

The English language version is the original and the reference in case of dispute.

Chemical substances which shall be declared and substances that must not be present in Volvo Group products placed on the market

Volvo's red list

Orientation

This standard specifies restrictions and requirements with respect to the presence of certain chemical substances and materials in the Volvo Group's products.

The content of this standard is revised annually. In case of a revision, the new English version is published on 15 March. Any translated versions will be published when each translation has been finalized.

This issue differs from issue 12 in that:

- Section 2.3, EU REACH, has been updated and the scope has been expanded
- Manganese, Niobium, and Phosphorous have been added to Section 2.10 Volvo Top Critical Materials List. The section has also been reworked to reflect Volvo's current position.
- Section 2.13 Persistent Organic Pollutants (POP) has been added
- Appendix B has been updated to clarify additional substance restrictions
- Substance UV-328 has been added to Appendix B, Table B1
- The classification for substance Alkenes, polymd., chlorinated, CAS no 68410-99-1, has been changed from prohibited to declarable in Appendix B, Table B1
- Some general clarifications have been made.

References to "Volvo Group" within this document shall be understood to include all companies where AB Volvo directly or indirectly holds the majority ownership or is in managerial control. **Parts/products shall always comply with the latest version of this document.** This means that whenever:

- a change of material in a part/product that affects the material declaration in MDS is introduced, or
- a change in applicable legislation that affects the requirements in this document and the material declaration of a part/product in MDS, e.g. addition of declarable substances contained in a part/product,

an updated MDS shall be submitted to the Volvo Group for review.

The latest version of this document can always be found at Volvo Corporate Standards' supplier portal:

<https://www.volvogroup.com/en/suppliers/useful-links-and-documents/corporate-standards/search-for-standards.html>

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1 Scope and field of application

The purpose of this standard is to inform the Volvo Group’s suppliers and the Volvo Group’s employees and consultants about restrictions/prohibitions on substances of concern (SOC) in parts/products that are placed on the market by the Volvo Group. This includes commercial packaging intended for delivery to Volvo Group customers.

In the context of this standard, the definition of SOC includes all categories in section 2. These restrictions/prohibitions may be due to legal restrictions or the Volvo Group’s requirements and reporting procedures.

This standard supplements but does not supersede each supplier’s responsibility to comply with applicable laws and regulations. Suppliers' reported data will be used to prove legal compliance.

All parts/products supplied to the Volvo Group around the world shall comply with the latest version of this standard, regardless of when they were originally approved.

Note that this standard does not apply to chemical products for the aftermarket. Such products are subject to the requirements in Volvo’s black list, STD 100-0002, and Volvo’s grey list, STD 100-0003.

2 Requirements for substances in parts/products

All of the substances specified below shall be reported to the Volvo Group and shall not be hidden as unspecified using a “joker” or “wildcard” when the information is submitted in an MDS. It is the supplier's responsibility to ensure that all affected substances are identified, even if the specific CAS numbers are not listed in the restrictions.

This standard identifies substances and applications that are currently prohibited, as well as some that will become regulated and/or prohibited at a specified future date. To avoid unnecessary re-design/testing, new production parts shall comply with these future requirements.

If it is not possible to use a substitute, the supplier shall apply for a deviation by contacting the responsible buyer. Deviations shall be handled according to the Volvo Group instructions. A deviation may only be granted if the substance is not prohibited by law in the country where it will be used. The deviation and its review date shall be approved and subsequently followed up by the applicable Volvo Group steering group.

The restriction requirements for chemical substances in parts/products/materials are described in sections 2.1–2.12. These requirements are a condition in the Production Part Approval Process (PPAP).

2.1 GADSL

Global Requirement

The GADSL is a globally harmonized declarable substance list compiled by a global team from the automotive, automotive-parts-supplier and chemical/plastics industries.

The Volvo Group started to use the GADSL in 2009 and applies it for all products and applications.

Substances on the GADSL list are legally regulated in a country/region, are projected to become legally regulated, or shall be tracked for information-gathering purposes. They are classified as prohibited (P) or declarable (D). Certain substances are classified as D/P.

P – The substance is prohibited for all uses in at least one region/market.

D/P – The substance has both allowed uses and prohibited uses in at least one region/market.

D – The substance must be declared if it exceeds the defined threshold limits.

Volvo Group clarification:

P – The substance is prohibited in all parts delivered to the Volvo Group globally.

D/P – The substance is prohibited in all parts delivered to the Volvo Group globally, except for specific granted exemption applications which are only declarable.

