

iPCA/CSI

Compliance Substance Inspector

User manual

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Imprint

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I Introduction

This manual is intended for users of the module iPCA/CSI.

It describes the module Compliance Substance Inspector und its usage. The module comprises the CSI Management for the creation of rules and groups of rules and the check possibility against this rule groups within the module iPCA/IHS.

All available functions and their usages are described. The documentation has its main focus on the technical aspects of rules and rule groups and does not explain how the rules or the rule groups have to be set up functionally.

Information regarding the different iPoint Compliance Agent products can be found in the corresponding manuals.



2 New Functions

Release 8.10

• New function sub rule groups added (chapter 4.6)

Release 8.08

• Options for execution of CSI jobs (chapter 5.3)

Release 7.10

• Make rule groups available for Compliance Checks (Car / Product Model)

Release 7.07

• CSI Wizard: New result searches for MDS/all modules and received MDS

Release 7.05

- New attributes for rules and assigned rules
- New attributes for rule groups for further classification
- New attributes added in search windows and result lists
- Productive Release of rule groups

Release 7.0

• Naming changed to CSI so the screenshots may not be all corrected

Release 6.09

- Single check of basic substances for rules, conditions and exemptions
- Check of rules on each component level within the tree
- CSI Wizard

Release 6.08

- New rule types material- and application rule
- Association of CSI applications on component level
- Display of assigned rules as tree
- Creating of substance group types in tab substance groups directly
- Threshold interval for rules
- Conditions for rules on material reference

Release 6.07

Since the first version in V6.00 several new functions were added, amongst others the following features:

- New search criteria for searching the rules
- Changes in editing of rules
- New assignment between rules and exceptions
- Changes of combination between rules and exceptions
- New types and attributes for rules (material and application rules, "type")
- Import and export of rule groups (optional)
- Mass Checks with CSI Wizard
- CSI Checks with IMDS Application codes

Release 6.00

• First introduction



3 Support

For any questions about the application please contact your in-house administrator.

This administrator will check and answer your enquiry

If your in-house administrator can not solve the problem, he will contact iPoint-systems gmbh to get a solution for it.

It is important that only the in-house administrator contacts iPoint-systems gmbh as this is the only way to get a fast response and to avoid doing work twice.



4 CSI Management

4.1 General

The management can be started within the iPCA/IHS or optional as a separate application from the homepage of the iPCA. Within the IHS it can be found in the menu under "Extras" \rightarrow "CSI Management".



Figure 1: Start of the CSI Management within the IHS

If the CSI module has been activated by iPoint, only users who have a role including the right "CC_MANAGEMENT" or "CC_DEVELOPMENT" are able to start the CSI Management. The management contains the menu items "File" and "Help". The item "File" contains the following sub items:

- Reload master data: for refreshing shown values in combo boxes, e.g. after creating or editing a substance group
- Exit: To exit the management

The menu item "Help" contains the sub item "About" for showing which version of the CSI Management was started.

The four tabs within the management are explained in the following chapters.

4.2 Substance group types

Since version 6.08 the substance group types can be created or edited directly in tab "Substance groups" (see chapter 4.3) or within the IHS in the menu Extras \rightarrow Master data \rightarrow Substance group types.



4.3 Substance groups

Own substance groups can be created in this tab. This functionality is also available within the IHS, it can be found in the menu Extras \rightarrow Master data \rightarrow Substance groups (see also the IHS manual of the iPCA/IHS).

| 🗊 C | Compliance Checker Management | | | | | | | | |
|------|--|------|-----------------------------|------------|--------------|---------------|----------------------|-----------------------------------|-----------|
| File | ile Help | | | | | | | | |
| Subs | Substance group types Substance groups Remarks Rules Rule groups | | | | | | | | |
| 0 | | | 4 | | | | | | |
| | Name Co | de | Туре | | | | | | |
| | 1 MyLeadGroup | | MySubstanceGroups | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 0 | - | - | ad Cuarue | | | | 1.0.1 | 1 | |
| | Name: | wyce | auGroup | | | Type. MySubs | | stanceGroups | |
| | Code: | | | | | | | | |
| | Substances: | _ | Article name | CAS No. | EU-Index | Einecs/Elincs | Synonyms DE | GADSL | |
| | | 1 | Borate(1-), tetrafluoro-, I | 13814-96-5 | | 237-486-0 | Borate(1-), tetraflu | .DP | Ж |
| | | 2 | Carbonic acid, lead(2+) | 598-63-0 | | 209-943-4 | Lead carbonate | DP | |
| | | 3 | Cyanamide, lead(2+) sal | 20837-86-9 | | 244-073-9 | Lead(2+) cyanamide | DP | |
| | | 4 | Lead | 7439-92-1 | | 231-100-4 | | DP | |
| | | 5 | Lead arsenite | 10031-13-7 | | 233-083-9 | Lead(II) arsenite | DP | |
| | | 6 | Lead bis(dipentyldithioc | 36501-84-5 | | 253-068-0 | Lead, bis(dipentylc | .DP | |
| | | 7 | Lead chromate | 7758-97-6 | 082-004-00-2 | 231-846-0 | Plumbous Chromate | DP | |
| | | 8 | Lead chromate molybdat | 12656-85-8 | 082-010-00-5 | 235-759-9 | C.I. 77605 | DP | |
| | | 9 | Lead di(acetate) | 301-04-2 | 082-005-00-8 | 206-104-4 | Lead dibasic acetate | DP | |
| | | | 1. | | | | 1 | | ······ |
| o | | [| New | Edit | Delete | Sa | ve Ca | ncel Export | |
| | and the set of a start for | | | | | | | | |
| Use | r: imas-Admin | | | | | | | Copyright @ 2003-2008, iPoint-sys | tems gmbh |

Figure 2: CSI Management – Substance groups

Since version 6.08 it is possible to create a missing substance group type directly while creating/editing a substance group. By clicking the button (see green marking above) the dialog for editing the substance group types will open. An existing type can be chosen or a new type can be created within this dialog.



4.4 Remarks

Within the tab Remarks additional comments for a rule or several rules can be created. These remarks are e.g. shown during checks within the IHS, if a rule of a checked rule group was violated.

| 🜍 Con | Compliance Checker Management | | | | | | |
|------------|-------------------------------|---------------------------------------|--------|--|--|--|--|
| File H | lelp | | | | | | |
| Substa | nce group types Substan | ce groups Remarks Rules Rule groups | | | | | |
| - | Remark EN: Link: | Remark DE: | | | | | |
| 0 | | Search Reset | | | | | |
| | Remark EN Rema | rk DE Link: | | | | | |
| 0 | Remark EN: | Remark DE: | | | | | |
| 1 | Link: | | | | | | |
| J | | New Edit Delete Save Cancel Export | | | | | |
| User: | Imds-Admin | Copyright © 2003-2008, iPoint-systems | s gmbh | | | | |

Figure 3: CIS Management – Remarks

Within the area highlighted in orange search criteria for finding existing remarks can be entered. The green area contains two buttons, one for executing the search and the other one to reset the previously entered search criteria. Within the red area all matching remarks are shown after a successful search.

The yellow area can be used for entering or editing remarks. Is an entry selected from the list (red area), its values are shown in the corresponding fields of the yellow area. The action buttons are located within the turquoise area. The following actions are available:

New

Create a new remark

• Edit

Edit an existing remark (only enabled, if an entry was selected in the read area).

- Copy Copy of an existing and selected remark
- Delete Delete a remark (only enabled, if an entry was selected in the read area).
- Save

Save a newly created or edited remark (Only enabled after action "New" or "Edit").



- Cancel Cancel an action (Only enabled after action "New" or "Edit").
- Export (since version 6.0 this action is available by the button 速 in the green area) Export of the current search results (CSV or XLS).

