

Explanation of Standard Material data

Revision history [P.2]

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Revision history

No.	Date	Revision	Content
1	July 1, 2007	New issue	for Version 2.02
2	November 1, 2008	The 2nd edition issue	for Version 2.04
3	October 1, 2009	The 3rd edition issue	for Version 2.10
4	October 1, 2010	The 4th edition issue	for Version 2.12
5	June 1, 2012	The 5th edition issue	Addition of committee materials (phosphate coating)
6	October 1, 2013	The 6th edition issue	Description change in p. 17. Ex.) IMDS Recommendation 001 --> IMDS 001
7	October 1, 2014	The 7th edition issue	In the "other information" column of p. 3, deleted 'Recycling marked' and added 'GADSL declaration'
8	October 1, 2017	The 8th edition issue	In the "other information" column of p. 3, deleted 'GADSL declaration' and added 'Purpose and product type for BPR related substance' Addition of the note for check on p. 20
9	October 1, 2018	The 9th edition issue	In the Material section of (1) Items of Standard Material data on page 13, delete 'Surface treatment flag [12].'

1. Definition of Standard Material data

- Commonly used material and substance information standardized in the automotive industry

Reporting requirements of the JAMA sheet			
Parts information	Material information	Substance information	Other information
<ul style="list-style-type: none"> – Part name – Part number – Weight of part – Part structure – Quantity of part 	<ul style="list-style-type: none"> – Material name – Material number – Material symbol – Public standard – VDA classification 	<ul style="list-style-type: none"> – Substance name – Substance code – Portion – Node ID – Chemical presence type 	<ul style="list-style-type: none"> – Contents of post industrial recycle – Polymeric part marked – Application Code – Purpose and product type for BPR related substance

Standard Material data (Metallic materials, Metallic coatings, Chromate films)

2. Purpose of introduction of Standard Material data

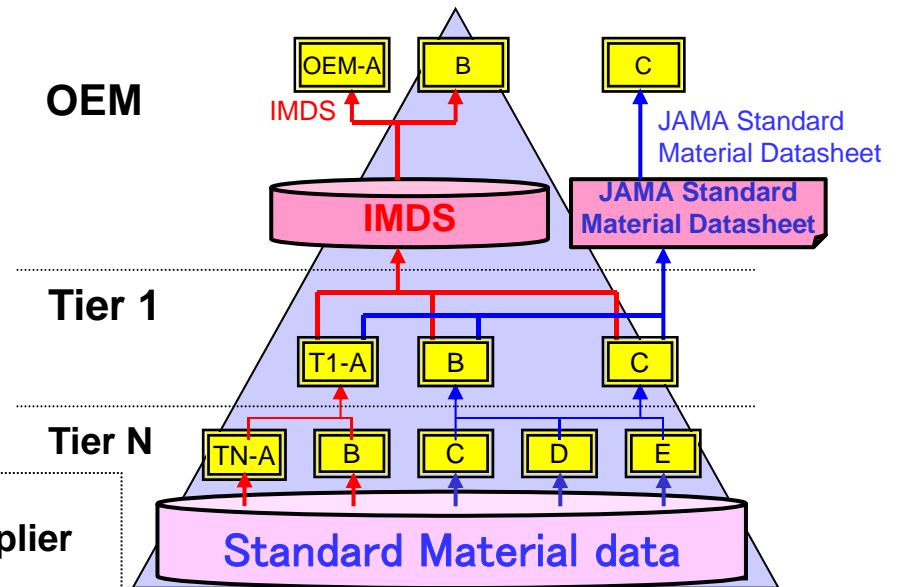
1. Increasing efficiency of investigation in OEM and suppliers

- Decreasing repeated requests for investigation

2. Decreasing load of IMDS server

- Decreasing registration of the same material by using different IDs

Present situation:
Each material supplier has to create MDS.



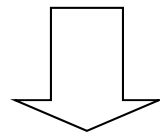
3. Concept of Standard Material data

<Reporting example>

	Reported data for the same material		
	Chemical component 1	Chemical component 2	Chemical component 3
Supplier A	↔	↔	↔
Supplier B	↔	↔	↔
Supplier C	↔	↔	↔
Public standard	↔	↔	↔

Portion range (min. – max.)

There are a lot of data for the same material.



Introduce Standard Material data

The same data is reported for the same material by using Standard Material data from different suppliers.

*‘IMDS Public Material data’ has been in use prior to this in the automobile industry.

4. Materials registered as Standard Material data

(1) Metallic materials regulated by JIS standards

- Ferrous Materials:
Steel, Cast steel, Sintered steel, Cast iron etc.
- Non-Ferrous Materials:
Aluminium alloy, Copper/Copper alloy etc.

