

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 effectuates a decision made by the different environmental committees of the Volvo Group concerning restrictions with respect to the presence of certain chemical substances and materials in the Volvo Group's products.

This issue differs from issue 8 in that:

- The fact that the Volvo Group applies GADSL for all Volvo Group products in all applications has been clarified (section 2.1)
- It has been clarified that aftermarket parts delivered to Volvo Penta, Volvo CE or Volvo Buses shall be labelled according to the rules set out in California Proposition 65 (section 2.7).
- Copper and Nickel have been added to the Volvo Top Critical Materials list (section 2.10)
- The fact that the MDS reporting requirement applies to all parts delivered to the Volvo Group irrespective of design date or application of the part has been added (section 4)
- The requirement that if an MDS is valid for several manufacturing sites, an individual copy of the MDS shall be sent to the Volvo Group for each manufacturing site has been added (section 4)
- General clarifications have been made.

References to "Volvo Group" within this document shall be understood to include the Volvo Group and all joint venture products.

Parts/products shall always comply with the latest version of this document.

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

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

The contents of this standard are revised annually. In case of a revision, the new version is published on 15 March.

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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 placed on the market. 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 at the operation's and market's location(s). 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; instead, Volvo's black list, STD 100-0002, and Volvo's grey list, STD 100-0003, apply.

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 using the appropriate application form, as described in instruction 0001-14-3884 "Handling of deviations related to restricted substances in products". The deviation will only be granted if the substance is not legally forbidden 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 are described in the following section. This section relates to general requirements that affect parts/components/products and non-dimensional materials (blanks) supplied to the Volvo Group. These requirements are a condition in the Production Part Approval Process (PPAP).

When Product development uses already delivered parts (carry-over parts) for new projects, an updated MDS shall be requested and submitted in compliance with the latest issue of this standard.

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 Volvo Group products in all 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 – substance is prohibited for all uses in at least one region/market

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

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

Volvo Group clarification:

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

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

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

The prohibition refers to concentrations $\geq 0,1$ percent by mass, unless otherwise specified in GADSL, 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 must 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 chapter 5.

[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 ELV prohibition applies to new designs for all Volvo Group products (Volvo requirement) from 2009-01-01, when the Volvo Group started to use the GADSL list. The Volvo Group allows the same exempted application cases as the ELV directive, but has a later deadline for hexavalent chromium and lead.

As of 2017-06-01, the prohibition regarding hexavalent chromium is irrespective of design date. This means that it also applies to all carry-over parts.

Deviations from and phase-out plans for the above listed requirements shall be handled according to chapter 5.

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

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.

- Substances of Very High Concern (SVHC) on the EU REACH candidate list for authorization 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- authorization 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 Volvo Group and apply for REACH authorization for the specific application for European market.
- Substances listed in REACH Annex XVII are forbidden in the listed 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 according to chapter 5.

[Link to REACH Regulation](#)

[Link to Candidate list table](#)

[Link to Annex XIV – Authorization 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 to the Designated Products list)

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

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

Global Requirement

The EU’s RoHS Directive, 2011/65/EU, prohibits hazardous substances, except those for which exemptions have been granted, in electric and electronic equipment. The EU RoHS applies to Volvo Penta Industrial products and certain electric and electronic equipment. RoHS compliance shall be proven through the MDS submission and/or chemical analysis for any part used in these applications.

[Link to EU RoHS](#)

2.6 IMO – International Maritime Organisation

Global Requirement (applies to Volvo Penta marine commercial engines)

Restriction of substances in products and materials in ships. Substances declarable according to MEPC 269(68) 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 according to chapter 5.

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

[Link to MEPC 269\(68\)](#)

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 according to 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 for 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 according to chapter 5.

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-en/suppliers/useful-links-and-documents/corporate-standards.html?k>

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.

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 (VTCML) lists the substances that shall be declared to the Volvo Group. These substances shall be avoided, if technically feasible, or design-for-recycling shall be considered for new or changed components. Suppliers shall also be able to declare the source of these materials upon request.

