VEONEER STANDARD

Substance Use Restrictions

VS005

Distribution to: per VS0-02 distribution list		
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Version: 2.0	Release date: 6-OCT-2020	Pages: 14

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VS005

Introduction

Veoneer has conveyed in its Environmental Policy (Veoneer Standard VS030) that the company is committed to continual improvement in the field of environmental activities.

As part of these activities, Veoneer has developed this standard (VS005) describing the Veoneer Material Data Management process and defining Veoneer's requirements for reporting the material composition of its supplied parts. The standard also defines the applicable restrictions of certain substances.

The list of declarable, restricted and prohibited substances (see VS005 Appendix A) in this standard has been developed using the specifications of Veoneer's customers (see VS005 Appendix B) and governmental regulations.

For products that Veoneer purchases from suppliers, material data has to be reported through IMDS. An accepted MDS declaration from supplier is mandatory for PPAP approval.

For material data reporting to our Customer(s) Veoneer uses the IMDS system. The reporting of material data must meet customer requirements and international legal requirements such as e.g. GADSL, the European ELV Directive, REACH.

1 Purpose

The purpose of this standard is to define the material data management process according to Veoneer requirements, legal requirements and IMDS Recommendations. It also defines the substance use restrictions for Veoneer and its suppliers.

2 Scope

This standard is applicable to all final products approved for market use (intended for saleable vehicles) and delivered to the customer. Only components/materials that remain on the final product and will get mounted on the vehicle are subject of VS005, including mechanical, electro-mechanical and electrical components, labels, bulk chemicals (solder paste, underfill, thermal gel, sealant, coating etc.), etc. All other materials used in the manufacturing process, but not a part of the product (e.g. cleaning solvents, coolants, etc.) and packaging materials are not covered by VS005.

This standard is applicable to all final products which are going to be PPAPed after release date of this standard. If an already exiting part is revised, the most recent version of VS005 and its Appendices must be followed.

This standard is applicable to all Veoneer Business Units and Veoneer suppliers.

3 Responsibility

The **Plant Quality Manager** is responsible for ensuring that the standard is applied within the plant.

TCC and T&P are responsible for ensuring that the specified materials for Parts, including Prototype Parts, are compliant with the requirements of this standard.

The **Purchasing Organization** is responsible for ensuring that suppliers comply with applicable requirements of this standard.

The **VS005 process owner** is responsible for approval of the restricted substances deviation process (waiver).

The **IMDS Engineer** is responsible for administrating the IMDS system and for approving MDSs from suppliers and submitting MDSs to customers.

The **Project SQ** has the responsibility to request the IMDS submission from the supplier, and to ensure it is accepted before approving the PPAP. Additionally, they are responsible to initiate a waiver request from supplier and support further activities if needed.

The **Project Manager** is responsible for the contact with customers (e.g. receiving updated Customer Specifications) and for requesting IMDS submissions to customers.

4 Definitions

Bulk Chemicals
Bulk chemicals are chemicals in large quantities, transported and handled in cassettes, tanks, barrels and/or similar. Example of bulk materials are solder paste, adhesive, coating, thermal gel, etc.

CAMDS
China Automotive Material Data System. Web based system which has been developed for the Chinese automotive industry.
http://www.camds.org/camds_en/

CAS RN
Chemical Abstracts Services Registry Number. International numbering system for chemical substances.

GADSL
Global Automotive Declarable Substance List - latest version is always applicable for Veoneer and its suppliers even if Appendix A hasn't been updated.
https://www.gadsl.org/

IMDS
International Material Data System. Web based system that has been developed for the

automotive industry and allows the OEM's and suppliers to collect and manage information regarding the material and substance composition of all components.
https://public.mdsystem.com/en/web/imds-public-pages

MDS
Material Data Sheet. A Material Data Sheet (MDS) contains a description of the material and substance content for a part. This sheet is transmitted along the supply chain in IMDS.

PLM
Product Lifecycle Management. Acronym to identify the PLM-system that is used for all product definition, like part relationship, drawings and all documents needed to do an Engineering Change.