4.5 Rules

In the tab "Rules", rules to check against within a rule group check can be defined. A rule is defined by the following attributes:

- Substance group
- Classification
- Application
- Action
- Remark
- Threshold(s)
- Validity date

The basic attributes of a rule are substance group, classification and application. Depending on the state of the rule the basic attributes can be edited or not (see also chapter 4.5.2 "Editing rules" starting on page 14).

| 🗬 cs | CSI Management | | | | | | | | | |
|--------|---|--------------------------|-------------|---|---|----------|------------------------------|------------------------------|------------------|----|
| File I | Help | | | | | | | | | |
| Subs | stance Groups Rem | arks Rules | Rule Groups | | | | | | | |
| | Substance group t Classification: Application type: Action: Threshold type: Valid from: Type: | All All All All | | > | Substance group: Reference: Application: Remark: Threshold A: Valid to: Single substance testing: | | Threshold B: At least one | | Limit unit: All | |
| | | | | | | | | | | |
| 0 | | | Search | Reset | | | | | | |
| | | abataree group | | | | | | in pange substance testing H | | |
| Ð | Туре: | | ~ | Single substar | nce testing: | At least | one | | Has to contained | |
| | Substance group t | | ~ | - Substance gro | oup: | | | | | ~ |
| | Classification: | | ~ | Reference: | | | | | | ~ |
| | Application type: | | × | Application: | | | | | | |
| | Action: | | × | Remark: | | | | | | 86 |
| | Threshold type: | | × | Threshold A: | | Threshol | ld B: | | Limit unit: | ~ |
| | Valid from: | | | Valid to: | | | | | | |
| | | | New | Edit | Сору | Delete | Save | Cancel | | |
| Licer | User:_ | | | | | | | | | |

Figure 4: CSI Management – Rules

The tab "Rules" shown in Figure 4 contains (similar to the tab "Remarks") five areas.

Within the orange area search criteria can be entered to find existing rules.

The buttons in the area marked in green can be used to perform a search or reset the search criteria, it is also possible to export the search result by clicking the export button **B**.

Within the red area all matching search results are shown after performing a search.



Within the yellow area rules can be created and edited. The following fields are available:

| Field name | Description | | | | |
|--------------------------------------|--|--|--|--|--|
| Туре | Rule type, see chapter 4.5.1 | | | | |
| Substance group type | Type of substance group to use, e.g. "IMDS" for substance groups of the | | | | |
| 0 1 /1 | IMDS online system | | | | |
| Substance group | The substance group for which this rule should apply. | | | | |
| Classification | The classification for which this rule should apply. For general rules "99" has | | | | |
| | to be selected. | | | | |
| Application type | Exists to differ between the different application sources. At the moment | | | | |
| · | following values are possible: | | | | |
| | IMDS – Applications of IMDS | | | | |
| | CSL – own newly created applications | | | | |
| | Undef for all other applications | | | | |
| | • Onder. – for an other applications, e.g. this type contains the | | | | |
| Application | The application for which this rule should apply. To create a missing | | | | |
| Application | application for which this rule should apply. To create a missing | | | | |
| Action | The estion to show if this rule is violated as a error warring on info (as also | | | | |
| Action | chester 4 5 2 "Actions of a mula" starting on page 14) | | | | |
| P I | chapter 4.5.5 Actions of a rule starting on page 14). | | | | |
| Кетагк | For selecting a remark to show if the rule is violated. If a remark is missing it | | | | |
| T | can be created in the search dialog. | | | | |
| I hreshold type | Type to validate against the threshold, e.g. | | | | |
| | • " $x < A''$ – the check value x has to be lower than the given threshold | | | | |
| | A | | | | |
| | • "A <x<=b" a<="" be="" check="" greater="" has="" td="" than="" the="" threshold="" to="" value="" x="" –=""></x<=b"> | | | | |
| | and lower or equal to threshold B | | | | |
| Threshold A The value of threshold A | | | | | |
| Threshold B | The value of threshold B if the selected type is applicable (i.e. this can be the | | | | |
| | greater limit of an interval). | | | | |
| Limit unit | Unit for the threshold, e.g. "%". If "Material" is selected as reference (see | | | | |
| | below) only "%" can be selected as unit. If the reference "Component" is | | | | |
| | selected "mg", "g" or "kg" can be selected as well. | | | | |
| Valid from | Date when this rule starts to be valid. | | | | |
| Valid to | Date until this rule is valid. If no "valid to" date is set the standard date | | | | |
| | "9999/12/31" will apply which means that this rule is valid "forever". | | | | |
| Reference | To select the reference, for which type the rule should be valid. "Material / | | | | |
| | Mixture" or "Component / Article" can be selected. | | | | |
| Single substance testing | Defines if the rule should check the basic substances of a substance group | | | | |
| | individually or commonly. | | | | |
| At least one | If the option "Single substance testing" is selected then a possible rule | | | | |
| | violation will be overruled when "at least one" basic substance of the selected | | | | |
| | substance group does not violate the given threshold. | | | | |
| | If this option is not selected, then each basic substance of a substance group is | | | | |
| | checked against the threshold and will be notified separately when a violation | | | | |
| | occurs. | | | | |
| | The search allows also this attribute: if the option is selected only rules are | | | | |
| | searched for in which the attribute is active. If the option is unselected all | | | | |
| | rules are searched in which the option is "Yes" or "No". | | | | |
| Has to contained | If this option is selected a rule violation occurs also if the checked node does | | | | |
| | not contain any basic substance of the selected substance group. | | | | |
| | This attribute is also available for the search: if the option is set only rules | | | | |
| | with an active option are searched for, if the option is unselected all rules are | | | | |
| | searched. | | | | |



Actions can be started within the turquoise area. The following actions are possible:

New

Create a new rule

• Edit

Edit an existing rule (see also chapter 4.5.2 "Editing rules" starting on page 14).

- Copy Copy the rule selected within the red area
- New version

Similar to copy, but creates a new version of a selected rule. For new versions of a rule all fields can be edited except the basic attributes. This action should be preferred instead of copy when e.g. only the threshold is changed. With versions a history of rules can be established and changes over time are better understandable.

- Delete Delete a selected rule. Only enabled if a rule is not yet part of a rule group.
- Save
 Save the entered rule attributes. Only enabled after action "New", "New version", "Copy" and "Edit.
- Cancel Discard all changes on a rule. Only enabled after action "New", "New version", "Copy" and "Edit.

4.5.1 Rule types, exemptions and conditions

There are 4 possible rule types available.

Common rule

A common rule is a rule which is valid for a substance group, for all classifications (= 99) and which has the application "General".

The application "General" means, that this rule is always valid no matter which applications are set within the checked MDS/module.

Specific rule

It describes a rule which is valid for a substance group and for which a certain classification and a certain application are defined.

Material rule

A material rule is a rule which is valid for a substance group, a classification and the application "General". With this rule it can be checked whether the weight percent sum of all substances of a substance group within a material with the specified classification is violating the given threshold of the rule (e.g. Aluminium with at least 50% within an Aluminium alloy).

Application rule

It describes a rule which is valid for a substance group, for all classifications (= 99) and a certain application. This rule checks if an application within a substance group does not violate a certain value.

If rules are defined in a rule group (see chapter 4.6) they can be joined by further, subordinated rules which will be checked when the corresponding rule is violated:

Exemptions

A rule which is defined as "exemption" overrides the rule to which the exemption belongs. I.e. if there is a violation of a rule,



- then it will be checked if there exists an exemption rule;
- if that exemption exists
 - o then it will be checked if the definition of the exemption rule overrides the violation;
 - if the violation is overridden then there will be no notification,
 - in all other cases a notification of the violation against the exemption and against the rule itself will be done.

Conditions

A rule which is defined as "condition" controls if existing exemption rules should be checked at all. I.e. if there is a violation of a rule,

- then it will be checked if there exists a condition;
- if a condition exists
 - then it will be checked if the condition is fulfilled;
 - if yes then the check routine will perform the existing exemption rules.

4.5.2 Editing rules

Rules can be edited without any restrictions if a rule

- is the first version
- does not belong to a group

Editing a rule is restricted if a rule

- is the latest version but not the first version
- is used within a not released group

This restriction applies for the substance group, classification and application.

Rules can not be edited if a rule

- is not the latest version
- belongs to a released group

4.5.3 Actions of a rule

The actions which can be defined for a rule have in relation with the validity "from" and "to" the following effects while checking an MDS:

Rules

- Case I: "Valid from" of the rule lies ahead
 - \rightarrow nothing happens because this rule is not checked if the warning phase has not been reached yet.
- Case 2: "Valid from" of the rule lies in the past and "Valid to" lies ahead
 → the defined action (e.g. error)
- Case 3: "Valid from" of the rule lies in the past and "Valid to" lies in the past
 → nothing happens because this rule can not be checked

Exemption rules

Case I: "Valid from" of the rule lies ahead

 \rightarrow nothing happens because this rule is not checked if the warning phase has not been reached yet.

- Case 2: "Valid from" of the rule lies in the past and "Valid to" lies ahead
- ightarrow the defined action

If "Valid to" lies inside the warning phase the afterwards schedules rule which substitutes the exemption rule will be shown as warning as long as a violation occurs against that rule. The substituting rule could be either the corresponding common rule or another exemption rule.