D – The substance must be declared if it exceeds the defined threshold limits.

The prohibition/declaration refers to concentrations $\geq 0,1$ percent by mass, unless otherwise specified in GADSL or in this standard, and applies to non-separable, homogeneous materials, not to the total content in the component or assembly. Examples of non-separable materials are surface treatment on fasteners, paint coats on parts, additives in/on jointed parts (adhesives, weld deposit, solders, fluxing agents, etc.). Thus, concentrations of chemical substances shall not be calculated on the part's or assembly's total material content.

Deviations from and phase-out plans for the above listed requirements shall be handled according to section 4 in this standard.

[Link to GADSL](#)

2.2 EU ELV – End-of-Life Vehicles

Global Requirement

The EU's ELV directive, 2000/53/EC, prohibits hazardous substances, except those for which exemptions have been granted, in passenger cars *M1* and light commercial vehicles *N1*.

The Volvo Group has, together with the enforcement of the GADSL list, applied the same ban for new designs for all Volvo Group products as the ELV directive (Volvo requirement) since 2009-01-01. The Volvo Group allows the same exempted application cases as the ELV directive, but has a later deadline for hexavalent chromium and lead, see link to table of valid exemptions below.

Deviations from and phase-out plans for the above listed requirements shall be handled in accordance with section 4 in this standard.

[Link to Directive 2000/53/EC - ELV](#)

[Link to Volvo Group table of valid exemptions for substances of concern](#)

2.3 EU REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals

Global Requirement

EU REACH – Regulation 1907/2006/EC that restricts and prohibits certain use of hazardous substances.

The Volvo Group aims to phase out all Substances of Very High Concern (SVHC) on the EU REACH candidate list for authorisation. Therefore, these substances shall be considered prohibited in all designs where more sustainable and technically feasible alternatives exist. If alternatives are not available, the following applies:

- Substances of Very High Concern (SVHC) on the EU REACH candidate list for authorisation shall be reported (if needed with a safe use information sheet, SUI). A phase-out plan shall be developed together with the Volvo Group.
- Substances listed in REACH Annex XIV – authorisation list shall be phased out from all parts/products before the relevant sunset date. If not technically possible to phase out, the supplier shall inform the Volvo Group and apply for REACH authorisation for the specific application for the European market.

Substances listed in REACH Annex XVII are forbidden in the listed applications.

Substances proposed to be listed in REACH Annex XVII for applications relevant to the Volvo Group shall be declared if used but shall be considered prohibited in all designs where more sustainable and technically feasible alternatives exist. A phase-out plan shall be developed together with the Volvo Group.

The Volvo Group wants to reduce its dependency on PFAS-substances. When sustainable alternatives are available these must be chosen. Any other substances that meet one of the hazard classes or hazard categories mentioned in Article 57 of EU REACH (for Substances of Very High Concern), but which are not yet included in the EU REACH candidate list for authorisation, shall be avoided where more sustainable and technically feasible alternatives exist. If used, they shall be declared and a phase-out plan shall be developed together with the Volvo Group.

Additional substances that are not already prohibited in GADSL are listed in Appendix 2, Table 1.

Deviations from and phase-out plans for the above listed requirements shall be handled in accordance with section 4 in this standard.

[Link to REACH Regulation](#)

[Link to Candidate list table](#)

[Link to Annex XIV – Authorisation list](#)

[Link to Annex XVII – Restricted substance list](#)

2.4 CSCL – Chemical Substance Control Law

Global Requirement

The Japanese CSCL prohibits substances on the “Designated Products list in/for the listed applications”. Additional CSCL-prohibited substances that are not already prohibited in GADSL are listed in Appendix 2, Table 1.

[Link to CSCL \(Japan\) \(the page includes a link in the left section of the Designated Products list\)](#)

[Link to Class I Specified chemical substance list](#)

2.5 EU RoHS II – Restriction of Hazardous Substances in Electric and Electronic Equipment

Global Requirement

The EU's RoHS Directive, 2011/65/EU, prohibits hazardous substances in any electrical and electronic equipment as defined in Article 3 and Annex I of the above-mentioned Directive. Note, all parts for Volvo Penta's industrial segment are required to meet the RoHS 2 substance requirements. Compliance with this Directive shall be proven through an MDS submission for and/or a chemical analysis of any part used in these applications.

