

B/S/H/	Use of hazardous substances Use of SVHCs [Substance of Very High Concern]	60100008646506 Rev: C1 22.06.2023
Checking Directive		

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1 Scope

This specification is applicable in addition to other BSH specifications and other technical and quality requirements including national or international legal regulations. In cases of conflict, the stricter requirement must be complied with.

2 General Requirements

For the development of circular economy products, components must be free of hazardous substances to prevent pollution of the environment and to enable recycling.

As a basic principle, the substance bans in the "BSH List of prohibited hazardous substances" with its restrictions and exceptions apply worldwide to all components and materials used in BSH home appliances and appliance accessories as well.

In addition, components and materials that are used in BSH products, shall in principle not contain the below listed substances as intentionally added substances or – if not intentionally added - above a threshold of 0,1% w/w:

- Substances of very high concern (SVHCs) of the EU REACH candidate list
- Halogenated flame retardants, especially brominated flame retardants (BFR)
- Per- and Polyfluorinated substances (PFAS)
- Fluorinated gases

For additional information, please refer to the FAQs in Appendix II.

Absence or presence of these hazardous substances in form of intentional use and/or above the level of technically inevitable traces/contaminations must be confirmed.

If for technical reasons the application of or contamination with a hazardous substance above the threshold cannot be avoided, this must be reported to the BSH part/material responsible and is only allowable as and under a formal exemption by BSH. Exemptions must be confirmed by BSH before the release of the material/component (for details see Appendix I).

2.1 Additional and Reactive Materials

If the parts or materials supplied are reactive or require additional materials (e.g. flux, mold release agents) for their processing, the requirements do not only apply to the finished form, but also to the initial form, and all additional material.

2.2 Finished goods

If a finished good is supplied, the requirements are to be applied for each of its (sub-)components, as well.

3 Requirements for Documentation

The absence or presence of relevant hazardous substances is to be declared using the BSH declaration system. In the event of a material change that affects the declaration query, the declaration must be updated by the supplier.

As long as the declaration system cannot be used, other forms of declaration (written/digital form) can be used after alignment with BSH, as long as they fulfill the requirement of IEC EN 63000.

4 Request for Exemption

4.1 Conditions for granting

In cases, where one or several hazardous substances as mentioned in chapter 2 cannot be avoided due to technical reasons, and there is no conflict with legal requirements by that use, a supplier can apply for a temporary exemption of this requirement to BSH.

To apply for such an exemption, further information must be given to BSH using the questionnaire in annex I of this TCD (preferably in electronic form)

BSH technical experts will then review the information and decide about granting such an exemption and its duration. Before confirmation of such an exemption by BSH, the exemption may not be used.

Example:

Due to a large number of studies on technical necessity, the substance lead > 0.1% w/w cannot be prevented in some applications, e.g. copper alloy containing up to 4 % lead by weight (RoHS exemption 6c). As long as no technical alternative is available, BSH would accept these substances.

4.2 Expiration/Re-Application

Exemptions are tied to a certain version of this TCD and are given an expiration date by BSH upon granting. They get automatically invalid after the expiration date or if previously a relevant change of regulations occurs. The supplier is responsible to re-apply for an exemption in due time to ensure continuous supply, and to update the information (e.g. checking, if a replacement is meanwhile available) in that process.

BSH may cancel any deliveries of material or parts, which are based on expired exemptions or false information given in the application.

5 Document history

Revision	Change description	Date
A1	Creation of Document	30.03.2022
B1	Adaption for Corporate application	07.07.2022
C1	Specification of limit values; Rework of appendix I; Inclusion of FAQs (appendix II)	22.06.2023

Appendix I – Application for temporary exemption

Please indicate in the format below the applications for which you need to apply for an exemption from the BSH requirements as stated in this TCD.

BSH material number (representative)	BSH material description	Substance name	Substance identifier (e.g. CAS no.)	Reason for usage of the substance	Availability of alternatives*
1234567890	<i>Example material</i>	<i>Example SVHC</i>	12-3456-67	<i>Non-stick effect</i>	<i>Qualification of alternative material has started. Release expected until "mm-yyyy"</i>

**Please explain if there is an alternative material or technical solution available without usage of the indicated substance. Please also indicate the estimated time schedule for implementing it. If there is no alternative available yet, please indicate if you have started working on alternatives already. If possible, please also indicate the estimated time schedule until release of an alternative material.*

Appendix II – FAQs

1) *What are substances of very high concern (SVHCs) of the EU REACH Candidate List?*

Substances of very high concern (SVHCs) on the EU REACH Candidate List have been identified to have certain hazard properties. In order to minimise their use in products, it needs to be ensured that SVHCs are progressively replaced by less dangerous substances or technologies where technically and economically feasible alternatives are available.

Once being on the REACH Candidate List and upon request by a consumer, suppliers of articles which contain substances on the Candidate List in a concentration above 0.1% w/w have to provide sufficient information to allow safe use of the article.