Volvo Top Critical Materials list

Platinum group metals: A. Platinum B. Palladium C. Rhodium
Molybdenum
Rare earth elements: A. Dysprosium B. Neodymium C. Praseodymium
Tin
Bismuth
Indium and Gallium
Gold
Antimony
Silver
Cobalt
Copper
Nickel

2.11 Products made of or from endangered species and timber

Global Requirement

(a) Endangered species

Products made of or originating from endangered species shall not be supplied to the Volvo Group in any form. Suppliers shall only use materials or substances originating from species that are classified as Least Concern, LC, on the latest "International Union for Conservation of Nature and Natural Resources (IUCN) [Red List of Threatened Species](#)".

(b) Timber

All timber products shall be sourced from forests that comply with one of the following requirements:

- Certified by:
 - The "Forest Stewardship Council" (FSC); or
 - The "Programme for the Endorsement of Forest Certification Schemes"; or
- Declared as:
 - Sourced from plantation or recycled timber; or
 - Licensed under the FLEGT system (EU Action Plan for "Forest Law Enforcement, Governance and Trade").

The supplier shall upon request by the Volvo Group provide certification that the products are not made of or from endangered species or timber.

[Link to FSC](#)
[Link to Endorsement of Forest Certification Schemes](#)
[Link to FLEGT](#)

2.12 Requirements for 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.

3 Prohibition of re-use

Global Requirement

Re-use is prohibited for those parts listed in Annex V of the EU Directive 2005/64/EC in the construction of vehicles covered by the EU Directive 70/156/EC.

[Link to Directive 2005/64/EC](#)

4 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 weight. The requirement applies for all parts delivered to the Volvo Group, regardless of design date or application of the part.

If an MDS is valid for several manufacturing sites, an individual copy of the MDS for each manufacturing site shall be sent to the Volvo Group. This requirement shall be taken into consideration when entering the supplier code. Information on supplier codes can be provided by the Volvo Group purchasing contact.

Volvo Buses outside Europe are exempted. They shall submit an MDS upon request instead.

Any unspecified materials (so-called "jokers" or "wildcards") included in the material composition in an MDS shall not exceed 10 % of the homogeneous material. Unspecified materials shall not contain substances listed in GADSL or other substances that are prohibited or declarable according to this standard.

The MDS shall be submitted to the Volvo Group via IMDS, or CDX for Volvo CE.

The MDS shall be in English and in accordance with IMDS's common rules or CDX's Construction Industry rules. Further information on IMDS or CDX reporting can be found in the e-library section of the Volvo Group Supplier Portal, and in STD 100-0006 Reporting of substances and material composition to IMDS.

[Link to the Volvo Group Supplier Portal](#)

[Link to standard STD 100-0006](#)

When reporting in IMDS, the following conditions shall be fulfilled:

The supplier company, including the name of the person who is responsible for the reporting, shall be registered in the Volvo Group Supplier Portal. The registration shall be performed by the person at the

relevant Volvo Group company's purchasing department who is responsible for contacts with the supplier in question.

The supplier's IMDS ID shall be reported in the Volvo Group Supplier Portal. An IMDS ID can be obtained by registering in IMDS at the following address:

<https://www.mdssystem.com>.

When reporting in CDX, the following conditions shall be fulfilled:

The supplier company, including the name of the person who is responsible for the reporting, shall be registered in the Volvo Group Supplier Portal. The registration shall be performed by the person at the Volvo CE company's purchasing department who is responsible for contacts with the supplier in question.

The supplier's CDX ID shall be reported in the Volvo Group Supplier Portal. A CDX ID can be obtained by registering in CDX at the following address:

<https://www.cdssystem.com/cdx/faces/login>.

4.1 Reporting procedure

Reporting is initiated when the supplier receives a request to send an MDS.

The first MDS delivery shall be made no later than the deadline specified in the MDS request from the Volvo Group and submitted via the supplier's IMDS or CDX mailbox (which is reported in the Volvo Group Supplier Portal as a supplier account parameter). The MDS for the part in question shall be attached to the received MDS request and submitted by the supplier via IMDS or CDX.

Note: It is important that the supplier uses the Volvo Group's IMDS ID: 46569. For CDX, Volvo Construction Equipment's ID is 3618.

When a part modification is initiated by either party, the supplier shall submit a new MDS to the Volvo Group via IMDS or CDX using the same administrative information in the recipient information section as for the previous part's MDS.

