

Explanation of Standard Material data

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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	Addtion 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'

1. Definition of Standard Material data

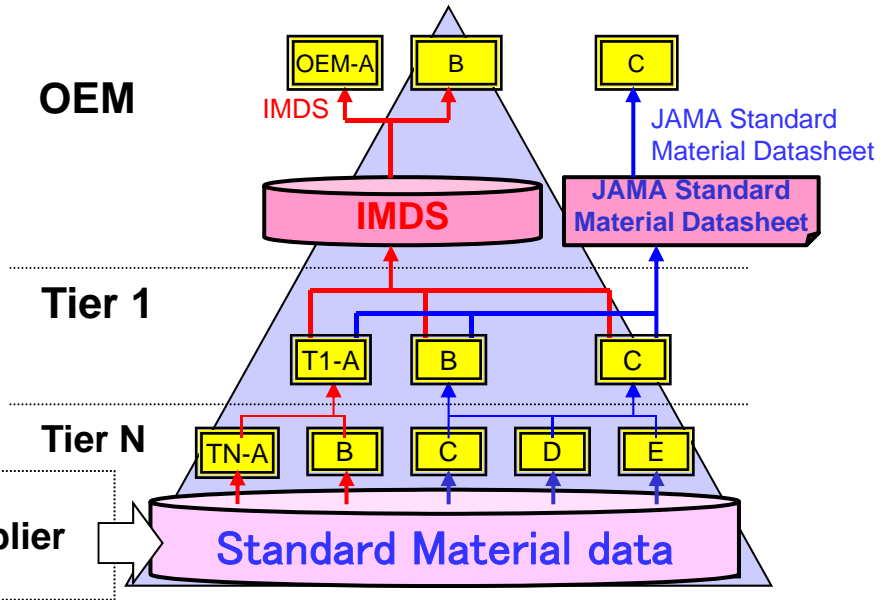
- Commonly used material and substance information standardized in the automotive industry

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 -GADSL declaration -Application

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

2. Purpose of introduction of Standard Material data

- Increasing efficiency of investigation in OEM and suppliers**
 - Decreasing repeated requests for investigation
- Decreasing load of IMDS server**
 - Decreasing registration of the same material by using different IDs



Present situation:
Each material supplier has to create MDS.

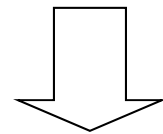
3. Concept of Standard Material data

<Reporting example>

	Reported data for Material 'M'		
	Chemical component 1	Chemical component 2	Chemical component 3
Supplier A	↔	↔	↔
Supplier B	↔	↔	↔
Supplier C	↔	↔	↔
Spec of public standard	↔	↔	↔

Reported data is different even for the same material

Portion range
(min. – max.)



Introduction of Standard Material data

Reported data for materials regulated by public standards will be unified.

※ 'IMDS Public Material data' has been in use prior to this in the automobile industry in Europe.

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**

5. Sample of Standard Material data

(1) Metallic materials regulated by JIS standards

Ex. JIS G3141 (Cold-reduced carbon steel sheets and strips)

– 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 JISG3141, however, it can be interpreted as 'rest'. Thus it is reflected in the Material standard data in that manner.

(2) Surface treatment

Ex1. 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		0.25	0	0.5	

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

Ex2. 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) compounds	16065-83-1	16			1
Water	7732-18-5	10	9	11	
Phosphate	14265-44-2	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			1

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	99.75			1
Diiron-trioxide	1309-37-1	0.25	0	0.5	

* 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	
Entered by	supplier	
Required/Optional	Required (For entered material)	
Data type	ASCII characters	
	number of digits (integer number)	100
	number of digits (decimal points)	0