Substance Content
The amount of a substance is calculated by mass, unless otherwise stated. The concentration is the ratio of the masses of the individual substance and material containing the substance.

Abbreviations and Acronyms

TCC:	Technical Competence Center
T&P	Technology and Product
SQ	Supplier Quality
PPAP:	Production Part Approval Process

5 Requirements

5.1 Equipment for Manufacturing Processes

Equipment, ranging from production tools to shipping racks and containers, shall meet all applicable national and international legal requirements with regards to restrictions on the use of hazardous substances.

5.2 Chemicals and Chemical Preparations for Manufacturing processes and raw materials

Chemicals and chemical preparations used in the manufacturing processes, ranging from cleaners to intermediate substances (intermediate monomers, etc.) shall meet all applicable national and international legal requirements with regards to restrictions on the use, transportation and disposition of hazardous substances.
In addition, suppliers shall use industry best practices to ensure that raw materials and chemicals used during manufacture do not contain toxic or radioactive contamination that would constitute a health hazard. For more information about the requirements on hazardous chemicals used in Veoneer facilities, see VS321 Hazardous Chemicals (Storage, Use and Handling).

5.3 Parts Approved for Market Use

In the development of a new product or in a material change of an existing product VS005 Appendix A, must be consulted. Appendix A must also be consulted every time a new issue of VS005 has been released, to assure existing and new PPAPed Parts shall be reviewed against the revised Appendix A.

5.3.1 Substance Classifications

Prohibited substances (P) in Appendix A to VS005 are substances marked as prohibited (P) in GADSL which is defined by worldwide legal requirements as e.g. ELV, EU REACH. The latest version of GADSL (Global Automotive Declarable Substance List) or any legal requirement with the latest amendments shall always be applicable for Veoneer and its suppliers, even if VS005 hasn´t been updated yet. Substances classified as Restricted (R) in VS005 are restricted and/or prohibited by at least one customer. Declarable substances (D) in VS005 are substances classified as declarable in GADSL or customer specifications. Declarable substances can be restricted or prohibited in the future.

5.3.2 Thresholds

All thresholds in VS005 Appendix A refer to the substance content in a homogeneous material (by weight), unless otherwise stated in applicable legislation.

For example, the restriction of Dibutyltin compounds (DBT) according to REACH Annex XVII applies to vehicles and parts thereof and shall be calculated as 0.1% by weight of Tin in the part. For more information about how to calculate according to above, see IMDS home page.

5.3.3 Declarable Substances

Materials, components and products containing substances classified as *declarable must be reported* and shall be kept under surveillance and less hazardous alternatives shall be introduced when technically and economically feasible. Declarable substances may not be desirable in some applications. Future restriction or prohibition is possible.

5.3.4 Restricted Substances

Materials, components and products containing substances classified as *restricted and above the limits shall not be used*. Substances classified as Restricted are restricted and/or prohibited by at least one customer. If restricted substances are needed due to safety or other requirements until technical alternatives are available, a deviation will have to be requested, see Appendix D. VS005 Process Owner and those customer(s) which consider substances as prohibited must approve such deviation, otherwise use is not allowed. In cases, where the affected customer allows the restricted substance(s), a waiver request is not needed (see Appendix E Flowchart – Prohibited and Restricted Substances).

5.3.4.1 Restricted Substances Deviation Process for Suppliers

In case a restricted substance needs to be used temporarily (no technical alternatives are available), the supplier must request a deviation approval, see VS005 Appendix D Waiver Request Form. A waiver request shall be sent to the responsible Project SQ for further processing within Veoneer. Engineering/PM must approve the Waiver before sending it to customer. Project Manager is responsible for customer approval. VS005 Process Owner shall sign the waiver and return it to the requester with the decision approved or not approved. An approved waiver shall be included in PPAP by the supplier and checked in into PLM by Veoneer and attached to the affected material and part(s).

5.3.4.2 Restricted Substances Deviation Process for Veoneer

If Veoneer decides to use materials, components, or products containing restricted substance(s), a deviation approval is required by the affected Veoneer Plant (internal

supplier), see Appendix D Waiver Request Form. Engineering (or the requester of the substance) shall initiate an internal waiver process and sign the waiver. Project Manager is responsible for customer approval. VS005 Process Owner shall sign the waiver and return it to the requester with the decision approved or not approved. The approved waiver shall be included in PPAP by the affected Veoneer Plant and checked in into PLM and attached to the affected part(s).