[Reference: JIS spec.]

(2) Surface treatment

- Metallic coating (Electroplating, Electroless plating)
- Chromate film, Passivation

[Reference: IMDS Public Material data, technical data]

*** About 70 percent of all materials registered in (MAT) Material list of the JAMA sheet are covered in (1) and (2).**

(3) IMDS Committee materials for phosphate coatings

- **Zinc phosphate coating**
 - **Iron phosphate coating**
 - **Manganese phosphate coating**
 - **Zinc calcium phosphate coating**
- etc.**

5. Sample of Standard Material data

(1) Metallic materials regulated by JIS standards

– Chemical composition (JIS)

Table 4 Chemical composition Unit : %

Symbol of Grade	C	Mn	P	S
aaaa	0.15 max.	0.60 max.	0.100 max.	0.050 max.
bbbb	0.12 max.	0.50 max.	0.040 max.	0.040 max.
cccc	0.10 max.	0.45 max.	0.030 max.	0.030 max.
dddd	0.08 max.	0.45 max.	0.030 max.	0.030 max.
eeee	0.02 max.	0.25 max.	0.020 max.	0.020 max.

Note : The upper limit value may be differ upon agreement between the purchaser and the supplier.

Remarks: Alloying elements other than those in table 4 can be added as necessary.

– Standard Material data (Ex. aaaa)

Substance name	Substance code (CAS No.)	Substance portion	Substance portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Carbon	7440-44-0	0.075	0	0.15	
Manganese	7439-96-5	0.3	0	0.60	
Phosphorus	7723-14-0	0.05	0	0.100	
Sulfur	7704-34-9	0.025	0	0.050	
Iron	7439-89-6	99.55			1

* Iron content is not contained in JIS, however, it can be interpreted as 'rest'. Thus it is reflected in the Material standard data in that manner.

(2) Surface treatment

Ex. 1 Electroplating, Electroless plating (Copper)

Substance name	Substance code (CAS No.)	Substance portion	Substance portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Copper	7440-50-8	99.75			1
Misc., not to declare	system	0.25	0	0.5	

*Substances other than Copper(main substance) are summarized into 'Misc., not to declare'.

Ex. 2 Passivation black for Zn/Zn alloy plating

Substance name	Substance code (CAS No.)	Substance portion	Substance portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Chromium(III)oxide	1308-38-9	10.5			1
Chromium(III)-hydroxide	1308-14-1	5.5	4.5	6.5	
Water	7732-18-5	10	9	11	
Dichromium tris(hydrogen phosphate)	59178-46-0	53	50	56	
Zinc-hydroxide	20427-58-1	20	18	22	
Misc., not to declare	system	1	0	2	

(3) IMDS Committee materials for phosphate coatings

Ex. 1 Zinc phosphate coating

Substance name	Substance code (CAS No.)	Substance portion	Substance Portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Trizinc bis(orthophosphate)	7779-90-0	100			

Ex. 2 Iron phosphate coating

Substance name	Substance code (CAS No.)	Substance portion	Substance Portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Iron-orthophosphate	10045-86-0	75	60	90	
Diiron-trioxide	1309-37-1	25			1

* Data are the same as in IMDS.

6. How to use Standard Material data (JAMA sheet)

Item No.	13
Item	Material name
	Material name
Definition	Material name applied to a component part
	Material name
Entered by	supplier
Required/Optional	Required (For entered material)
Data type	ASCII characters
	number of digits (integer number)
	number of digits (decimal points)

Select material

Please enter search criteria and click OK button.

Material name(EN) Material No. SUY

Material name(JP)

1. Click **2. Input keyword**

3. Click

Click OK button and the material information is filled.
Please note that the material information is overwritten if it exists.

4 materials found.

Material name(EN)	Material name(JP)	Norms/Standar Material-No.	Synbol	VDA	Node ID
Steel SUY-0	電磁鋼鉄	JISC2504 SUY-0	1.1	533180036	
Steel SUY-1	電磁鋼鉄	JISC2504 SUY-1	1.1	533180038	
Steel SUY-2	電磁鋼鉄	JISC2504 SUY-2	1.1	533180042	
Steel SUY-3	電磁鋼鉄	JISC2504 SUY-3	1.1	533180047	

4. Select material

5. Click

Preview OK Cancel

- For materials registered as ‘Standard Material data’, Node IDs[material] are set.
- Click the select button, then Standard Material data are loaded. (Screen image is on P.11–12.)