1. Click

2. Input keyword

3. Click

4. Select material

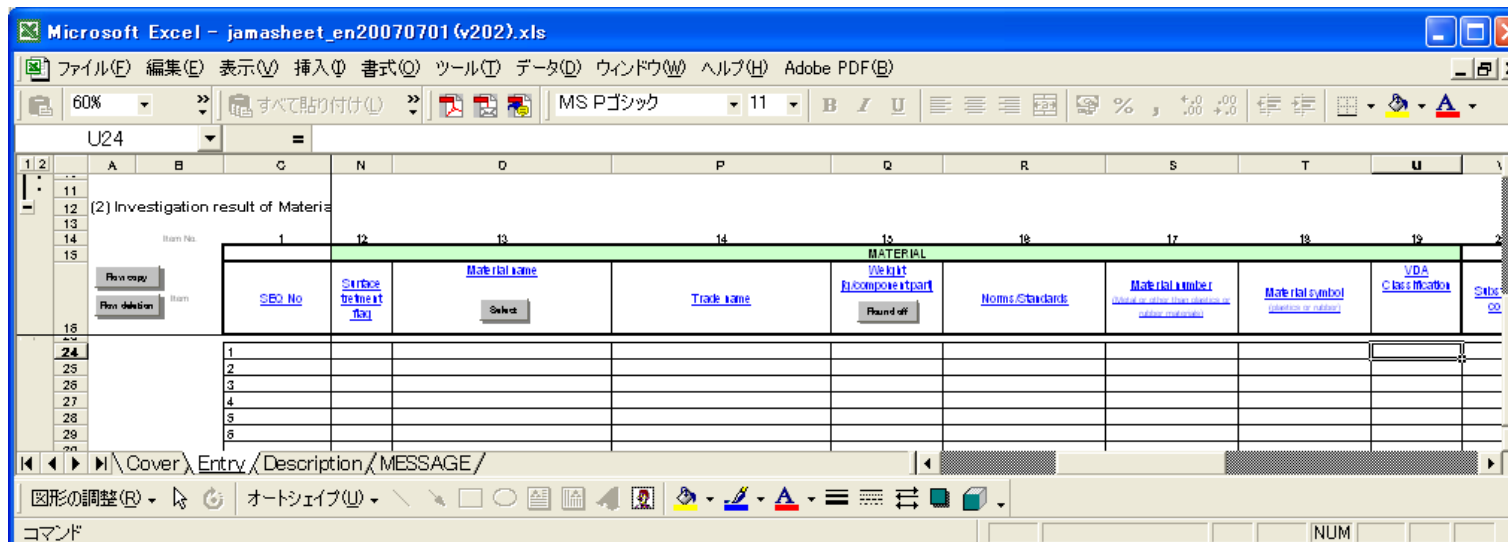
5. Click

- For materials registered as 'Standard Material data', a Node ID[material] is attached. (*)
- *:IMDS Node ID given to IMDS Public Material is set.
Refer to "Summary of JAMA/JAPIA Standard Material Datasheet version upgrade for ver.2.04" for details.
- By clicking the select button, Standard Material data will be imported. (Screen image is on P.9-10.)