Case 3: "Valid from" of the rule lies in the past and "Valid to" lies in the past
 → This exclusion is not valid any more, the common rule is used

Following notification scheme will be performed for rules for which a violation occur:



Figure 5: Progress of the warning phase

The warning phase starts before a rule or an exemption rule becomes operative or is suspended, i.e. before it gets or loses their validity. During this phase a violation will be notified as warning principally and independently which actual action is defined for the rule.

The warning phase during the exemption rule differs from the common rule to that effect that if the validity of the exemption rules ends the possible violation of the common rule will result into a warning. In contrast the end of the common rule does not result into an action or a notification. If there exists a further exemption rule which can be applied to (e.g. an exemption rule which substitutes another exemption rule from an effective date X because of a change of the valid threshold) then this rule will be additionally shown as warning instead of the common rule as along as a violation occurs.

The warning phase which is mentioned above can be configured in IHS (Menu \rightarrow Options \rightarrow Parameter \rightarrow CSI Parameter – see also chapter 6.2).

4.5.4 Single check for basic substances

If the single check is active then the percentages of the substance of a substance group will be checked against the threshold separately. A notification will be created for each substance of a substance group which violates the threshold.

If the single check for basic substance is deactivated however, the percentages of the substances of a substance group will be summarised and this calculated value will be checked against the threshold.

4.6 Rule groups

The tab rule groups can be used to define a set of rules. Rule groups can be created and edited and rules can be assigned to them.

A rule group has the attributes name, description and the rules which belong to this group.



Figure 6: CSI Management – Rule groups

Figure 6 shows the tab "Rule groups". It is divided into five areas.

The orange area can be used to enter search criteria for finding existing rule groups. The following search criteria are available amongst fields described below for editing:

- User User who released this rule group for usage
- Date Date when the rule group was released
- Assigned rule Rule which is assigned to the rule group
- Assigned norm Norm which is assigned to the rule group
- Released Search for rule groups which were released
- Released productive Search for rule groups which were released for production
- Show deleted Also show rule groups which have been deleted and are thus not usable any more

The green area can be used to perform a search and to reset the search criteria. With the export button it is also possible to export the data of a selected rule group into an excel data sheet.



Within the red area all matching search results are shown, the following columns are displayed amongst others which are described below

- Version Version of the rule group
- Amount of rule groups The amount of assigned sub rule groups
- Amount of rules The amount of assigned rules/exemptions
- Released Following values can be displayed
 - "Yes" if the rule group was released
 - "Yes (productive)" if the rule group was released for production
 - o "No" otherwise
- Release User
 User who released the rule group
- Release Date Date when the rule group was released
- Changed by User who has changed the rule group (e.g. released for production)
- Changed at Date when the rule group was changed (e.g. released for production)
- Source system The company which provided the rule group

The attributes of a rule group can be edited in the yellow area. The following attributes are available:

| Field name | Description | | | | |
|----------------------------|--|--|--|--|--|
| Short name | Name of the rule group (is also shown while checking a MDS). | | | | |
| Origin name | Description of a rule group. | | | | |
| Released | For releasing a rule group which should/can be used for checks, see chapter | | | | |
| | 4.6.2 | | | | |
| Rule Type | Additional attributes for further marking/usage/classification of the rule group | | | | |
| GEO/ECO (Target) | | | | | |
| Target | | | | | |
| Substance ban | | | | | |
| Marking |] | | | | |
| Registration |] | | | | |
| Tab Assigned rules | Rules, conditions and exemptions which are (or will be) part of this rule | | | | |
| | group. | | | | |
| Tab Norms | Norms which are (or will be) assigned to this rule group (optional: module | | | | |
| Assigned norms of the rule | IHS Norms required). | | | | |
| group | | | | | |

In the two sub tabs "Rules" and "Norms" the rules and norms which are assigned to the rule group are shown in tables. For editing the table lists various action buttons are available.



Tab Rules

🧕 Add Rule

With this button a rule can be selected and added to the rule group which is selected within the red area if the rule group is in Edit mode (Button "Edit"). See also chapter 4.6.1.

If a rule is added whose attribute "reference" has the value "Component", then it must be decided if the rule should check components on each level. The decision will be shown in the column "Check on each level".

- If the question is answered with "**Yes**" then the rule will be checked on each component level within the structured tree and a message will be created for each component if a violation occurs.
- If the question is answered with "**No**" the message for a violation will only be created at that component node on which the rule was violated the first time.
- At the moment this functionality is only available for rules with reference "Component".

Add Exemption

Add an exemption under a rule or condition. Exemptions can only be added under rules or conditions. Condition

🔺 Add Condition

Add condition under a rule. Conditions can only be added under rules with reference "Material". Exemptions must be added under a condition!

Add a sub rule group

With this Button an existing rule group can be selected and added to the current rule group. The adding of a sub rule group is only possible, if the line I is selected and the current rule group which is in edit mode, is not used in another rule group as a sub rule group. Was a rule group checked, which contains other rule groups, in case a possible violation the name of the sub rule group will be displayed.

Delete selected rule

Rules, conditions or exemptions can be removed from the list by clicking this button.

Replace rule(s) by newest version

See below chapter 4.6.1

៤ 🕒 Check on each level

can only be activated or deactivated for rules with the reference "Component/Article". If this option is set the rule will be checked at each component node beginning with the top level node. Nevertheless how often the violation occurs within the tree each violation results in a message text. If the option is not set only the top node will be checked and result in a message text if a violation occurs. Also the rule is only checked at that node if the other parameters (e.g. classification or substance group) are fulfilled. If e.g. a node which has to be checked does not contain the classification "x" which is set for the rule this node will not be checked.

🔍 🔕 Notify on violation

can be set or reset for "rules".

If this option is set a rule violation will also be notified if an exemption of the rule is violated. If the option is not set only the violation of the exemption results into a notification. This is the default setting since V.7.5 to avoid duplicated notification of the exemption's and the rule's violation.

<u>Tab Norms</u>

违 Add norms

The assignment of norms is done with this button.

🔟 Delete

Remove a norm from the list.

If changes were made the have to be saved by clicking the button "Save", the button "Cancel" reset the changes.

The turquoise area contains the action buttons. The following actions are available:



- New For creating a new rule group.
- Release productive/Remove productive release Activating a released rule group for productive usage (see chapter 4.6.22) or reset this release.
- Check setup For activating a released rule group for the check configuration (see chapter 4.6.23).
- Edit Edit an existing rule group. This is only possible as long as the rule group is not released.
- Copy Copies the rule group selected within the red area with all of its assigned rules and norms.
- Delete Deletes a selected rule group (but not physically). A deleted rule group can not be used for checks any more and its check results are not available any more.
- Save

Save the entered data of a rule group. This button is only active after clicking the buttons "New", "New version", "Copy" and "Edit".

 Cancel Abort the editing of a rule group. Only active after clicking the buttons "New", "New Version", "Copy" and "Edit".

4.6.1 Assigning rules to rule groups

The assignment of sub rule groups to rule groups obeys the following guidelines:

- I. The same sub rule group can only be assigned once to a specific rule group
- 2. Rule groups which contain also sub rule groups cannot be assigned as sub rule groups.
- 3. Only one version of a rule group can be assigned as a sub rule group.
- 4. A rule group cannot be assigned as sub rule group under itself.

An assigned sub rule group can have one of the following states:



A newer version exists

The assignment of rules to rule groups obeys the following guidelines:

- I. The same rule can only be assigned once to a specific rule group.
- 2. The same exemption rule can only be assigned once under a rule.
- 3. The same condition can only be assigned once under a rule.
- 4. The same exemption rule can only be assigned once under a condition.
- 5. Different versions of a rule can only be assigned to a rule group if the validity dates do not overlap.
- 6. A condition can only be assigned to a rule if the attribute "reference" of the rule contains the value "Material"
- 7. The option "Check on each level" is only available for those rules whose attribute "reference" contains the value "Component".



If a rule is deleted from a rule group and exclusion rules for the general rule are part of the rule group, a warning window appears to inform that all exclusion rules will be deleted from the rule group as well – a possibility to cancel the deletion is offered.

An assigned rule can have one of the following states:

- Latest version
- A newer version exists
- Rule invalid, "valid to" lies in the past. The rule is only used during checks if the due date lies within the validity dates of the rule.

All assigned rules of which exists a newer version can be updated to their latest version with the button 🔿 while editing a not yet released rule group. This means that all assigned rules are replaced by its newest version.

4.6.2 Release rule group/release productive

If a rule group is complete it has to be released so that any further changes cannot be done and to have traceability for CSI checks.