Screen image for material selection

(Materials in Standard Material data)

<Before selection>

Excel spreadsheet showing the 'Before selection' state. The spreadsheet is titled 'jamasheet_en20181001.xls [互換モード] - Excel'. The active cell is R32. The spreadsheet contains a table with columns: Item No., Material name, Trade name, Weight [g/component part], Norms/Standards, Material number (Metal or other than plastics or rubber materials), Material symbol (Plastics or rubber materials), VDA Classification n, and Substance count. The table has 6 rows of data, all of which are empty. The 'Material name' column has a 'Select' button. The 'Weight' column has a 'Round off' button. The 'Material number' column has a button labeled '(Metal or other than plastics or rubber materials)'. The 'Material symbol' column has a button labeled '(Plastics or rubber materials)'. The 'VDA Classification' column has a button labeled 'n'. The 'Substance count' column has a button labeled 'count'. The 'Item No.' column has a 'Row copy' button and a 'Row deletion' button. The 'Material name' column has a 'Select' button. The 'Weight' column has a 'Round off' button. The 'Material number' column has a button labeled '(Metal or other than plastics or rubber materials)'. The 'Material symbol' column has a button labeled '(Plastics or rubber materials)'. The 'VDA Classification' column has a button labeled 'n'. The 'Substance count' column has a button labeled 'count'.

<After selection>

Excel spreadsheet showing the 'After selection' state. The spreadsheet is titled 'jamasheet_en20181001.xls [互換モード] - Excel'. The active cell is O50. The spreadsheet contains a table with columns: Item No., Material name, Trade name, Weight [g/component part], Norms/Standards, Material number (Metal or other than plastics or rubber materials), Material symbol (Plastics or rubber materials), VDA Classification n, and Substance count. The table has 6 rows of data, all of which are now populated with standard material data. A red box highlights the data in the 'Material name' column. A red arrow points from the 'Standard Material data have been loaded.' text box to the 'Material name' column.

Item No.	Material name	Trade name	Weight [g/component part]	Norms/Standards	Material number (Metal or other than plastics or rubber materials)	Material symbol (Plastics or rubber materials)	VDA Classification n	Substance count
1	Steel SUY-0		JISC2504	SUY-0		1.1.1	1	
2	Steel SUY-0		JISC2504	SUY-0		1.1.1	2	
3	Steel SUY-0		JISC2504	SUY-0		1.1.1	3	
4	Steel SUY-0		JISC2504	SUY-0		1.1.1	4	
5	Steel SUY-0		JISC2504	SUY-0		1.1.1	5	
6	Steel SUY-0		JISC2504	SUY-0		1.1.1	6	

Standard Material data have been loaded.

Screen image for material selection

(Materials not in Standard Material data)

<Before selection>

<After selection>

Material information has been imported. Next, please input other items.

7. Detailed description of the contents of Standard Material data

(1) Items of Standard Material data

- Material

Material name [13], Norms/Standards [16],
Material number (Metal or materials other than plastics or rubber) [17],
Material symbol (plastics or rubber) [18], VDA Classification [19]

- Substance

Chemical presence type [23], Substance code (CAS No.) [24],
Substance name [25], Portion [26]

- JAPIA options

Portion (Minimum) [42], Portion (Maximum) [43], Portion (residual) [44],
Node ID [Material] [46], Node ID [Substance] [47]

Blue: Material information Red: Substance information

[]: Item No. (JAMA sheet)

(2) Materials not covered in registration to Standard Material data

1) Materials of which the JIS spec for Pb, Hg, Cr6+, Cd exceed threshold regulated by EU ELV DIRECTIVE (Not including materials exempted by ANNEX II)

<Example>

JIS Z3261, JIS Z3262, JIS Z3264, JIS Z3265: All materials

JIS H3270: C5441

JIS H5120: CAC401, CAC406, CAC602, CAC603, CAC604, CAC605

2) Materials of which the chemical content is arbitrarily specified by JIS, and materials of which portion ranges are too broad

Ex.1 Ti $5 \times C\%$ min (Ti content is five times over the C content.)

[JIS G3459 SUS321TP]

Ex.2 C 0.15% min (C content is over 0.15%.) [JIS G4303 SUS316F]

(3) 'Remarks' and 'Notes' in JISs

- **'Remarks' and 'Notes' are reflected in the Standard Material data, if specifications of Substance are contained in JIS.**

Ex.1 Cu as impure content shall not exceed 0.30%. [JIS G3221]

Ex.2 As impurities, Ni and Cu for each grade shall be 0.25% max. and 0.30% max., respectively. [JIS G3441]

Ex.3 0.60% max. of Mo may be added. [JIS G4303]

- **However, any agreement between delivering parties (e.g. the manufacturer and the purchaser) is not reflected in the Standard Material data.**

Ex.4 With agreement between delivering parties, Zr+Ti may be 0.25% max.
[JIS H4040]

Ex.5 The value of P and S may be specified to be no more than 0.035% under an agreement between delivering parties. [JIS G4801]

Ex.6 For the tubes of Grade 15 made by electric resistance welded, the lower limit of C may be altered by agreement between delivering parties. [JIS G3445]

(4) 'Others' and 'Other Substances' in JISs

- If there are 'Others' and 'Other Substances' in JIS, these are registered in the Standard Material data as 'Misc., not to declare'.
- If there are 'Individual' and 'Total' in 'others', only 'Total' is reflected in the Standard Material data.