5.3.5 Prohibited Substances

Materials, components and products containing substances classified as *prohibited and above the limits must not be used in any application.* This standard (VS005) prohibits the use of substances classified as "Prohibited" ("P") in GADSL. For more information about GADSL see chapter 5.12 and for REACH see chapter 5.10 of this standard.

The use of prohibited substances can be allowed in specific cases, see Appendix E Flowchart – Prohibited and Restricted Substances. To initiate a Waiver Request, see Appendix D – Waiver Request Form. VS005 Process Owner and those customer(s) which consider substances as prohibited must approve such deviation, otherwise use is not allowed. VS005 Process Owner shall sign the waiver and return it to the requester with the decision approved or not approved. An approved waiver shall be included in PPAP; by the supplier and checked in into PLM, by Veoneer and attached to the affected part(s).

5.4 Material and Substance Data Reporting for Parts Approved for Market Use

As a general rule, Veoneer uses IMDS for reporting of material data to customers. For the Chinese customers material data entry in CAMDS may also be requested, as needed. If a customer requires a different material reporting method than IMDS, it is the responsibility of the Project Manager to ensure this is reviewed, budgeted and solution is available during contract review phase.

Therefore, the composition of each material supplied to Veoneer as such or contained in components or products, must be declared by the supplier in IMDS, sent to Veoneer through the IMDS system and approved by Veoneer. Non-compliance to the Veoneer reporting requirements as defined in 5.8 will result in a rejection of the IMDS Declaration that is a PPAP rejection. See 5.7 for Exceptions.
For some suppliers additional CAMDS material declaration may be requested.

5.5 Supplier Verification and Documentation for Parts Approved for Market Use

The Suppliers shall certify compliance with this standard according to the following:

1. Documentation of an approved IMDS Declaration shall be included within the PPAP package.
2. PPAP approval can only be done with an approved IMDS Declaration.
3. Since the IMDS declaration is a full declaration of materials, the absence of prohibited substances, and restricted substances when applicable, will be confirmed by the IMDS Declaration.
4. If materials, components or products contain restricted substances from VS005 Appendix A, an approved waiver must be included in the PPAP declaration to show the authorized use.

Note: all declarable and restricted substances in Appendix A of this standard must be declared fully and openly in the IMDS/CAMDS Declaration. Prohibited substances must not be used.

Suppliers to Veoneer can be required to show upon request documents which verify that this standard has been adhered to, i.e. material certificates or results from chemical analysis as appropriate.

5.6 Supplier Notification of Restricted Substances in Existing Parts

When Appendix A is revised, there has to be a review of what is currently delivered to Veoneer and what is in PPAP. It is mandatory for the supplier to check if the parts delivered to Veoneer contain prohibited/restricted substances from revised Appendix A and in case they do, to notify Veoneer immediately.

5.7 Exceptions

Some applications containing lead above the limit are tolerated and exempted according to the latest Annex II of the European ELV Directive; see further EU Commission Directive 2016/774/EU. No waiver is needed in these cases (see Appendix E Flowchart – Prohibited and Restricted Substances). For more information about ELV Regulations in Different Regions, see chapter 5.14.

5.8 Material Data Reporting Requirements for Suppliers

When the supplier has been selected, Supplier Quality or Purchasing initiates the part ordering process and requires PPAP. Before requesting MDS submission from supplier, Supplier Quality or Purchasing must assure that the part number is released in the PLM system and the drawing (materials and weight are required information on the drawing) is available. This is necessary for IMDS Engineer to perform a complete and accurate check of the submitted MDS.

All IMDS/CAMDS Declarations submitted to Veoneer must follow the IMDS/CAMDS Recommendations published on the IMDS web site (http://www.mdsystem.com/) and CAMDS web site (http://www.CAMDS.org). It is the supplier's responsibility to ensure that the materials used for the Component Material Data Sheet (MDS) have been created in accordance with the Recommendations.