If a rule group is edited and the check box "Released" is set a dialog appears in which exists the possibility only to release the rule group or to make the rule group productive.

| Release Rule Group | | | | | | |
|--------------------|--|--|--|--|--|--|
| 2 | Do you really want to release this rule group? | | | | | |
| ~ | If you release this rule group, it can not be changed any more. If you release this rule group for productive usage, all users with sufficient rights can use this rule group in the CSI wizard or for CSI checks in an MDS. | | | | | |
| | Release productive Cancel | | | | | |

Figure 7: CSI Management – release a rule group

If the rule group is released the user cannot use it yet. A productive release means that this rule group is available for CSI checks performed by all users (with the corresponding rights).

If a rule group is released or released productive immediately, also assigned sub rule groups will be released. Is the release of a sub rule group not possible, because of errors, the main rule group will also not been released. In this case please correct the errors in the displayed sub rule group first

The rule groups in future provided by iPoint-systems are only released but not released for production. This release has to be done by the responsible IMDS administrator of the company himself that the company's users can use those rule groups.

Additionally to the release during editing of a rule group there is a button "Release productive" available in the lower area of the rule group window. This button is only active for release rule groups. To remove the productive release the button "Remove productive release" has to be activated.

Attention: If a productive release is removed, normal users can not use this rule group any more in the CSI wizard or for CSI checks of MDS. Each usage in other checks e.g. USC/SCM checks is removed automatically so that this rule group can not be checked any more.



4.6.3 Make rule groups available for other checks (optional)

Productive released rule groups can be made available for other checks. At the moment this is possible for the following check configurations:

- SCM/USC Inbox
- Compliance Checks (optional)

After pressing the button "Check setup" in the tab rule groups the following dialog will be shown:

| | CSI check configuration | | | | | | | | |
|-------------|--|---|----------------------|--|--|--|--|--|--|
| (| Checking the CSI rule group is configured as follows: | | | | | | | | |
| | | Check name | Available for check? | | | | | | |
| | 1 | Complaince Checks (used for Car/Product Models) | | | | | | | |
| | 2 | SCM/USC Inbox Check | | | | | | | |
| | | | | | | | | | |
|] ((| If the rule group check is made available for a check, it has to be configured/activated within that check. If a rule group check is marked as not available for a check, it is automatically removed from that check. | | | | | | | | |
| | Save Cancel | | | | | | | | |

Figure 8: CSI Management - dialog for check configurations

The selected rule group can be activated or deactivated for the corresponding check. To be able to use this functionality the user must own the user right "CC_CHECK_CONFIG".

After activating at least one rule group for a check configuration a new additional tab will be displayed in the corresponding check configuration (see Figure 9).

| Check configurations | | | | | | |
|--|------------------------|------------|-------|-------------|--------------|-----------------|
| Name: MODULE_SCM Description: SC | M/USC Inbox Check | | | | | |
| Recommendation Checks Application Ch | necks General Checks | PCC checks | | | | |
| Description | | | | Precheck | Manual check | No check at all |
| Released rule groups ELV EU-2008/689/EC (2) | | | | 0 | 0 | ۲ |
| | < Previous | Save | Reset | Parameter > | | |

Figure 9: iPCA/IHS – check configuration

In this configuration window the user can decide if the released rule group should be checked during the activated check or not.



4.7 Exchange of rule groups (optional)

It is possible to exchange rule groups with other customers who fulfil the appropriate requirements.

4.7.1 Export

The export of a rule group can be done with the button "Export" 📑 in the tab rule group if the following requirements are fulfilled:

- The company has licensed the function "Export"
- The user has the right "CC_EXPORT"
- The selected rule group is released
- The selected rule group is an own rule group

If all requirements are fulfilled the following window appears after click of the button "Export":

| 📦 Export Search-Result 🛛 🔀 |
|---|
| Choose the export type: • Export data as a XLS document. • Export data as exchange format. File for saving the export: File |
| Save Cancel |

Figure 10: iPCA/CSI Management – Export dialog

For exporting the rule group for data exchange the selection "Export data as exchange format" has to be selected. Additionally the target file and directory have to be chosen by clicking the button "File". The export will be performed after clicking the button "Save".

4.7.2 Import

The import of a rule group is available in the menu "Data" \rightarrow "Import rule group" if the following requirements are given:

- Company has licensed the import
- The user has the right "CC_IMPORT"

If these requirements are fulfilled the following menu will be displayed:

| 📦 CSI Management | | | | | | | | |
|------------------|------|------------------|-------|-------------|--|--|--|--|
| File | Data | Help | | | | | | |
| Sut | Ir | nport rule group | Rules | Rule Groups | | | | |

Figure 11: CSI Management - Menu Import rule group

After selecting the menu item the following window is shown:





Figure 12: CSI Management – Window import rule group

After selecting the CSI-exchange file (extension *.pcc) the import can be started by clicking the button "Start". If there are no errors the newly imported rule group can be searched for in the tab "rule group".



5 Checks within iPCA/IHS

5.1 General

For checking rule groups which have been created in the CSI Management, the "CSI check" can be used within loaded MDS or the "CSI Wizard". The CSI check of a loaded MDS can be started by clicking the icon 💿 in the toolbar. The CSI Wizard is found in the analysis window within an own tab and is used for performing or analysing checks for multiple MDS/Modules.

5.2 CSI Check

The CSI check is only enabled, if the user has the right "CC_CHECK". If the CSI check is started, the following dialog appears:

| 📢 Group Selection | | | | | | | | | |
|---|------------|--|--|--|--|--|--|--|--|
| Choose rule groups for check: | | | | | | | | | |
| Due date: | 2001/01/01 | | | | | | | | |
| ELV EU-2008/689/EC (Version: 4) | | | | | | | | | |
| ELV EU-2008/689/EC (Version: 3) | | | | | | | | | |
| EU-ELV (Not yet released) (Version: | 1) | | | | | | | | |
| Ford RSM5 2009 (Version: 1) | | | | | | | | | |
| GAD5L 2009 (Version: 1) | | | | | | | | | |
| RoHS EU-2008/385/EC (Version: 1 |) | | | | | | | | |
| test (Not yet released) (Version: 1) | | | | | | | | | |
| USC-Application-Checks (Version: | 1) | | | | | | | | |
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Figure 13: iPCA/IHS – CSI check window

In this dialog it can be defined for which due date and against which rules the check should be executed.

- Not yet released rule groups are displayed in *italic* and red text, "Not yet released" is added to their name,
- Released rule groups are displayed in orange
- Productive released rule groups are displayed in green

For users who have the right "CC_INSPECTOR" all rule groups are available, other users can check only rule groups which are productive released.

After the selection of one or more rule groups the MDS can be checked by pressing "OK". If rules of the selected rule groups are violated, notifications about the violations are shown in a list.



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| test cc com | nponent | | | | _ | | | | | | |
|--|-------------------|-----------------|-------------------------|----------------|-------------|-------------------|---------|---------------------------------------|-------------|---|---------------|
| B 😞 🗞 | A 🖓 E | 3 🖌 🖉 | 🋸 🚳 💀 📲 | |) 🔸 🖨 | : 🖆 🔑 🦻 | 8 | Rec 🌒 🗟 | * 📑 | | |
| Ingredients Supplier data Recipient data Recyclate Information | | | | | | | | | | | |
| test cc com | ponent | | | | | IMDS IHS | | | | | |
| e test cc i | materiai (1 g) | | | | | Туре | c | Component / MDS | (Edit mode) | | ^ |
| | | | | | | MDS Supplier | | NUMBER OF STREET | (RECOMPANY) | | |
| | | | | | | Nama | [| test co componer | | | |
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| | | | | | | IHS-Item-No. | L | text.cc.1 | | | |
| | | | | | | Measured Weight | L | 1 | y 🗸 | | |
| | | | | | | Tolerance (+/-) | [| · · · · · · · · · · · · · · · · · · · | 6 | | |
| | | | | | | Calculated Weight | | 1 | a 🗸 | | |
| | | | | | | Deviation | [| 0 | 6 | | |
| | | | | | | | | | | | ~ |
| Guality check | Recommendation | n check ToDo's | System errors Comp | iance Checker | | | | | | | |
| Checked Module | e/MDS: test cc ci | omponent - Due | date: 2008/02/14 | | | | | | | Show only errors | |
| Action | Rule group | Name | Substance group | Classification | Application | Value | _imit | Valid from | Valid to | Remark Path | |
| 1 Error | EU-ELV | test cc materia | l Lead or its compounds | 99 | General | 0.15 % | = 0.1 % | 2003/01/01 | 9999/12/31 | Gemäß EU-Richtlinie 2000/53/EG (Altfahrzeug) wird ein Kon [test (| cc component] |
| | | | | | | | | | | | |
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| | | | | | Correct | Сору | | Export | Close | | |
| | | | | | | | | | | | |

Figure 14: iPCA/IHS – checked MDS with notification list

The notification list contains the following columns:

- Action The action for the rule (during the warning phase the action is always "Warning").
- Rule group The name of the rule group which contains the violated rule.
- Name The name of the material which contains the substance(s) of a substance group which violate the rule
- Substance group
 The name of the substance group which corresponds to the basic substances
- Substance info

Contains the name and the CAS-No of the basic substance which has violated the threshold (only with content for violations of rules with single check)

- Classification The material classification which is valid for the rule (99 = all materials)
- Application The application which is valid for the rule (General = Common rule)
- Value

The calculated value which violated the threshold (the sum of the substance percentages of the substance group)

- Limit/Threshold The given threshold which is checked
- Valid from Date since when the rule is valid
- Valid to Date until when the rule is valid



- Remark The description of the violated rule
- Path The path within the structure tree for the material which contains the basic substances of the substance group which violated the rule.