(Refer to the table below.)

Ex. Chemical composition

Unit : %

Alloy No.	Chemical composition										
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others ⁽⁶⁾		Al
									Individual	Total	
aaaa	0.6 max.	0.7 max.	0.05 to 0.20	1.0 to 1.5	—	—	0.10 max.	—	0.05 max.	0.15 max.	Remainder
bbbb	0.6 max.	0.7 max.	0.20 max.	1.0 to 1.5	—	—	0.5 to 2.5	—	0.05 max.	0.15 max.	Remainder
cccc	0.6 max.	0.7 max.	0.30 to 0.7	1.0 to 1.5	—	—	0.25 max.	—	0.05 max.	0.15 max.	Remainder
dddd	0.6	0.7	0.30	1.0 to 1.5	0.20 to 0.6	0.10 max.	0.25 max.	0.10 max.	0.05 max.	0.15 max.	Remainder

(5) Portion Ranges for Substances

- The portion range tolerance is regulated by IMDS 001*.
(An example is shown in the table below. Please refer to it.)
However, it is not applied to public standard materials by way of exception.
- Some JIS materials have spec. ranges wider than those in the table below, but such materials are out of error checks in JAMA sheet because of the exception.

IMDS 001* : IMDS General Rules and Guidelines

Table: an example of portion ranges by IMDS 001

Portion: from X% to Y%	Maximum M = Y% - X%
$0 \leq X \leq 7.5$	$M \leq 3$
$7.5 < X \leq 20$	$M \leq 5$
$20 < X \leq 100$	$M \leq 10$

8. Notes in using Standard Material data

1. Please be sure to check actual data on the chemical composition of a material before using Standard Material data.
*** Please, especially never fail to check whether 4 substances (Pb,Hg,Cr6+,Cd) are included or not in the material.**
2. **If actual data on the chemical composition does not differ from Standard Material data, the Standard Material data must not be used.** In such cases, please manually input the actual data.
 - Example of difference: P.19
 - Manual input procedure: P.20

[Example of difference]

SUP6 (JIS G4801, Spring steels)

a) Standard Material data

Substance name	Substance portion	Substance portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Carbon	0.6	0.56	0.64	
Silicon	1.65	1.50	1.80	
Manganese	0.85	0.70	1.00	
Phosphorus	0.015	0	0.030	
Sulphur	0.015	0	0.030	
Copper	0.15	0	0.30	
Iron	96.72			1

b) Actual chemical composition

Substance name	Substance portion	Substance portion (Min.)	Substance portion (Max.)	Substance portion (Rest)
Carbon	0.6	0.56	0.64	
Silicon	1.65	1.50	1.80	
Manganese	0.85	0.70	1.00	
Phosphorus	0.0175	0	0.035	
Sulphur	0.0175	0	0.035	
Copper	0.15	0	0.30	
Iron	96.715			1

JIS allows these contents because the description below is written in remarks.

[Remarks]

‘The value of P and S may be specified to be no more than 0.035% under an agreement between the manufacturer and the purchaser.’

In such cases, it is not allowed to use the Standard Material data for reporting. Please report by using actual data as in b).

[Procedure for changing default data by hand]

- (1) Select a material and import the default data (Standard Material data).
- (2) Overwrite the data in the substance of which actual data on the chemical composition differ from Standard Material data.
- (3) Run data check *.

Details of “data check *”

Matching check*) between inputted data and Standard Material data is done. If data is changed, the message below will be shown and the ‘Node ID [material]’(Item No.:46) will be deleted after matching check.

[mes115:Warning]

The material–substance information is not found in the external list.
The value has been deleted.

Matching check*): When loading the data created with the old version of JAMA sheet, there is the case that Node ID for material data has been changed due to the material data update. In such a case, as the old Node ID has already been deregistered, data check is not done, therefore, the warning message will not be displayed. (This is the case without procedure (1).)

3. As a rule, use the material if it is in the Standard Material data.
However, the user (person who inputs data to the JAMA sheet) has the responsibility for using Standard Material data, so check these Notes before using it.
4. 'Application' is not set in Standard Material data by default.
Please input it manually after checking related regulations.
5. Regular revisions of the Standard Material data are planned once a year as a rule to synchronize with the updated JIS.