[Link to EU RoHS](#)

[Link to Volvo Group table of valid exemptions for substances of concern](#)

2.6 IMO – International Maritime Organization

Global Requirement (applies to Volvo Penta marine commercial products)

Restriction of substances in products and materials in ships. Substances declarable according to MEPC 379(80) and the EU Regulation 1257/2013. The substances are listed as D/P in GADSL. Some of the substances are prohibited in special applications.

Additional substances that are not already prohibited in GADSL are listed in Appendix 2, Table 1.

Deviations from and phase-out plans for the above listed requirements shall be handled in accordance with section 4 in this standard.

[Link to Directive 1257/2013 Ship recycling](#)

[Link to MEPC 379\(80\)](#)

2.7 California Proposition 65 – Safe Drinking Water and Toxic Enforcement Act of 1986

Global Requirement

California Proposition 65 regulations require that a warning be provided to consumers in connection with the sale of certain products in California. Substances on the Proposition 65 list shall be declared. Aftermarket parts delivered to Volvo Penta, Volvo CE or Volvo Buses shall be labelled in accordance with the rules set out in these regulations.

Additional substances that are not already prohibited in GADSL are listed in Appendix 2, Table 1.

[Link to Proposition 65 info](#)

[Link to Proposition 65 list](#)

2.8 Substances forbidden in parts if there is a risk of occupational exposure

Global Requirement

Parts/materials containing one or more of the substances listed on Volvo's black list, STD 100-0002, are prohibited if there is a risk of occupational exposure due to emission from the delivered part, e.g. nickel surface treatment.

Substances on Volvo's grey list, STD 100-0003, should not be put into use if there is a risk of occupational exposure.

The prohibition also applies to substances in chemical products that are fully enclosed in parts handled in manufacturing processes, e.g. oils, sealants and brake fluids.

All substances shall be reported.

Deviations from and phase-out plans for the above listed requirements shall be handled in accordance with section 4 in this standard.

The latest versions of the black and grey lists can always be found on the Volvo Corporate Standards supplier portal:

<https://www.volvogroup.com/en/suppliers/useful-links-and-documents/corporate-standards/search-for-standards.html>

2.9 Conflict minerals and cobalt

Global Requirement

Tin, tantalum, tungsten, gold (3TG), cobalt, and their ores shall be declared to the Volvo Group. Suppliers must be willing to conduct due diligence in accordance with the OECD Due Diligence Guidelines and shall declare the source of these minerals if they are present in parts.

[OECD Due Diligence Guidelines](#)

The definition of conflict mineral can be found in the following OECD document:

<http://www.oecd.org/fr/daf/inv/mne/mining.htm>.

2.10 Volvo Top Critical Materials list

Global Requirement

The Volvo Top Critical Materials list is based on the EU's List of Critical Raw Materials, the ESG (Environment, Social, Governance) risk assessment of the automotive industry supply chain as well as assessments of the use of the materials in Volvo Group applications. These materials are critical, e.g. in the reference of

- being at risk of supply disruptions or limitations
- having a business value resilience effect on the company or region
- their impact on climate, resources, and people at various stages of the supply chain.

The substances/materials in the Volvo Top Critical Materials list and their compounds shall be declared to the Volvo Group.

These materials shall be avoided if sustainable alternatives exist and design-for-circularity shall be considered. If the material(s) cannot be avoided, suppliers shall use material sources that are not connected to violations of ESG factors in the supply chain. The use of virgin materials shall be avoided and circularity shall always be considered. Upon request, suppliers shall be able to declare the source of these materials, as well as the percentage coming from recycled sources.

Aluminium*
Antimony
Bismuth
Cobalt
Copper
Gold
Graphite (natural)
Indium and Gallium
Iron*/Steel*
Lithium
Manganese
Mica
Molybdenum
Natural rubber
Nickel
Niobium

Phosphorous
Platinum group metals: A. Platinum B. Palladium C. Rhodium
Rare earth elements: A. Dysprosium B. Neodymium C. Praseodymium
Silver
Silica sand/glass (Glass shall be declared and the use of natural silica sand in glass should be avoided)
Strontium
Tin
Titanium

*) These materials have been added due to their carbon footprint (CO2 equivalents), which can be reduced by the content of recycled material and/or by using fossil-free technologies for manufacturing.

2.11 Radioactive substances (including scrap metal contaminants)

Global Requirement

The Volvo Group does not accept radioactive materials in its products. Materials shall not contain any radiation or radiation sources, irrespective of whether they are encapsulated or not, and shall not otherwise be contaminated by radioactive material.