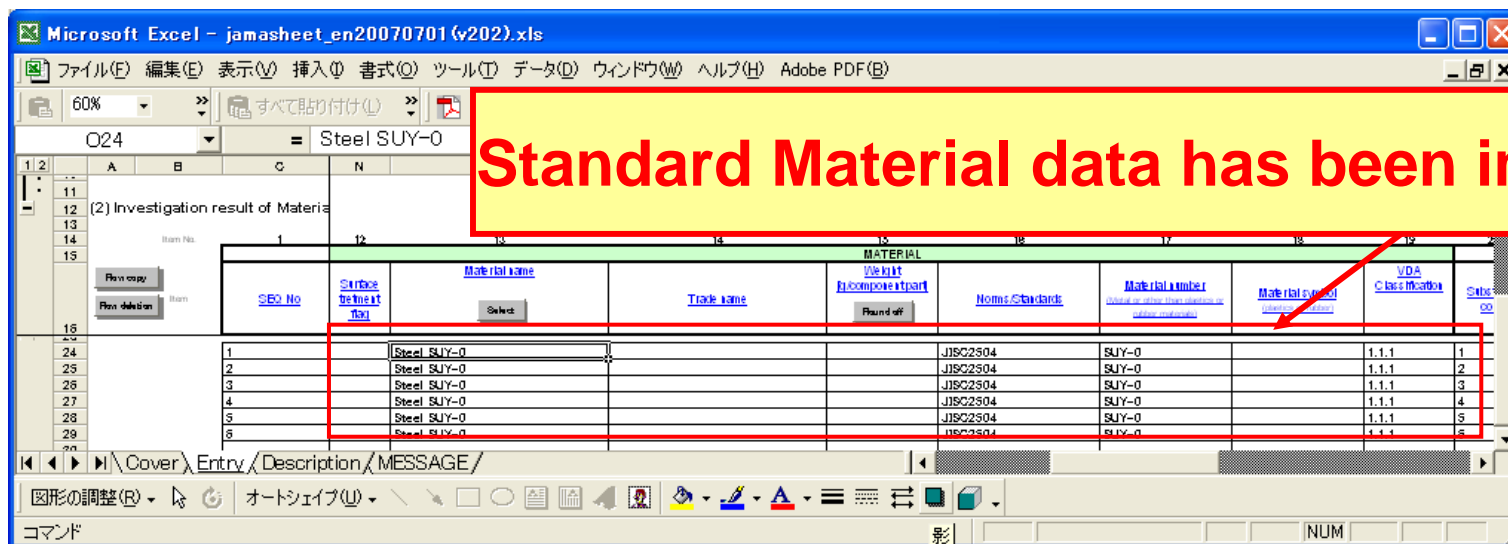
Screen image for material selection

(Materials in Standard Material data)

<Before selection>



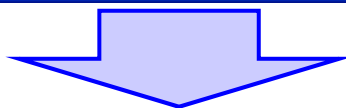
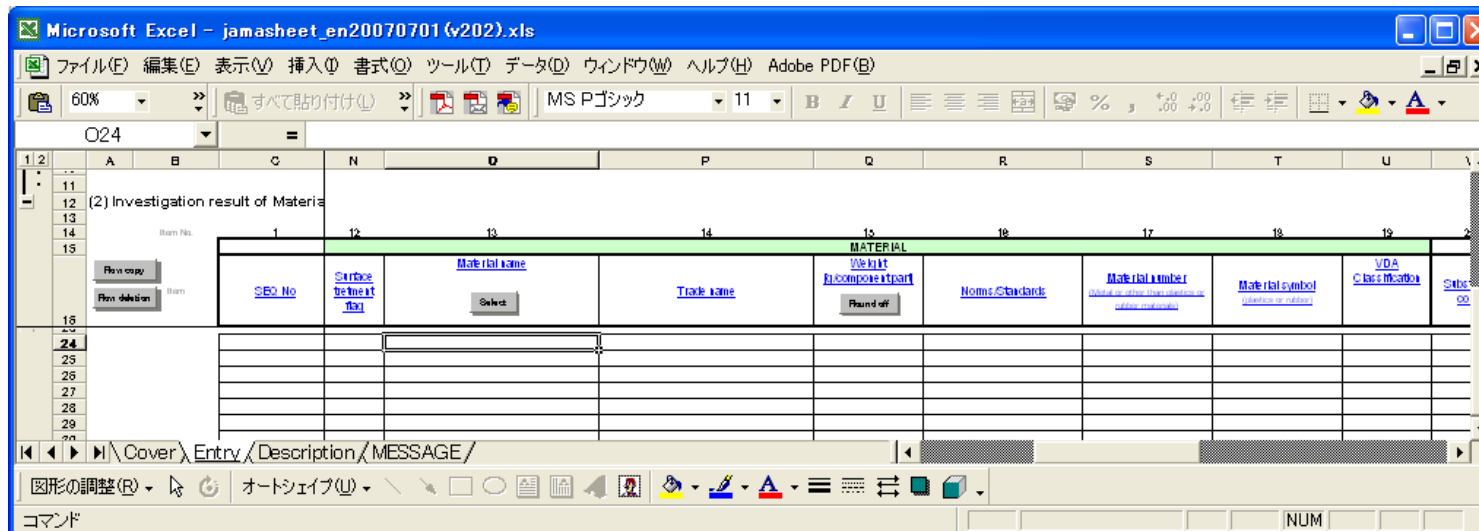
<After selection>