Substances with the following hazard properties may be identified as SVHCs acc. to REACH art. 57:

- Substances meeting the criteria for classification as carcinogenic, mutagenic or toxic for reproduction (CMR) category 1A or 1B in accordance with the CLP Regulation.
- Substances which are persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) according to REACH Annex XIII.
- Substances on a case-by-case basis, that cause an equivalent level of concern as CMR or PBT/vPvB substances.

The Candidate List of SVHCs is regularly updated. The latest and official version can be accessed following this link: <https://echa.europa.eu/candidate-list-table>

2) *What does “free of” explicitly mean with regards to limit values?*

In this context, “free of” means that a component is free of **intentionally added SVHCs** or - if the substance was not intentionally added – a limit value of **< 0,1% w/w** (1000 ppm) applies (if no stricter legal requirements are to be followed). This limit value refers to the article as such as defined by art. 3 REACH, **not to the complex object** which can be composed of several articles and mixtures. In other words, the limit value does not apply to the finished good or appliance, but to all subcomponents that it is composed of.

Concerning **printed circuit boards (PCB)** and **electronic components**, PCB base materials that meet the "halogen-free" requirement according to IEC 61249-2-21 also meet the requirements of the BSH Substance Strategy with regards to the use of brominated flame retardants. This is because the limit for chlorine and bromine according to IEC 61249-2-21 is 0.09 % w/w (equivalent to 900 ppm) each in order to be able to describe a PCB as halogen-free. Thus the use of flame retardants containing chlorine and bromine is practically excluded.

The same applies when the "low-halogen" term of the standard JS 709C is used for electronic components, because this means that all materials except PCBs may only have a bromine or chlorine content of < 0.1% w/w (equivalent to 1000 ppm).

Please note, that the other halogens fluorine and iodine are not covered by the definitions “low halogen” and “halogen-free” of the stated standards. Thus, these definitions do not include being free of per- and polyfluorinated substances (PFAS).

3) *How to recognize if a halogenated flame retardant is used?*

DIN EN ISO 1043-4 classifies flame retardants used in polymers by assigning code letters to the polymer designation. These code letters consist of the abbreviation "FR" in capital letters (FR: flame retardant) followed by a two-digit code number in brackets. Halogenated flame retardants have two-digit codes starting with 1X or 2X.

Only flame retardants exceeding 1 % by mass must be indicated according to DIN EN ISO 1043-4.

Example: PA66-GF30-FR(21)

- PA66: Polyamide 66
- GF30: 30% glass fibre
- FR(21): halogenated flame retardant based on polybrominated biphenyls in combination with antimony compounds

4) *What are PFAS substances and where do they occur?*

PFAS stands for **Per-** and **Polyfluoroalkyl** **S**ubstances and is defined by OECD as “any substance that contains at least one **fully fluorinated** methyl (CF₃-) or methylene (-CF₂-) **carbon atom**. This makes it a group of organic chemical compounds with more than **10.000 substances** in scope. For a consolidated master list of PFAS substances, please refer to [this](#) list.

Since PFAS hardly break down and thus can accumulate in the environment, they belong to the group of “Persistent Organic Pollutants” (POP) and are also known as “forever chemicals”. Meanwhile, PFAS are known or suspected to cause several health issues. For that reason, PFAS are part of the BSH Substance Strategy and shall be phased-out in BSH products until end of 2025.

PFAS are present in mixtures as surfactants, flow-aids and wetting agents, anti-foaming and film-formers. PFAS are also used in working fluids, lubricants and greases, as additives to reduce friction, minimise wear and increase part life. In articles, PFAS are used as flame retardants and for surface coatings on all kinds of materials, including metals, plastic and rubbers, e.g. in insulation of electrical wirings, bearings, gaskets and for non-stick cooking surfaces.

PFAS in electrical and electronic equipment can be found all the way down to small parts like semiconductor packages, PCB components (diodes, capacitors etc.) and PCBs themselves, wire, cable, glands, seals and housings, and even in the packaging.

Well known PFAS substances are:

- Polytetrafluoroethylene (**PTFE**), e.g. used for non-stick cooking surfaces.
- Fluoroelastomers **FKM** (Viton®) and **FKKM** (Kalrez®), which are used for gaskets, seals, high temperature hoses and cables.

Remark: Many PFAS used in mixtures have no hazardous classification in the globally harmonised system for classification and labelling (CLP), and are not substances of very high concern (SVHC) on the REACH candidate list. Therefore, many PFAS are not shown on safety data sheets even though the substance is present.

5) *How can I check if alternatives for my application/material are already available?*

The NGO *ChemSec* has gathered alternative materials, free of substances meeting the SVHC criteria acc. to art.57 REACH, in a database called “Marketplace”. This database can be accessed by following this link: <https://marketplace.chemsec.org/Alternatives>

This database can be filtered by chemical functions, relevant industry or a specific hazardous chemical that you are looking for safer alternatives to.