At the moment the result of a CSI check for a single MDS is not saved completely. Therefore the worst result of violated rules (Error > Warning > Info) of a check of an MDS against a released rule group is stored in the IHS comment field in following format:

| | [Due date] | [Rule group (version)] | [Result] |
|----------|------------|------------------------|----------|
| Example: | 2008-01-15 | EU-ELV (I) | Error |

5.3 CSI Wizard

The wizard can be opened with the icon for the analysis.



Figure 15: iPCA/IHS – Analysis Icon

The other possibility to open the window is using the menu "Data \rightarrow Analysis". After displaying the window the wizard can be found in the tab "CSI Wizard". With the wizard it is possible to check multiple MDS/Modules against specific rule groups for a specific due date. Additionally the results of such a mass check of multiple MDS/Modules can be viewed.

Attention:

Results of the CSI check for a received MDS which was in Handshake mode can differ from the real state of the MDS or can be invalid. Therefore we recommend to check those received MDS again which are not internally released and which are received again after a rejection.



The check with the CSI Wizard comprises the following steps:

Step I: Selection of an action

| Analysis | |
|--|--|
| Usage of MDS/modules MDS/Module Analysis CSI wizard | Reports |
| Step 1: Please select action: | |
| Check (start a new check of data): | Options: |
| Component | Job name: |
| Semicomponent | Email notification after job was finished. |
| Material | Attach results to email. |
| Received | Start date and time: 12:00 AM |
| Sent | Cyclical |
| l J | Interval: (at least 3 days) |
| | |
| | |
| View results (inspect results of previuosly started checks): | |
| Il MDS/modules | |
| Received | |
| Sent | |
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| | < Back Next > |
| | |

Figure 16: iPCA/IHS CSI Wizard – Step 1

In step 1 (see Figure 16) it must be decided, if a new check is to be started (top area) or if results of a previously performed check should be shown (bottom area).

For checking, the type of MDS/module must be selected (blue area). The following types are available:

- Part/Semi-component or material parts, semi-components or materials can be chosen for checking with the standard search
- Received/Sent received or sent MDS can be chosen for checking with the standard search
- Articles/mixtures (optional for module "SAM-M") articles or mixtures can be chosen for checking with the standard search

For execution of the analysis some further options (optional) can be selected in the green area:

- Job name: Name for the CSI job which is shown in the Job Management and can be used as a search criteria there
- Email notification after job was finished: The user which created the CSI job will get an email if the CSI job was finished (either successful or not successful)
 - Attach results to email: Only selectable if email notification has been selected. If chosen a protocol is attached to the mail the protocol will contain information about the checked rule groups, for which due date and how many data sets have been checked
- Start date and time: If selected a start date and time can be defined for the CSI job as earliest allowed start date and time for the execution of the CSI job. If nothing is selected, the CSI job is executed at the



next possible time.

For this function the permission CC_SCHEDULE_JOB or CC_CYCLIC_JOB must be active for the role of the user.

- Cyclical: If selected the CSI job will be executed cyclically and the results of the last run can be shown (see Step 3 (view results)). If cyclical is selected, a start date and time must be entered as well. For this function the permission CC_CYCLIC_JOB must be active for the role of the user.
 - Interval: The interval between the executions of the cyclical CSI job.

For viewing results, the following search types are available:

- MDS/all modules: All checked MDS/modules can be shown with the standard search
- Received/Sent: All checked received/sent MDS can be shown with the standard search
- All (optional for module "SAM-M"): All checked MDS/modules, articles and mixtures can be shown with the standard search

Pressing "next" opens the next step of the wizard.

Step 2: Selection of the rule group and the due date

| 🖬 Analysis | - • • |
|--|-------|
| Usage of MDS/modules MDS/Module Analysis CSI wizard Reports | |
| Step 2: Select one or more rule groups and one due date. | |
| | * |
| EU-ELV (Version: 4) | |
| SVHC Check General (check each level) (Version: 1) | E |
| USC-Application-Checks (Version: 1) | |
| Test.ci.cule group 81 (Version 1) | |
| These courses group 47 (Version 1) | |
| The Meet calcule group 40 (Mersion 1) | |
| CMR 1+2 (Version: 2) | |
| ELV EU-2008/689/EC (Version: 2) | - |
| Use latest rule group version while checking | |
| | |
| © 2011/08/17 (Generate dynamic due date) | |
| ○ 2011/08/17 () | |
| 2009/06/01 (SVHC = 0,1%) | |
| © 2008/12/31 (Cd - Batteries for electrical vehicles) | E |
| 2006/06/30 (Cd - Thick film pastes) | |
| © 2006/12/30 (Cd - Optical component in a glass matrix used for Driver Assistance Systems) | |
| © 2008/06/30 (Cr6+ - Corrosion preventive coatings) | |
| © 2010/12/31 (Pb - Solder in electronic circuit boards and other electric applications) | - |
| < Back Next > | |

Figure 17: iPCA/IHS CSI Wizard - Step 2

In this step at least one rule group (see chapter 4.6) has to be selected and the due date (see chapter 6.3) for which the check against the rule group(s) shall be performed.



For the check of multiple MDS/Modules only rule groups are available which are:

- Released, they are displayed in orange
- Productive released which are displayed in green.

For users who have the right "CC_INSPECTOR" both released rule groups and productive released rule groups are available, other users can only select rule groups which are productive released.

If the option "Cyclical" has been selected in step I, an additional due date (Generate dynamic due date) is available for selection. During the cyclical execution of the CSI job the current date at the time of the CSI job run is used as due date.

If "show result" was selected in the first step, the options for rule group and due date selection are harmonised. If you select rule groups, you can only select a due date which has results for at least one of the selected rule groups. If you select a due date, you can only select rule groups which have results for this due date.

If the selection is done the next step is shown by clicking "Next".

Step 3 (Action check): Search for MDS/Modules and the selection to check



Figure 18: iPCA/IHS CSI Wizard – Step 3 (check)

If the choice "Check" was selected in step 2 then the user can now search and select the MDS/Modules which shall be checked (in figure 18 the component search is displayed). By searching with various search criteria it will be determined which MDS will be checked against the rule group(s) which are selected in step 1. If the search was successful with clicking of "Next" a database job is created which checks all found MDS/Modules

and the window for the last step will be shown. The job will be check all MDS/module which were found, not only the displayed ones.



Step 4 (Action check): Hints

| 🚺 Analysis | | | | | | | | | | | | |
|---|--|-------------------|---------------|----------------|------------------------|--|--|--|--|--|--|--|
| Usage of MDS/modules | MDS/Module Analysis | CSI wizard | Reports | REACH | | | | | | | | |
| Step 4: Database job created. | | | | | | | | | | | | |
| A DB job (ID = 144) was created, which checks the MDS/modules against the selected rule groups. | | | | | | | | | | | | |
| The state of the job can b | The state of the job can be reviewed in the DB-Job management. | | | | | | | | | | | |
| After the job was execute | ed successfully, please rest | art the CSI wizar | d to show the | e result of th | e checked MDS/modules. | | | | | | | |
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| | < | Back | Restart | | | | | | | | | |

Figure 19: iPCA/IHS CSI Wizard – Step 4 (check MDS/Modules)

In this window the created Job and further instructions are shown.

The state of the check job can be reviewed in the DB-Job management (to find under Extras > DB Job Manager). The button "Restart" returns to the first step of the wizard e.g. to start a new check job.