The reported content shall reflect the content of the part as it will be used by Veoneer, that is, all material compositions must be in the "as applied state" and not the formulation before application. For example, anti-rust priming coating shall not contain water as a component. Pop rivets, adhesive labels and epoxies are other applications that can change material composition.

Materials containing basic substances listed in GADSL and Veoneer Appendix A must be declared openly and completely in IMDS/CAMDS. These substances are not allowed to be marked as miscellaneous or as secret substances or in a similar wild card format.

All components must be submitted under the full Veoneer part number in the recipient data screen. The component part name shall match the name on the Veoneer released drawing. Part number is a mandatory field in IMDS recipient data screen. A wrong part number will result in a rejection of the submitted MDS regardless of the correctness of the declared data.

Further requirements for Suppliers are defined in VS005 Appendix F - Veoneer Supplier IMDS Declaration Requirements. Appendix F provides updated reporting details, such as the IMDS ID Number for respective Veoneer companies. The Supplier shall send the Material Declaration to Veoneer within IMDS to one of these Units as required. Note that the Veoneer Group has one single IMDS account with its companies defined therein as Organizational Units.

A more detailed description of the workflow can be found in VS005 Appendix G – Veoneer Supplier IMDS Workflow. Appendix G describes the course of the MDS from supplier submission into IMDS until Veoneer approval in the IMDS system and use in the PPAP documentation. The involved roles and responsibilities are also presented.

5.9 Customer Material Data Reporting

Veoneer performs material data reporting to customer through the IMDS system. The IMDS Engineer is responsible to submit MDS declaration to customer once a formal request from Project Manager is made.

The Project Manager is responsible for requesting submission of MDS to customer two months before customer due date to the IMDS Engineer via email by filling in 'customer submission request form'. The form can be requested from IMDS Team Members posted on the Corporate Standard Site.
Before making this request the Project Manager must assure that all BOM requirements presented below are fulfilled.
BOM requirements for customer submission:

a. EBOM structure released in the PLM system;
b. All components that remain on the final assembly delivered to the customer must be declared in the EBOM structure in PLM. All mechanical, electro-mechanical and electrical/electronic components and to all chemical materials (solder paste, underfill, thermal gel, sealant, coating etc.) added to the structure are considered components;
c. Chemical materials (solder paste, underfill, thermal gel, sealant, coating etc.) must have the weight (gram) defined in the EBOM structure in PLM (Quantity column);
d. All components defined in the BOM must have MDS declaration from supplier approved by Veoneer IMDS Engineers;

A more detailed description of the workflow can be found in VS005 Appendix H – Veoneer Customer IMDS Workflow. Appendix H describes the path that must be followed by project team to obtain a valid IMDS ID which can be used in the PPAP documentation. The involved roles and responsibilities are also presented.

5.10 REACH

REACH, the EU Regulation on Chemicals, took effect on 1 June 2007. Veoneer companies within EU and their worldwide suppliers must be knowledgeable about it and must fulfill applicable requirements under REACH.

Note that all substances on the REACH "Candidate List of Substances of Very High Concern for Authorization", known as the "Candidate List" are restricted by Veoneer and included in Appendix A, see also paragraphs 5.3 and 5.7 and the homepage of ECHA (European Chemicals

Agency). All Substances of Very High Concern (SVHCs) regarding articles shall be communicated to Veoneer via IMDS/CAMDS.

Substances included in Annex XIV of REACH are prohibited in VS005 and they will not be permitted for use in the EU after a published sunset date without formal authorization. Note that the preferred route is substitution since authorization is always a temporary solution.

Authorizations (and all other REACH requirements and processes) are managed by the European Chemicals Agency, ECHA (http://echa.europa.eu/). In order to ensure safe and continual supply of critical components, Veoneer's European suppliers are required to

→ not use Annex XIV substances in their processes to produce components supplied to Veoneer after the sunset date, or alternatively,
→ achieve authorization to use those Annex XIV substances.

Any change needs to be documented by PPAP and approved by Veoneer.