2.12 USA Toxic Substances Control Act (TSCA)

Global Requirement

The Toxic Substances Control Act (TSCA) of 1976.

- Substances undergoing Risk Evaluation shall be declared
- Substances designated High-Priority for Risk Evaluation shall be declared (if needed with a safe use information, SUI). A phase-out plan shall be developed together with the Volvo Group
- Substances with Unreasonable Risk shall be phased out of all parts/products before the relevant date in the final rule.

[USA Toxic Substances Control Act \(TSCA\)](#)

2.13 Persistent Organic Pollutants (POP)

Persistent Organic Pollutants shall be avoided and substances listed in the Stockholm Convention on Persistent Organic Pollutants or in Regulation (EU) 2019/1021 are forbidden in the listed applications.

[Link to Stockholm Convention - Home page \(pops.int\)](#)

[Link to EU POPs regulation](#)

3 Reporting for chemical substances in parts

Global Requirement

The supplier shall submit a Material Data Sheet (MDS) consisting of a declaration of all included materials and substances, and their respective weights. The requirement applies for all parts and materials delivered to the Volvo Group, regardless of design date or application of the part or material.

Suppliers of parts exclusively used for Volvo Buses outside Europe are generally exempted from this requirement, but shall submit an MDS upon request.

The MDS shall be submitted to the Volvo Group via IMDS, except for Volvo CE where CDX is preferred.

The Volvo Group reserves the right to perform a chemical analysis of the part, at the supplier's expense, if the MDS is not delivered on time.

For information about the IMDS and CDX reporting procedures, see STD 100-0006. The latest versions of Volvo Group standards can always be found on the Volvo Corporate Standards supplier portal:

<https://www.volvogroup.com/en/suppliers/useful-links-and-documents/corporate-standards/search-for-standards.html>

4 Deviations and phase-out plans

Exemptions for a listed substance can be granted for certain applications where it is not technically feasible to substitute and the substance is not prohibited by law on the relevant market. In such cases, this shall be specified in the design-engineering documentation. When an exemption is granted, special protective measures shall be taken to prevent harm to human health and the environment. Exemption decisions shall be made by the respective Volvo Group entity.

Deviations and phase-out plans from the above listed requirements shall be handled in accordance with Volvo Group instructions.

5 Support

All questions related to substances and material reporting to any Volvo Group company shall be addressed to:

volvogroup_imdsreport@i-ntrinsic.com

IMDS can be accessed through the web page: <http://www.mdsystem.com>.

The contact information for the IMDS service centre in each respective country is available through the “contact” link. Questions regarding access to IMDS and technical IMDS questions should be addressed to the IMDS service centre.

CDX can be accessed through the web page: <https://public.cdssystem.com/en/web/cdx/home>.

Contact information for the CDX service centre is available through the “contact” link on that page.

For other questions related to this standard:

corporate.standards@volvo.com

6 Reference to this standard

Reference to this standard shall be made in design-engineering documentation, control documents for the Volvo Group’s facilities and in the documentation sent to the supplier.

Example of reference to this standard:

SUBSTANCES WHICH SHALL BE DECLARED AND SUBSTANCES THAT MUST NOT BE PRESENT
STD 100-0005

Appendix A – Definitions, abbreviations

The following terms are used by the Volvo Group in this standard in relation to examples of legal definitions, not excluding other legally binding definitions. They are sorted alphabetically.

Article

According to REACH legislation, an article means an object that during production is given a special shape, surface or design which determines its function to a greater degree than its chemical composition does. In this standard, the definition part/product is used instead

Compliance Data Exchange, CDX

An international, web-based system for managing suppliers' provision of material data sheets (MDS) to Volvo Construction Equipment and other manufacturing companies from different industry sectors

Declarable

Declarable means that a substance must be reported to the Volvo Group if it exceeds the defined threshold limits. Additional declarable substances that are not already included in GADSL are listed in Appendix 2, together with their defined threshold limits

Fibre

Unless otherwise indicated in this standard, a fibre is defined as a respirable object with a length $>5 \mu\text{m}$, a width $<3 \mu\text{m}$ and a length:width ratio (aspect ratio) $>3:1$

Homogeneous materials

"Homogeneous" means that the material composition is consistent and cannot be mechanically separated into two or more different materials. In this case, "mechanical separation" means separating the materials by means of cutting, trimming or abrasion. Homogeneous materials are, for example, plastics, metals, alloys and coatings. More examples are surface treatment on fasteners, paint coats on parts, additives in/on joined parts (adhesives, weld deposit, solders, fluxing agents, etc.)