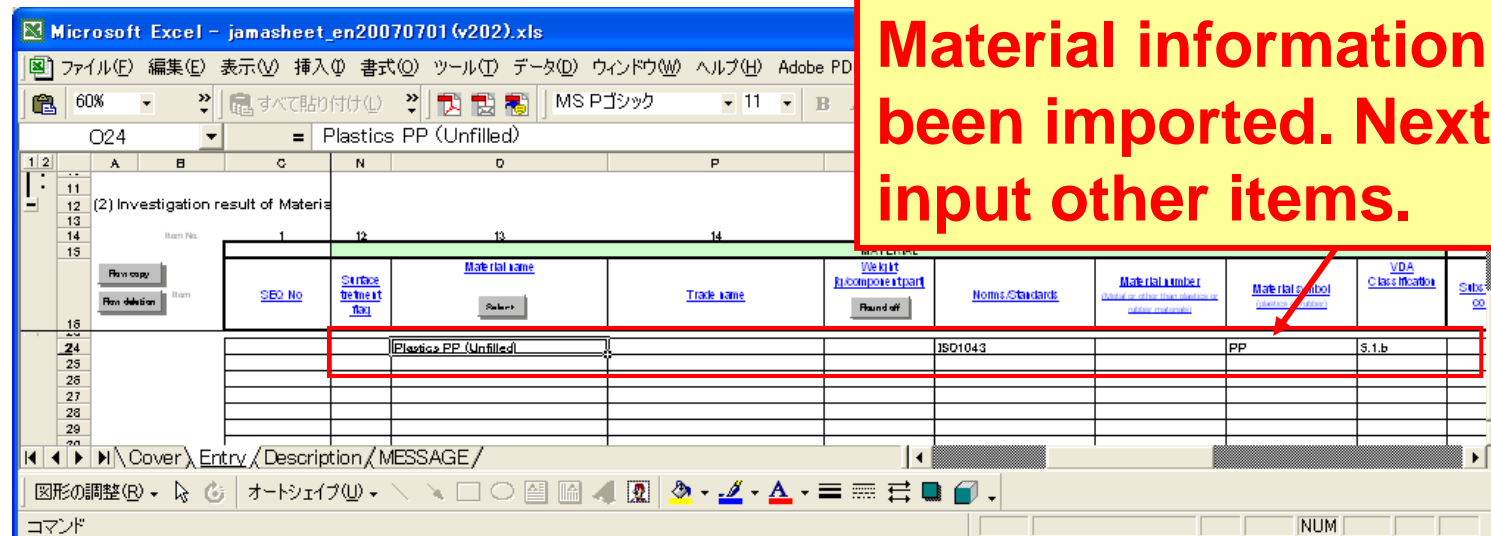
Screen image for material selection

(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

Surface treatment flag [12], 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

Substance count [20], Chemical presence type [23]
Substance code (CAS No.) [24], Substance name [25], Portion [26]

– JAPIA options

Portion (Minimum) [42], Portion (Maximum) [43], Portion (Rest) [44],
Node ID [Material] [47], Node ID [Substance] [48]

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

JIS H3270: C5341

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

JIS H4040, H4080: A2011, A6262

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

Ex1. Ti $5 \times C\%$ min (Ti content is over five times the C content.)

[JIS G3459 SUS321TP]

Ex2. C 0.15% min (C content is over 0.15%.) [JIS G4303 SUS316F]

(3) Regarding 'Remarks' and 'Notes' in the JIS spec

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

Ex1. Cu as impure content shall not exceed 0.30%. [JIS G3221]

Ex2. As impurities, Ni and Cu for each grade shall be 0.25% max. and 0.30% max., respectively. [JIS G3441]

Ex3. 0.60% max. of Mo may be added. [JIS G4303]

- **However, any agreement between the manufacturer and the purchaser is not reflected in the Standard Material data.**

Ex4. With agreement between the purchaser and the supplier, Zr+Ti may be 0.25% max. [JIS H4040]

Ex5. 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. [JIS G4801]

Ex6. For the tubes of Grade 15 made by electric resistance welded, the lower limit of C may be altered by agreement between the manufacturer and the purchaser. [JIS G3445]

(4) Regarding 'Others' , 'Other Substances' in the JIS spec

- If there are 'Others' or 'Other Substances', they are registered in the Standard Material data as 'Misc., not to declare'.
- If other substances are regulated as both 'Individual' and 'Total', '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(*)		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.	Remain- der
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.	Remain- der
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.	Remain- der
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.	Remain- der

(5) Regarding 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, reporting using Standard Material data is not allowed. Please report using the actual data as in b).

[How to rewrite the default data inputting by hand]

- (1) Select a material and import the default data (Standard Material data).
- (2) Overwrite data in the substance of which actual data on the chemical composition does not 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.

3. As a rule, use Standard Material data in cases when the material has Standard Material data. **But the user (person who inputs data to the JAMA sheet) has the responsibility in using Standard Material data, so check these Notes before using it.**
4. **'Application'** is not installed 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.