5.11 SCiP Database

The SCiP database reporting requirements foundation is REACH Article 33 reporting, and leverages the existing ECHA IUCLID REACH Chemical database architecture, with further refinement in progress.

The European Commission (EC) Directive (EU) 2018/851 amends Directive 2008/98/EC on waste (The Waste Framework Directive) to require all EU product producers and importers to enter product registration information into a centralized substance database for all articles and complex products that contain REACH Candidate List substances above 0.1% w/w. The amendments also instruct the European Chemical Agency (ECHA) to create the repository into which these product registrations will occur. ECHA has completed the initial development of the database for these "Substances of Concern in Products" (SCiP). The SCiP database will collect and maintain this Product and Substance of Concern information and provide waste treatment operators and consumers access to the information upon request. This information is intended to reduce further hazardous chemical contamination and to promote the circular economy.

Each member nation of the EU will implement and define individual regulations to enforce the SCiP reporting requirements through 2020. EU product producers & importers begin SCiP database submissions on 5 January 2021. Registration is an extension of the June 2011 REACH obligation to notify downstream product recipients of the presence of Substances of Very High Concern (SVHCs), and so impacted EU product producers and importers are legally obliged and expected to know which products are impacted and have the required information for entry at implementation. As currently written, the Directives require every company producing a relevant product (article or complex object) in the EU, or which is imported into the EU, to report (known as the "Once An Article, Always An Article" or O5A Decision). Suppliers thus share the reporting obligation, even if the finished goods producer is the only importer into the EU.

More information on SCiP submissions is detailed in Appendix I. The Appendix will be released later in 2021 when we understand how SCiP will work in our system.

5.12 Global Automotive Declarable Substance List (GADSL)

GADSL is a global list that contains substances classified as prohibited or declarable. This list is created by automobile manufacturers, tier suppliers and material suppliers, called the Global Automotive Stakeholder Group (GASG).

The GADSL only covers substances which are expected to be present in a material or part that is remaining in a vehicle at point of sale. For more information about GADSL, see webpage http://www.gadsl.org/.

The latest GADSL version is always applicable for Veoneer and its suppliers even if Appendix A hasn't been updated yet.

5.13 Conflict Minerals

The U.S. Securities and Exchange Commission (SEC) has rules requiring publicly traded manufacturing companies in the USA to report if their products contain metals derived from certain minerals defined as "Conflict Minerals," which are currently defined as columbite-tantalite, cassiterite and wolframite (and their derivatives tin, tantalum and tungsten) and gold. **See further VS005 Appendix C – Veoneer Policy on Conflict Minerals.**

With regards to Conflict Minerals,

a. suppliers should define, implement and communicate to sub-suppliers their own policy, outlining their commitment to responsible sourcing of Conflict Minerals, legal compliance and measures for implementation;

b. suppliers shall conduct due diligence of their supply chains to determine if any of the products supplied to Veoneer contain Conflict Minerals;

c. if suppliers determine that the supplied products do not contain Conflict Minerals they must provide Veoneer with an assurance that the supplied product does not, to their best knowledge, contain Conflict Minerals and describe the basis for that determination;

d. if a supplier determines that the supplied products contain Conflict Minerals, they shall work with sub-suppliers to ensure traceability of Conflict Minerals to at least the smelter level and provide the following information to Veoneer when requested:

   1) the smelter(s) used to process Conflict Minerals found in the supplied product;
   2) the country of origin of these Conflict Minerals;
   3) the due diligence process used to make this determination and
   4) any other information Veoneer may reasonably request in order to comply with applicable legislation.

5.14 ELV Regulations in Different Regions

5.14.1 EU ELV

The European ELV-directive was implemented in the 1st of July 2003 and it prohibits the use of the four heavy metals; lead (Pb), mercury (Hg), hexavalent chromium (Cr6+) and cadmium (Cd). Some applications at levels above the limits are tolerated and exempted according to

the latest Annex II of the European ELV Directive; see further EU Commission Directive 2016/774/EU. A maximum concentration value up to 0.1% by weight and in homogenous material, for lead, hexavalent chromium and mercury and up to 0.01% by weight in homogenous material for cadmium shall be tolerated.

