Guideline for the creation of Material Data Sheets (MDS) in the International Material Data System (IMDS) for the Volkswagen AG and brands

**Responsable:** Volkswagen AG
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1. General Notes

The parts documented in material data sheets (in the following referred to as MDS) sent to Volkswagen AG must comply with material-related legislation worldwide (particularly the heavy metal ban in Europe, Korea, Japan etc., the European chemical legislation REACH, restrictions in the USA etc.). Only the availability of formal and contentwise correct MDS for all parts allows the monitoring of these legal obligations.

According to VW standards VW 99000 and VW 01155 each supplier is obliged to send MDS for all supplied parts to the Volkswagen AG.

Due to the high amount of MDS received by the different brands from various suppliers, Volkswagen applies a combination of automatic and manual assessment to ensure a high data quality.

All suppliers of the Volkswagen AG are obliged to ensure that the MDS sent to the Volkswagen AG describe the documented part accurately and are created according to the IMDS Recommendations.

This document shall support our suppliers in the creation of MDS for the Volkswagen AG. Furthermore, the legal provisions as well as the IMDS Recommendations shall apply.

1.1 Processing of received MDS
Generally incoming MDS are checked and evaluated both by the system and staff members within 2 working days.

In case of delay please contact imds@volkswagen.de.

1.2 Time of provision of MDS to the Volkswagen AG
MDS have to be provided at the latest during initial sampling. It should be noted that all MDS sent to the Volkswagen AG are downloaded once a night. Sufficient time should be calculated to revise possibly rejected MDS. In principle, the MDS should be sent to the Volkswagen AG as soon as possible in order to prevent delays or disruptions in the process.
1.3 Preliminary assessment
MDS which are marked with "yes" on the field: "Development sample report" are preliminary MDS and therefore cannot be used in the VW sampling process.

1.4 Send vs. propose
If possible, please use the option “send” to transfer a MDS to the Volkswagen AG. In that way, you avoid unnecessary versions of IMDS IDs which cannot be corrected anymore. “Propose” should only be used if you want to forward a MDS to the Volkswagen AG.

1.5 Forwarding permitted
In principle, the forwarding of MDS sent to the Volkswagen AG should be permitted in all cases. The organisational structure of the Volkswagen AG and the use of carry-over parts make it often necessary to forward MDS.

1.6 Change Management
In the following cases, changes of the delivered part require the creation of a new MDS, which has to be sent to the Volkswagen AG:

- Replacement of materials
- Change in the composition of a material (e.g. substitution of a basic substance)
- Use of an additional material
- Changes in the GADSL which affect the part or a material contained in the part.

The complete conditions for change management and the creation of new MDS/MDS versions can be found in IMDS Recommendation 001, chapter 3.2.

1.7 Volkswagen IMDS-ID’s
Please send the MDS to the Volkswagen Organisation Unit where your initial sampling takes place.

In the following chart you will find the IMDS-ID’s of several brands or plants from the Volkswagen AG.

<table>
<thead>
<tr>
<th>Departmental Units</th>
<th>IMDS-ID</th>
<th>Postal code</th>
<th>Place</th>
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<tr>
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<td>Place</td>
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<td>Place</td>
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<td>VW do Brasil Trucks &amp; Buses</td>
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<td>27501-970</td>
<td>Resende - Rio de Janeiro</td>
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</table>
2. MDS Structure

The MDS sent to the Volkswagen AG must always follow the latest IMDS Recommendations and Volkswagen standards. Below you find relevant references related to the focus of VW checks.

2.1 Materials
The described composition of materials must represent the reality. The materials need to be described in their homogeneous and (in the case of process materials like lacquers, adhesives etc.) cured state. The usage of liquids, reactive substances, starting products and gases is only allowed if they are indeed contained in the final product.

2.2 Structure
The structural composition of the MDS (subcomponents) must represent the reality. For subcomponents which have a Volkswagen part number, this information should be ideally reported on the tab “details”.

2.3 Deviation/Tolerance
The given tolerance in the MDS must correspond to the real tolerance of the production process. As a result, the deviation determined by the IMDS system between measured and calculated weight must be within the given tolerance in the MDS. Since the MDS represents a real part, the deviation of the MDS should be as low as possible. Deviations above 5 % will usually be rejected.

2.4 Classifications
The classification must follow the IMDS recommendations 001, specifically the Annex I, and must correspond to the reality.

2.5 Ranges
The ranges of the different node types must comply with the standards prescribed in the IMDS recommendations.

2.6 Weight
The given (measured) weight in the MDS must fulfill the indications of the Volkswagen Sampling System BeOn. Since the weights in BeOn as well as in IMDS are manually entered, there should be no difference between them.

2.7 Application codes
The application codes must fulfill all corresponding legal requirements.
3. Formal Requirements

The check of the formal requirements takes place automatically and without further revision of the MDS’s tree structure. If a MDS is rejected because of formal reasons, further errors can appear when the MDS is sent again.

3.1 Part Number

The Volkswagen part number must be entered in the MDS on the field “recipient data” following the Standard VW 01098.

