adhesives for footwear and cases and bags” and GB 30982-2014 “Limit of hazardous substances in constructive adhesives”. This document is based on GB 18583-2008, integrating the contents of GB 30982-2014 and GB 19340-2014. Compared with GB 18583-2008, except for editorial modifications, the main technical changes are as follows:

–Modified the title of the document;

–Modified the scope of the document (see Chapter 1, Chapter 1 of GB 18583-2008);

–Deleted normative reference documents “GB/T 601, GB/T 606-2003, GB/T 2793-1995, GB/T 13354-1992”; added “GBZ 2.1, GB/T 2943, GB/T 6682, GB/T 8170, GB/T 12806, GB/T 12807, GB/T 12808, GB/T 20740, GB 33372-2020, GB 30981.2-2025, GB/T 39290, GB/T XXXX, HG/T 3075” (see Chapter 2, Chapter 2 of GB 18583-2008);

–Added terms and definitions for “solvent-based adhesive”, “water-based adhesive”, and “solvent-free adhesive” (see Chapter 3);

–Modified the classification of adhesive products (see Chapter 4, GB 18583-2008 3.1);

–In the table “Limit of harmful substances in solvent-based adhesives”, modified “free formaldehyde” to “formaldehyde content”, “benzene” to “benzene content”, “toluene + xylene” to “total content of toluene, ethylbenzene and xylene”, “toluene diisocyanate” to “total content of free diisocyanates (TDI and HDI)”, and merged “dichloromethane, 1,2-dichloroethane, 1,1,2-trichloroethane and trichloroethylene” into “total content of halogenated hydrocarbons”; deleted “total volatile organic compounds”; added items and limits for “n-hexane content”, “2-butanone oxime release”, “total content of alkylphenols and alkylphenol ethoxylates”, “residual aromatic amines”, “organotin content”, “phthalate content”, “heavy metal content” and “short-chain chlorinated paraffins content” (see Table 2, Table 1 of GB 18583-2008);

–In the table “Limit of harmful substances in water-based adhesives”, modified “formalized polymers” to “polyvinyl alcohols”, “free formaldehyde” to “formaldehyde content”, “benzene” to “benzene content”, “toluene + xylene” to “total content of toluene, ethylbenzene and xylene”; deleted “total volatile organic compounds”; added items and limits for “total content of alkylphenols and alkylphenol ethoxylates”, “organotin content”, “phthalate content”, and “heavy metal content” (see Table 3, Table 2 of GB 18583-2008);

–Modified “Limit of harmful substances in bulk adhesives” to “Limit of harmful substances in solvent-free adhesives”, added subcategories of “silicones”, “silane-modified polyethers”, “polyurethanes”, “polysulfides”, “epoxies” and “others” in the table, deleted “total volatile organic compounds”, and added items and limits for

“benzene content”, “total content of toluene, ethylbenzene and xylene”, “total content of free diisocyanates (TDI and HDI)”, “2-butanone oxime release”, “total content of alkylphenols and alkylphenol ethoxylates”, “residual aromatic amines”, “organotin content”, “phthalate content”, “heavy metal content” and “short-chain chlorinated paraffins content” (see Table 4, Table 3 of GB 18583-2008);

–Modified the requirements for “sampling” (see 6.1, GB 18583-2008 5.2);

–Added the high-performance liquid chromatography test method for the “formaldehyde content” item (see 6.3 and Appendix B.1);

–Modified the test methods for “benzene, toluene, ethylbenzene, xylene” items (see 6.4 and Appendix C, GB 18583-2008 Appendix B), and added the test method for the “n-hexane” item (see 6.5 and Appendix C);

–Modified the test method for the “total content of halogenated hydrocarbons” item (see 6.6 and Appendix D, GB 18583-2008 4.5 and Appendix E);

–Modified the test method for the “free toluene diisocyanate content” item (see 6.7 and Appendix E, GB 18583-2008 4.4 and Appendix D);

–Deleted the item and test method for “determination of total volatile organic compound content” (GB 18583-2008 4.6 and Appendix F);

–Added the test method for the “residual aromatic amines” item (see 6.8);

–Added the test method for the “total content of alkylphenols and alkylphenol ethoxylates” item (see 6.9);

–Added the test method for the “phthalate content” item (see 6.10 and Appendix F);

–Added the test method for the “2-butanone oxime release” item (see 6.11 and Appendix G);

–Added the test method for the “heavy metal content” item (see 6.12 and Appendix H);

–Added the test method for the “determination of organotin content” item (see 6.13 and Appendix I);

–Added the test method for the “determination of short-chain chlorinated paraffins content” item (see 6.14);

–Modified the content of determination of inspection results (see 7.2, GB 18583-2008 5.3);

–Modified the content of packaging marking (see Chapter 8, GB 18583-2008 Chapter 6).

This document was proposed by China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of National Technical Committee on Adhesives of Standardization Administration of China (SAC/TC185).

The previous editions of the documents replaced by this document are:

–GB 18583-2001, GB 18583-2008;

–GB 19340-2003, GB 19340-2014;

–GB 30982-2014.

Limit of harmful substances in adhesives

1 Scope

This document specifies the product classification, limits of harmful substances, inspection rules, and packaging marking of adhesives, and describes the corresponding test methods.

This document is applicable to solvent-based, water-based, and solvent-free adhesives. It does not apply to adhesives for national defense and military industry, adhesives for aerospace, medical adhesives, adhesives for food packaging, and urea-formaldehyde, phenolic, and melamine-formaldehyde glues for the wood industry.

2 Normative References

GBZ 2.1 Occupational exposure limits for hazardous agents in the workplace - Part 1: Chemical hazardous agents

GB/T 2943 Terms of adhesives

GB/T 6682 Water for analytical laboratory use - Specification and test methods

GB/T 8170 Rules of rounding off for numerical values & expression and determination of limiting values

GB/T 12806 Laboratory glassware - One-mark volumetric flasks

GB/T 12807 Laboratory glassware - Graduated pipettes

GB/T 12808 Laboratory glassware - One-mark pipettes

GB/T 20740 Adhesives - Sampling

GB 33372 Limit of volatile organic compounds in adhesive

GB 36246-2018 Sports areas with synthetic surfaces for primary and middle schools

GB/T 39290 Determination of the content of the aromatic amines in adhesives

GB/T XXXX-XXXX Determination of alkylphenols and alkylphenol ethoxylates content in adhesives

HG/T 3075 Regulations for packaging, marking, transportation and storage of adhesive products

3 Terms and Definitions

The terms and definitions defined in GB/T 2943 and the following apply to this document.

3.1 solvent-based adhesive

An adhesive in which volatile organic solvents serve as the primary dispersing medium

[Source: GB 33372-2020, 3.2]

3.2 water-based adhesive

An adhesive using water as the solvent or dispersion medium.