5.14.2 China ELV

China ELV Management Requirements was implemented 1st of January 2016 (new type approved vehicles). Prohibited substances and exempted applications are defined in GB/T30512-2014. It prohibits the use of the four heavy metals including some brominated flame retardants (0.1% for Pb, Hg, Cr6+, PBB, PBDE and 0.01% for Cd).

5.14.3 Japan ELV

JAMA Gentleman's Agreement was implemented 1st of January 2005 (step by step). It prohibits the use of lead, mercury, cadmium and hexavalent chromium.

5.14.4 Korea ELV

Korea ELV Recycling Regulations was implemented 1st of January 2008 (new type approved vehicles). "Prohibited Substances" was applied after 1st of July 2008 and it prohibits the use of the four heavy metals (0.1% for Pb, Hg, Cr6+ and 0.01% for Cd).

6 References

VS030	Veoneer Standard	Environmental Management System
VS321	Veoneer Standard	Hazardous Chemicals

Conflict Minerals: Rule 13p-1 under the Securities Exchange Act (17 CFR §240.13p-1) (http://www.sec.gov)

ELV Directive (EC Directive 2000/53/EC)

GADSL (Global Automotive Declarable Substance List) (http://www.gadsl.org)

IMDS web page (http://www.mdsystem.com)

CAMDS Recommendations
(http://www.CAMDS.org/CAMDS_zh/news/download/20111213/184420.html)

REACH Regulation 1907/2006/EC (http://www.echa.europa.eu/)

7 Appendices

Latest version of the Appendices is available in the Veoneer Corporate Standards database and in Veoneer Supplier Manual

7.1 VS005 Appendix A – Declarable, Restricted and Prohibited Substances List

7.2 VS005 Appendix B – References – Declarable, Restricted and Prohibited Substances List

7.3 VS005 Appendix C – Veoneer Policy on Conflict Minerals

7.4 VS005 Appendix D – Waiver Request Form

7.5 VS005 Appendix E – Flowchart – Prohibited and Restricted Substances

7.6 VS005 Appendix F – Veoneer Supplier IMDS Declaration Requirements

7.7 VS005 Appendix G – Veoneer Supplier IMDS Workflow

7.8 VS005 Appendix H – Veoneer Customer IMDS Workflow

7.9 VS005 Appendix I – SCiP database

8 Modification Index

Version #	Date/Author	Modification	Purpose
1.0	01-Apr-2018/ B. Ortner		First issue
2.0	01-Sep-2020/ Monica Dobos	Substance classification “forbidden” was replaced by “prohibited”. Rearrange of chapters. Chapter Introduction: addition of Veoneer Material Management process details. Chapter 2. Scope: definition of application of this standard. Chapter 3. Responsibility: definition of responsible roles involved in Material Management Process and removal of ALV terms. Chapters 5.1-5.7: Modification of terms and responsibilities according new Veoneer organization and process. Chapter 5.8 Material Data Reporting Requirements for Suppliers: Addition of Veoneer requirements for the MDS receiving process, inclusion of new Appendix G – Veoneer Supplier IMDS Workflow. Chapter 5.9 Customer Material Data Reporting: new chapter. Chapter 5.11 SCiP Database: new chapter Chapter 5.12 Global Automotive Declarable Substance List (GADSL): clarification of the priority of following the latest GADSL version over the VS005 standard if not updated accordingly. Chapter References: Removed/ replaced withdrawn standard references.	Changed substance classification according legal and customer requirements. Modification of terms and responsibilities to suit Veoneer organization. Addition of chapter 5.9 to detail workflow for submission MDS declaration to customer. Addition of chapter 5.11 to reflect new legal requirements for Veoneer. Change in chapter 5.12 to reflect the importance of always following latest legal requirements. Implementation of new Appendix G for a better understanding of roles and responsibilities in the Supplier IMDS Workflow. Implementation of new Appendix H for a better understanding of roles and responsibilities in the Customer IMDS Workflow.

		Chapter 7.7 Appendix G, chapter 7.8 Appendix H, chapter 7.9 Appendix I: new appendices added	