Favored format:

(Without points or separators)

<table>
<thead>
<tr>
<th>X</th>
<th>NXX</th>
<th>NNN</th>
<th>NNN</th>
<th>AA</th>
<th>XXX</th>
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<tbody>
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<td>Number or character</td>
<td>N</td>
<td>Number</td>
<td>A</td>
<td>Character</td>
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<td>NNN</td>
<td>Middle group</td>
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<td>Index</td>
<td>Color code</td>
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<td></td>
</tr>
</tbody>
</table>

(The last 5 positions are not obligatory available, because they correspond to the index and color code.)

Further examples:

Standard part number: N__ 106 666 01; N0105634
Multi-use part number: WHT 000 000 1N; WHT 000 868

If these rules are violated, the following error messages can appear:

MISSING_PART_NUMBER

The supplier forgot to enter the part number in the submission of the recipient data. The supplier must add the part number and resubmit the MDS to Volkswagen.

INVALID_PART_NUMBER / TEIVON_CHECK

The supplier entered a part number which does not correspond to the Volkswagen part number scheme (INVALID_PART_NUMBER; e.g. submission of the own internal part number and not the VW part number), or a part number that is not known (TEIVON_CHECK) in TEIVON (Volkswagen part number allocation system). The supplier must enter the appropriate part number and resubmit the MDS to Volkswagen. The format of the part number must follow the Standard VW 01098.
3.2 Part Name
The name of the part/semi-component must be entered according to the Volkswagen drawing and CAD files in MDS under “recipient data”. This entry can be in English or in German. Besides the name, further descriptions are allowed, as long as the name of the drawing is included.

3.3 Drawing number/ Drawing dated
The drawing number and the drawing dated must be entered in the MDS under “recipient data”, according to the Volkswagen drawing. The entry of the date must comply with the format DD.MM.YYYY (e.g. 01.02.2013). In case there is no drawing number or date available, the symbol “-“ should be entered.

If these rules are violated, the following error messages can appear:

MISSING_DRAWING_NUMBER
The supplier forgot to enter the drawing number in the submission of the recipient data. The supplier must add the corresponding information (drawing number) and resubmit the MDS to VW.

MISSING_DRAWING_LEVEL
The supplier forgot to enter the drawing dated in the submission of the recipient data. The supplier must enter the corresponding information (drawing dated) and resubmit the MDS to Volkswagen.

3.4 Supplier Number
The DUNS number of the supplier must be entered in the MDS under “recipient data”. In order to get the DUNS number accepted, the supplier should have the status “active” in the Volkswagen supplier data base. If this is not the case, the supplier can activate the status in the supplier platform under the following link „Team up with us“. http://www.vwgroupsupply.com/

The entry of the DUNS number must comply with the following format

12-345-6789

If these rules are violated, the following error messages can appear:

MISSING_SUPPLIER_NUMBER
The supplier number was not entered.
The supplier must add the supplier number and resubmit the MDS to Volkswagen.
INVALID_SUPPLIER_NUMBER
A wrong supplier number was entered. The supplier must enter the DUNS number of the producing plant and resubmit the MDS to Volkswagen. If the DUNS number is correct, it has to be activated under the link: http://www.vwgroupsupply.com/ - „Team up with us”.

3.5 Relationship between IMDS ID – Part Number – DUNS Number
Only one part number may be documented for each IMDS ID (independently from the version), so that the relationship part number/IMDS ID is unambiguous. Please note that indices and color codes are integral components of the Volkswagen part number. For example, if the part number 1K0 123 456 A changes to 1K0 123 456 B, a new IMDS ID has to be created instead of a new version.

If a part has been changed and the corresponding actualization of the MDS does not require a new part number, then a new version of the existent IMDS ID has to be created (not a new IMDS ID).

If these rules are violated, the following error messages can appear:

DIFFERENT_ITEM_NUMBERS
It is not allowed to have different part numbers within different versions of the same IMDS ID. Please send a separate MDS for each part number, each with a single IMDS ID (follow the rule 3.2.2.A from IMDS Recommendations).

DUPLICATE_SUPPLIER_PART_NUMBER
Your company has sent a MDS with an already existing IMDS ID for this part number. For changes, please use the existing MDS ID and create a new version.
4. Valuable tips and Contacts

Assistance with …

… Volkswagen-specific questions:
   Email: imds@volkswagen.de
   For questions of detail please provide the IMDS ID of the MDS and your contact data.

… IMDS-specific questions:
   In your IMDS account you can find the IMDS Recommendations on the left side under the link Recommendations. Further support is provided on the public website of IMDS Public Pages

… material-specific questions:
   The material experts of the IMDS Helpdesk are ready to assist you in resolving potential issues, for example if a standard material is not available or with errors within the materials of the IMDS Committee.

5. Co-applicable Documents

IMDS Recommendations
EU Directive 2000/53/EC including the current Annex II
Global Automotive Declarable Substance List (GADSL)
VW 99000 General Requirements for the Performance of Component Development Contracts
VW 01054 Engineering Drawings; Dimensioning
VW 01155 Vehicle Parts; Approval of First Supply and Changes
VW 01098 Part Number System
VW 91102 Supplement 3 of the Environmental Standard for Vehicles; Recycling Requirements, Use of Recycled Material, Type Approval with Regard to Recyclability
VDA 231-106 Material classification in motor vehicle construction - Structure and nomenclature

With best regards,
Your Volkswagen material controlling team