Step 3 (view results): Search for already checked MDS/Modules

If the choice "View results" was selected in step 2 then a window is shown in step 3 in which a search is performed for already checked MDS/Modules.

| 🚺 Analysis | | | | | | | | | | |
|---|--------------------|-----------------|------------|----------|------|---------------|------------|---------|---------------|-----------|
| Usage of MDS/modules | MDS/Module Analys | is CSI wizard | Reports | REACH | | | | | | |
| Step 3: Search and select a MDS/module to show rule violations. | | | | | | | | | | |
| Rule Groups ELV EU-2008/689/EC (4) | | | | | | | | | | |
| Due date: 2011/01/01 (E | LV Stichtag) | | | | | | | | | |
| Name: | | | | | | Suppl./Org.ur | nits: | | | 86 |
| Part-/Item-/Mat. | | | | | | Origin: | () a | all 🔘 M | DS only 📃 | published |
| ID No.: | | IMD | 5 Node-Id: | | | 🔽 current Ve | ersion 💿 c | wn 🔿 M | iodule only 📃 | accepted |
| + Extended | | | | | | | | | | |
| 🛨 Customer search | | | | | | | | | | |
| | Searc | h Re | set | | | | | | | |
| Data | | | | | | | | | | |
| Name | Part-/Item-/MatNo. | IHS-Item-No. IM | DS-ID | Supplier | Туре | Creation date | Rule Group | Result | Check date | |
| | | | | | | | | | | |
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| | < E | ack | Load | Deactiv | ate | Delete | Next | > | | |
| | | | | | | | | | | |

Figure 20: iPCA/IHS CSI Wizard – Step 3 (show results)

The search will only list MDS/Modules which have been already checked against the rule group(s) which were selected in step 1 (in figure 20 the MDS/all modules search is displayed). The list shows a summary of the result for each rule group per MDS/Module. I.e. if a MDS/Module was checked against several rule groups then each rule group will be listed in a separate row.

The following columns are shown (depending of chosen search type in step 2):

- Rule group The name of the checked rule group
- Name The name of the checked MDS/Module
- Part-/Item-/Material No The corresponding value of the checked MDS/Module
- IHS-Item No
 The internal No of the checked MDS/Module
- IMDS-ID IMDS Module ID and version of the checked MDS/Module
- Result of the violation of the rule (= action during rule definition)
 - Error at least one error occurred during the check
 - Warning no error but at least one warning occurred
 - o Info no error and no warning occurred but at least one info





- OK no error, no warning and no info occurred
- Check date Date when the check of the MDS/Module against the given rule group has been performed

By clicking the button "Load" the selected MDS/Module can be opened for editing or viewing. Also it is possible to delete or deactivate one or more selected MDS/modules by using the buttons "Delete" or "Deactivate". After selection of one or more checked MDS/Modules which have not the result "OK" and clicking "Next" the last step (4) is shown. Before entering step 4 it has to be decided if only information (errors, warnings) for the root node is shown or for all nodes. The information for the root node is especially useful if the rule group contains rules with the reference "component" and "check on each level".



| | 🗌 Analysis | | | | | | | | | | | | | | | |
|---|---|--------|------------|------------|------|-----------------|----------------|----------------|-------------|-------|-------|------------|----------|--------|---------------------|--|
| | Usage of MDS/modules MDS/Module Analysis CSI wizard Reports REACH | | | | | | | | | | | | | | | |
| S | Step 4: Rule violations of checked MDS/module. | | | | | | | | | | | | | | | |
| 0 | Due date: 2011/01/01 (ELV Stichtag) | | | | | | | | | | | | | | | |
| | Details: All | | | | | | | | | | | | | | | |
| | | Result | Check date | Rule group | Name | Substance group | Substance info | Classification | Application | Value | Limit | Valid from | Valid to | Remark | Path | |
| | 1 | | | Barribara | - | | | - | | - | | | | ···· | Margar 12 | |
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| | | | | | | < Back | | w node | Export | | | Done | | | | |

Figure 21: iPCA/IHS CSI Wizard – Step 4 (show results)

All violations of rules for one or more MDS/Modules will be shown per rule group. The following columns are available:

• Result

of the violation of the rule (= action during rule definition), values see above

- Check date Date when the check of the MDS/Module against the given rule group has been performed
- Rule group The name of the rule group to which the rule is assigned which causes the violation.
- Name The name of the check MDS/module
- Substance group
 The name of the substance group



- Substance info The name and the CAS-No of the basic substance which violated the threshold (only filled for violations of rules with single substance check)
- Classification The material classification for which the rule is valid (99 = all materials)
- Application The application which is valid for the rule (General = Common rule)
- Value The calculated value which exceeds the threshold (the sum of the substance percentages of the substance group or for substance single check the value of one basic substance)
- Limit The valid threshold
- Valid from
 Date since when the rule is valid
- Valid to Date until when the rule is valid
- Remark The description of the violated rule
- Path

The path of the material within the structure tree which contains the substance(s) of the substance group which violates the rule.

Is a violation selected then clicking the button "Show Node" opens the MDS/Module that contains the selected node in which the violation occurred. The node is automatically selected in the tree structure and the results of the CSI check are additionally shown either in a separate check result window or in the inline result window.

5.4 Assignment of an exemption rule (application) to a MDS/Module

For making it possible to define exemption rules before or after the checking of specific sets of rules (rule group) the user has the possibility to add applications during editing a material or a component. Such an application represents therefore an exemption of a rule violation when a check against a rule group is performed. Additionally it is possible with these applications to trigger a check using special rule (e.g. exemption rule).

5.4.1 Material

Additionally to the IMDS applications of the materials it is also possible to add CSI applications. In the tab "Compliance Applications" (see figure 21) all substance groups are displayed which are used within the material and which fulfil all of the following requirements:

- it exists a rule for the substance group and
- the rule is assigned to a rule group and
- an application (not "General") is selected in the rule

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| test für cc simple node (1 EA) Garbon (0.9 - 1.03 %) Carbon (0.9 - 1.03 %) Tron (97.065 %) Manganese (0.3 - 0.5 %) Phosphorus (0 - 0.03 %) Lead (0.41 %) Lead, bis(carbonato(2-))dihydroxyt Lead chromate (1 %) | Ingredients Suppler data Recipient da | Applications Applications none none |

Figure 22: iPCA/IHS - Compliance Applications for a material

For each substance group one or more applications can be selected. As initial value "none" is displayed. By clicking the application text (blue) a dialog is shown (see Figure 23: iPCA/IHS – Assignment application rules), in which the possible applications can be selected.

| 😚 Choose application 🛛 🛛 🔀 | | | | | | | | | |
|----------------------------|--------|---|--|--|--|--|--|--|--|
| Compo | nent | simple node | | | | | | | |
| Materia | ıl | 10L95 | | | | | | | |
| Applica | tion: | | | | | | | | |
| | Active | Application | | | | | | | |
| 1 | | sorption refrigerators in motorcaravans | | | | | | | |
| 2 | | Corrosion preventive coatings related to bolt and n | | | | | | | |
| 3 | | Corrosion preventive coatings | | | | | | | |
| | | | | | | | | | |
| | Sa | ve Cancel | | | | | | | |

Figure 23: iPCA/IHS – Assignment application rules for material

After selecting and/or deselecting the wanted applications, the changes can be stored in the database by clicking the button "Save".

If an application is assigned and the material will be checked again then a possible violation will be overruled by the exemption rule which contains an application which is equal to the material application and if the threshold of the exemption rule is not violated.

To define an application within a material can be necessary if

- a wrong IMDS application is selected for the material,
- no IMDS application is applied to the material,
- there are selected different IMDS applications for the basic substances of the same substance group.

5.4.2 Component

It is possible to define applications on component level to perform checks on that level or to define exemptions for rule violations.

On component level the following applications are available in the tab "Compliance Applications":

- the applications of the rules where the component contains the corresponding substances groups and
- the attribute "Reference" of this rules is set to "Component".



| test für cc | | |
|--|---|-------------------|
| 🗖 😡 🏡 🔊 🔒 🖋 🍸 🖇 | । 👦 🧶 😳 🚅 📕 🕶 🍕 🏓 🔿 😭 | 🖀 🔎 🖻 🦉 🐇 🛞 🚔 🗶 |
| Eest für cc im simple node (1 EA) im simple node (1 0.03 %) im simple node (0.3 - 0.5 %) im simple node (0.3 - 0.5 %) im simple node (0.41 %) im simple node (0 - 0.05 %) im sim simple node (0 - 0.05 %) im sim | Ingredients Supplier data Recipient data Reject reas IMDS IHS History Compliance Applications Compliance Checker Applications Substance group 1 Lead or its compounds Its compounds Its compounds | Applications none |

Figure 24: iPCA/IHS – Compliance Applications for component

For the component level too, multiple applications can be selected for each substance group. As initial value "none" is displayed.