The new MDS shall include a new MDS ID (create a new MDS). Merely creating a new version of the MDS is not sufficient.

All suppliers are recommended to follow up and ensure that their suppliers report in IMDS/CDX.

Specific requirements and guidelines for "Instructions for material and substances composition reporting" are available at:

<https://www.volvogroup.com/en-en/suppliers/our-supplier-requirements/material-and-substances-composition-reporting-in-imds.html>

4.2 Confidentiality

The information registered in IMDS/CDX is confidential and may only be used within the Volvo Group for statistical evaluations of material composition of components and complete products, future evaluations on recyclability, or other activities covered by substance regulations. Certain substance information that is required by legislation may be extracted and submitted to a third party.

4.3 Approval and establishment

The MDS checker and the MDS specialist within the Volvo Group company shall determine whether the material composition is correct according to the project, legal requirements and legislation.

Following receipt of the MDS, the Volvo Group company concerned will perform an environmental review and make one of the following decisions:

Accepted: The MDS is considered valid. The reported material composition for the part complies with the Volvo Group's requirements.

Accepted with follow-up: The MDS is accepted but a comment specifies some conditions (e.g. phase-out of a substance must be initiated by contacting the responsible buyer at the Volvo Group).

Rejected: The MDS is not accepted. The reported MDS for the part does not comply with the Volvo Group's requirements.

- If substitution is required, the part shall be reworked and the MDS shall be modified to reflect the change in the material composition of the part.
- If the MDS is wrongly reported, a new, corrected MDS shall be submitted.

5 Deviations and phase-out plans

Exemptions can be granted for certain applications where it is not yet possible to produce a product that performs well relative to the market, unless the substance is legally forbidden on that market. In such cases, this shall be specified in the requirements specification. 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 company.

Deviations and phase-out plans from the above listed requirements shall be handled according to Volvo Group instructions.

6 Support

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

volvogroup_imdsreport@i-ntrinsic.com

For questions about SOC in parts/products:

Support.REACHinformation@volvo.com

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

The contact information for 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.

7 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.

Appendix 1 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 parts/products is used instead

Compliance Data Exchange, CDX

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

Declarable

Declarable means that a substance must be reported to 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 defined threshold limits

Fibre

Unless otherwise indicated in this standard, a fibre is defined as a respirable object with a length >5 µm, a width <3 µm 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.). Thus, concentrations of chemical substances must not be calculated on the total material content in a part or assembly

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 which holds 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

Part/product that is supplied to the Volvo Group and ends up on/in a Volvo product or as a spare part. This part/product can be an assembly, part/component, subcomponent, blank or bulk material

Percent by weight, definition for material

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

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

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 homogenous 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)

Subtrack application

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

Volvo directive 0001-27-57 Phase-out of chromium (VI) and lead

This directive explains in detail the prohibition and exemptions for Cr6+ and lead in Volvo Group parts/products, as defined in the Global Automotive Declarable Substance List (GADSL)

Appendix 2 Substance restrictions not included in GADSL

Table 1 below shows restricted substances not included in GADSL.

Table 1 Substance restrictions not included in GADSL

Substance category or notation	CAS number	Classification (restriction level)	Applications affected	Threshold	Effective date	Reference to section
Methyloxirane	75-56-9	D	All products	0,1 %	Immediately	2.3 and 2.7
Alkenes, polymd., chlorinated	68410-99-1	P	All products	0,1 %	Immediately	2.6
4,4'-Isobutylethylidenediphenol	6807-17-6	D	All products	0,1 %	Immediately	2.3
1,4-Benzenediamine, N,N'-bis(methylphenyl)-	27417-40-9	P	All products	0,1 %	Immediately	2.4
N,N-Dimethylacetamide	127-19-5	D	All products	0,1 %	Immediately	2.3 and 2.7
Bis(2-methoxyethyl) ether	111-96-6	P	All products	0,1 %	After sunset date: 2017-08-22	2.3
Products made of or from endangered species	–	P	All products	Not detectable	Immediately	2.11
Conflict minerals including Tin, Tantalium, Tungsten, Gold and their derivates	–	D	All products	Intentionally added	Immediately	2.9
Volvo Group top critical material	–	D	All products	Intentionally added	Immediately	2.10