Intentionally added

A substance/mixture/material that is deliberately utilized in the formulation of a material or component where its continued presence is desired in the final product to provide a specific characteristic, appearance, or quality.

Recycled materials used as feedstock in the production of new products, where some portion of the recycled materials may contain Volvo Group SOC-listed substances, are not considered to be intentionally added, unless specified by regulation.

For the purpose of this standard, monomers remaining in cured polymeric parts (including paints) are considered residual content, and not "intentionally added"

International Material Data System (IMDS)

The IMDS (<https://www.mdsystem.com>) is the automobile industry's material data system. The IMDS collects, maintains, analyses and archives all materials and substances used for automobile manufacturing

MDS

Material Data Sheet (MDS) is a breakdown of a part in a tree-like structure that lists components, materials and basic substances with specified names, part numbers, norms and standards, weights, etc.

New design

Newly created part(s) with newly allocated part number(s). The applicable date is the date when the part number was registered. For the supplier, the applicable date is the date of the "request for quotation"

Part/Product

An assembly, part/component, subcomponent, blank or bulk material that is supplied to the Volvo Group and ends up on/in a Volvo Group product or as a spare part

Percent by weight, definition for homogeneous material

The percentage of the substance, as a percentage by mass (mass fraction in percent) in a homogeneous material (see 2.7) is calculated using the formula:

$$\frac{\text{Mass of Substance}}{\text{Mass of Homogeneous Material}} \times 100 = \text{Percent by Weight}$$

Prohibited

A substance designated "P" is prohibited for all uses in at least one region/market, or may not exceed a regulated threshold limit for all uses in at least one region/market. A prohibited substance over listed thresholds is not allowed in homogeneous materials

Substance

A substance means a chemical element and its compounds in the natural state or obtained through a manufacturing process, including any additive necessary to preserve its stability and any impurity derived from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition (REACH)

Substrack application

Volvo Group application for managing the composition of parts reported in IMDS by suppliers

Appendix B – Volvo Group substance restrictions not covered by GADSL, still regulated or critical for Volvo Group products

The Volvo Group's product portfolio is wide and includes different types of non-automotive products. Furthermore, the Volvo Group strives to work proactively to phase-out hazardous substances in all of its products, which means that some substance restrictions imposed by the Volvo Group are not (or not yet) covered by GADSL (for example, applications that are outside the scope of GADSL or substances that have not yet been listed by GADSL) at the time of annual publication of this standard. In such cases, the Volvo Group's restrictions shall apply. Table B1 lists these additional substance restrictions and clarifies what shall be taken into account and communicated through the supply chain for parts delivered to the Volvo Group.

Table B1 – Volvo Group substance restrictions not covered by GADSL at the time of publication of this standard

Classification (restriction level)	Substance category or notation	CAS number	Applications affected	Threshold	Effective date	Reference to section
Prohibited	Bis(2-methoxyethyl) ether	111-96-6	All products	0,1 %	Immediately	2.3
Prohibited	N,N'-Ditolyl-1,4-phenylenediamine	27417-40-9	Rubber antioxidant in tyres	0,1 %	Immediately	2.4
Prohibited	Dechlorane Plus	13560-89-9 135821-74-8 135821-03-3	All products, spare parts for products placed on the market within 18 months after entry into force are exempted	0,0001%	Immediately	2.13
Prohibited	PFHxS	-	All products	0.025 mg/kg (the sum of all PFHxS must not exceed 1 mg/kg)	Immediately	2.13
Prohibited	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	All products		Immediately	2.13
Declarable	Alkenes, polymd., chlorinated	68410-99-1	All products	0,1 %	Immediately	2.3

Classification (restriction level)	Substance category or notation	CAS number	Applications affected	Threshold	Effective date	Reference to section
Declarable	4,4'-Isobutylethylidenediphenol	6807-17-6	All products	0,1 %	Immediately	2.3
Declarable	Conflict minerals, including tin, tantalum, tungsten, gold, and their derivatives	–	All products	Intentionally added	Immediately	2.9
Declarable	Volvo Group top critical materials	–	All products	Intentionally added	Immediately	2.10
Declarable	Any other substances that meet one of the hazard classes or hazard categories mentioned in Article 57 of EU REACH (for Substances of Very High Concern), but which are not yet included in the EU REACH candidate list for authorisation are expected to be declared	-	All products	Intentionally added	Immediately	2.3