By clicking the application text (blue) a dialog is shown (see Figure 23: iPCA/IHS – Assignment application rules4) in which the possible applications can be selected.

| 6 | Choose application | | | | | | | | | |
|---|--------------------|--------|----------------------|-------------------------|--|--|--|--|--|--|
| ¢ | Iompor | nent | | test für cc | | | | | | |
| £ | Applical | tion: | | | | | | | | |
| | | Active | | | | | | | | |
| | 1 | | compliant pin conne | ctor systems | | | | | | |
| | 2 | | Faraday rotator use | ed for fibre optic comm | | | | | | |
| | 3 | | plating material for | the thermal conductio | | | | | | |
| | 4 | | Fine pitch comnpone | ents finish | | | | | | |
| | | | | | | | | | | |
| ſ | | | | | | | | | | |

Figure 25: iPCA/IHS – Assignment application rules for component

After selecting or deselecting the wanted applications, the changes can be stored in the database by clicking the button "Save".

If an application is assigned and the material will be checked again then a possible violation will be overruled by that exemption rule if the threshold of the exemption rule is not violated and if the rule contains an application which is equal to the selected component application.



6 Permissions and configuration

6.1 Permissions

Following permissions are necessary for the module iPCA/CSI:

| Permission | Group | Description |
|----------------------|----------------------------------|---|
| CC_MANAGEMENT | IMDS_ADMIN → ADMIN_CC | Permission for starting the CSI Management |
| | | Permission for viewing the rules and remarks |
| | | • Permission for managing rule groups (productive release, etc.) |
| CC_DEVELOPMENT | IMDS_ADMIN → ADMIN_CC | Permission for starting the CSI Management |
| | | Necessary to create and edit rules as well as remarks |
| | | Necessary to create and edit own rule groups |
| | | Permission to change the warning phase |
| | | • Necessary to create and edit of own applications |
| | | • Necessary to create and edit of due dates |
| CC_CHECK | IMDS_IHS → COMPLIANCE_CHECKER | Permission for checking of rule groups in iPCA/IHS |
| CC_CHECK_CONFIG | IMDS_IHS → COMPLIANCE_CHECKER | Permission to make rule groups available for other checks |
| CC_INSPECTOR | IMDS_IHS → COMPLIANCE_CHECKER | Permission for checking of rule groups in iPCA/IHS which are not yet released |
| CC_IMPORT | IMDS_IHS → | Optional: Permission for the |
| CC EXPORT | | Import of a rule group |
| | COMPLIANCE_CHECKER | export of a rule group which can be exported |
| ADMIN_IHS_ | IMDS_ADMIN | Permission for creating and editing |
| SUBSTANCEGROUP_TYPES | | of own substance groups and their types |



6.2 CSI Parameters

Available CSI parameters can be configured by the dialog "CSI Parameter". It is shown in the IHS menu "Options \rightarrow Parameter \rightarrow CSI Parameter".



Figure 26 : IHS – Menu CSI Parameter

If the corresponding item is selected a dialog will open in which both the warning phase and the portion value which will be used for the check can be configured.

| 🜍 CC Parameter | |
|---------------------------------|-----------------------|
| Warning phase (Days): | 100 |
| Type of portion to use in check | To value 🗸 🗸 🗸 🗸 |
| | Average From value |
| | To value |
| Save | Close |

Figure 27: IHS - CSI Parameter Dialog

If the warning phase is configured greater then zero: If the "valid from" date of a rule lies ahead within the configured period and this rule is violated, a warning notification is made.

The parameter for the type of portions contains several choices:

- Average
- From value
- To value

This parameter is used if the portion of a basic substance is defined by a threshold range. During a CSI check of such a basic substance the portion type as defined in the parameter is used as comparison value for the threshold of the rule.

6.3 CSI Due dates

Due dates for the Compliance Checker are necessary for the mass check of MDS/Modules. They ensure that only certain due dates are used for checking the data. These due dates might refer to dates on which legal changes apply. Another benefit is that the amount of data (violation of rules) which is generated during the check of a complex MDS/Module can be minimized because the results of a check are stored only once per due date.



Figure 28: iPCA/IHS – Menu Master data – CSI Due dates

The window for creating and editing the CSI due dates can be found in the menu "Extras \rightarrow Master data \rightarrow CSI due dates". After selecting the item the following window is shown:

| e c | Compliance Checker Due dates | |
|------------|--|--|
| ſ | Due date: Image: Description: State: Image: show only active | |
| ſ | Search Reset | |
| | Due date Description | |
| 2 | Due date: Description: State: active | |
| P | New Edit Delete Save Cancel | |

Figure 29: iPCA/IHS – Master data - CSI Due dates

In the window shown in figure 28 due dates can be searched for (Search), can be created (New), edited (Edit) or deleted (Delete). But deleting is only possible if the due date has not been used in any check yet. Editing of due dates comprises the fields "Description" and "State". With state an existing due date can be activated or deactivated by selecting or deselecting the field. If a due date is deactivated it cannot be used any more in the CSI Wizard for checking of MDS/Modules or for showing existing results. Therefore this functionality should be used for example if a wrong due date was created and cannot be deleted because it was already used by a check.

The window is separated into 5 areas:



- The orange area is for editing search criteria for already existing due dates. The following search criteria are available:
 - \circ Due date
 - The date to search for
 - Description The description of the due date to search for
 - o State
 - Search for active or not active due dates
- The green area is for activating the search and for resetting given search criteria. Additionally, search results can be exported with the button "Export".
- The red area lists all results which are found after searching and can be used to select an row.
- The yellow area shows the details of the row selected in the red area and can be used for editing the fields of a due date if the button "Edit" or "New" have been pressed.
- Actions can be performed with the buttons in the blue area.
 - The following actions are available:
 - o New
 - Creating a new due date
 - o Edit
 - Change an existing due date which was selected in the red area
 - o Delete
 - Deleting an existing due date if it was not already used in a check
 - o Save
 - Stores the current changes; is only active for actions "New" and "Edit".
 - o Cancel
 - Cancel the current changes, the changes are not saved; is only active for actions "New" and "Edit".

6.4 Applications

Own applications (CSI applications) can be used if the existing IMDS application do not fulfil the own requirements. A created application can then be used e.g. in an exemption rule and can be assigned to a MDS/Module later.

The window for creating and editing of CSI applications can be open with the menu entry "Extras \rightarrow Master data \rightarrow Applications". This function is only available for those users having the necessary permissions (see chapter 6.1).

| () | Point Compliance Ag | gent | |
|------------|---------------------|--|---|
| File | Edit Data Options | Extras Window Help | |
| 8 | 8 🗋 🐔 🗐 🕯 | Management | |
| - | | CSI Management | |
| | 88 Search | Substitution Management | |
| | Component Sem | Product Unit Management | substances all MDS/modules Sent Received LCM SPM MACSI RE |
| | Name: | DB-Job Manager | Suppl (Org. upite) |
| | Name. | Event-Manager | |
| | Part-/Item No.: | Master data 🔶 🕨 | Companies / legal units / contacts |
| | ID No.: | LookAndFeel | Sites Version 💿 own 🔿 Module only 🗋 accepted |
| | 🛨 Extended | Memory Monitor Strg+Umschalt+D | Classification |
| | 🛨 Customer search | | Substance group types |
| | <u></u> | | Substance groups |
| | | Search Reset | Substances |
| | Data | | Plants |
| | Name | Part-No. IHS-Item-No. Module State IMDS-ID | Projects evance REACH state Creation date RB-NO |
| | | i la | Applications |
| | | | CSI Due Dates Applications |

Figure 30: iPCA/IHS – Menu Master data → Applications



🜍 IHS Applications Text english Text german Type 1 General Alloemein undef 2 None IMDS 3 Alloying element in bearing shells a... 11111 IMDS Copper in friction materials of brak... IMDS 4 5 Concentration within acceptable G... adfadfaf IMDS Concentration within acceptable G... IMDS 6 7 Concentration within acceptable G... IMDS 8 Concentration within acceptable G... IMDS 9 Bonding agent for elastomers in po... 444 IMDS 10 Corrosion preventive coatings relat... 8888 IMDS 11 Optical component in a glass matrix... IMDS 12 Alloying element in steel for machin... IMDS 13 Alloying element in aluminium for m... IMDS 14 Alloying element in copper d1 IMDS English General Deutsch Allgemein Edit Export New Delete

If the item was selected following window is shown:

Figure 31: iPCA/IHS – Master data – Applications

The window is separated into 3 areas:

- The red area list all existing applications with the following columns:
 - o Text English
 - English description of the application (default value)
 - o Text German
 - German description of the application
 - Type (among others)
 IMDS = application provided by IMDS
 - CSI = own application for CSI
 - The yellow area is for editing applications
- The blue area contains the action buttons. The following actions are available:
 - o New
 - Creates a new application with type "CSI"
 - o Edit
 - The application which was selected in the red area can be changed
 - o Delete
 - Deletes an existing application if it is not used yet and not of type "IMDS"
 - o Save

0

- Stores changes, is only active for actions "New" or "Edit"
- o Cancel
 - Cancels the editing of an application, no changes are saved. Is only active for actions "New" or "Edit" Export
 - All listed applications can be exported.

Note: For IMDS applications only the German text can be defined or changed.



7 Example

The following examples are only extracts of the corresponding regulation. With these examples the relation between rules and their checking against an IMDS tree shall be clarified.

7.1 EU-ELV

In Annex II of Directive 2008/689/EC for End-of-Life Vehicles there is for example a tolerance defined for lead up to a maximum concentration of 0.1 weight percentage per homogeneous material. But exemption 1 allows a lead portion up to 0.35% for lead as an alloying element.

For this reason a Common Rule will apply to impurity of lead with $x \le 0.1\%$. The exemption 1 of ELV Annex II is covered by the IMDS application "Alloying element in steel for machining purposes or galvanised steel". This application will be displayed for the material classification "Steel and Iron Materials", i.e. exemption rules have to be defined for all IMDS material classifications 1.1 and 1.2. They comprise:

- I.I Steels / cast steel / sintered steel
- I.I.I unalloyed, low alloyed
- 1.1.2 highly alloyed
- I.2 Cast iron
- I.2.1 Cast iron with lamellar graphite / tempered cast iron
- 1.2.2 Cast iron with nodular graphite / vermicular cast iron
- 1.2.3 Highly alloyed cast iron

Those 7 exemption rules allow a maximum threshold for lead up to 0.35%.

7.1.1 Defining rules

For the "Common rule" the following values apply:

Type: select "Common rule".

Substance group types: select "IMDS". Further on select in the list box 'Substance group' the IMDS substance group "Lead or its compounds".

Because the rule is a "Common rule" the field "Classification" is disabled.

Reference: "Material / Mixture" has to be selected because the check should be performed for a homogeneous material.

Application type and Application are disabled because of the "Common rule".

Action: this field defines what will be displayed if the rule is violated, for this case select "Error".

Remark: a text can be selected (text can be defined under the tab "Remarks" and can be reused as needed). If a violation occurs this remark will be displayed, for our example we use the footnote I of the Directive 2008/689/EC.

Threshold type: in this field it is specified how the threshold has to be checked, i.e. how to interpret the rule. For the given example the Directive/rule defines that it is no error if the value x is $\leq 0.1\%$ for lead. Therefore "x $\leq A$ " has to be selected.

The threshold value has to be defined in "Threshold A".

Limit unit: for material rules only "%" is available, it is preselected.



At the end the date interval has to be defined by editing "Valid from" and "Valid to". This is the interval for which the rule is valid and in which time interval the rule can be checked. For this example the date of the footnote I of the Directive is set as valid from "01.07.2003". "Valid to" can be left empty so the maximum valid date "31.12.9999" (always valid) is set after saving.



| 🜍 CSI Management | | | | | | | |
|----------------------|------------------------|------------|---------------------------|------------------------|--------------------------|-------------------|---------------------------------------|
| File Data Help | | | | | | | |
| Substance Groups Rem | arks Rules Rule Groups | | | | | | |
| | | | | | | | |
| Substance group t | | ~ | Substance group: | | | | ~ |
| Classification: | | ~ | Reference: | | | | ~ |
| Application type: | | ~ | Application: | | | | ~ |
| Action: | All | ~ | Remark: | | | | M |
| Threshold type: | All | * | Threshold A: | | Threshold B: | | Limit unit: All 🗸 |
| Valid from: | | | Valid to: | | | | |
| Туре: | | * | Single substance testing: | | | | |
| | | | | | | | |
| 0 | Search | Reset | 7 | Info: | | | I I I I I I I I I I I I I I I I I I I |
| | | L | | | | | |
| Used in | | Туре | Substance group Class | sification Application | Reference | Version Threshold | Valid from Valid to |
| 3 | | | | | | I | <u> </u> |
| | | | | | | | <u>▼</u> |
| | | | | | | | |
| | C | | Carls a bata a bata a f | | | | |
| Type: | Common rule | ¥ | Single substance testing: | | | | |
| Substance group t | IMDS | ~ | Substance group: | Lead or its compounds | | | <u> </u> |
| Classification: | 99 | ~ | Reference: | Material / Mixture | | | <u> </u> |
| Application type: | undef. | ~ | Application: | General | | | |
| Action: | Error | ~ | Remark: | Pb < =0,1 % Concentral | tion within legal limits | | |
| Threshold type: | ×<=A | <u>~</u> | Threshold A: | | 0.1 Threshold B: | | Limit unit: % |
| Valid from: | 2003/07/01 | | Valid to: | 9999/12/31 | | | |
| | | | | | | | |
| | New | New versio | n Copy | Delete | Save | Cancel | |
| | | | | | | |] |
| User: MM (202) | | | | | | | |

Figure 32: iPCA/CSI Management – Common rule for lead

After editing the input data the rule has to be stored by clicking "Save". Subsequently the 7 exemption rules are created in the same manner.

However for these exemption rules the type "Specific rule" has to be selected. Therefore also the fields "Classification", "Application type" and "Application" have to be selected. The "Classification" is one of the classifications mentioned above, the "Application type" has to be "IMDS" and "Application" has to be "Alloying element in steel for machining purposes or galvanised steel" according to Annex II. The threshold is the same as for the "Common rule", but "Threshold A" has to be changed to the maximum limit of 0.35%.

7.1.2 Defining the rule group

If all rules (one rule and seven exemption rules) have been created, the set of rules (rule group) can be defined. Therefore the tab "Rule groups" is selected and a new rule group is created by clicking the button "New".

With the button 3 the defined "Common rule" can be found and can be added to the rule group. In figure 33 the rule group is displayed containing this "Common rule".



| 😭 CS | il Management | | | | | | | | | | | |
|------|---|-----------------------------------|---------------|-------------------|-----------|-------------|--------------|---------|-----------|---------------|------------|--|
| File | Data Help | | | | | | | | | | | |
| Sub | stance Groups Rema | ks Rules Rule (| Groups | | | | | | | | | |
| | Name: User: Assigned rule: Show deleted? | Description: Date: Assigned norm: | | | | | | | | | | |
| | | Se | earch F | eset | | | | | | | | |
| Θ | Name | Version | Descriptio | n R | eleased | User | | Date | | Source system | | |
| | | | | | | | | | | | | |
| | Name: | EU-ELV | | | | Description | - | | | | | |
| | Released: [| | | | | | | | | | | |
| | Rules Norms | | | | | | | | | | | |
| | Assigned rules: | | State Type | Substance gro | up Clas. | Application | Reference | Version | Threshold | Valid from | Valid to | |
| | | 1 EU-ELV | | | | | | | | | | |
| | | 2 Rule | 👌 Common rule | e Lead or its com | pounds 99 | General | Material / N | 1i 1 | ×<=1.0 % | 2003/12/01 | 9999/12/31 | |
| | | <. | | 1111 | | | |) | | | > | |
| Ð | | Ne | w Ec | lit | Сору | Delete | | Save | Cancel | | | |
| User | r: MM (202) | | | | | | | | | | | |

Figure 33: iPCA/CSI Management – example EU-ELV rule group (I)

After saving, the rule group can be used for checking a MDS in IHS. Because the rule group is not yet released the user must possess the permission "CC_INSPECTOR" allowing him to perform the check in IHS.

7.1.3 Applying the rule group

When the following IMDS MDS is checked against that rule group then a violation of the "Common Rule" for the impurity of lead > 0.1% occurs (see figure 33). The MDS is deliberately held simple to accentuate the functionality of the check.

The Test MDS contains a component node to which the published material MDS (46404351 / 1) has been added. The material contains the basic substance "Lead" which belongs to the substance group "Lead or its compounds" and covers a percentage from 0.15% to 0.35%. The material's IMDS application "Alloying element in steel for machining purposes or galvanised steel" and the material classification "1.1.1 unalloyed, low alloyed" are selected.



| 🗖 test MDS for CC |
|---|
| ■ 😔 ‰ ▲ 🍽 🗄 🖋 🖉 ۿ 🚳 🐵 📲 = 🧐 = 🍅 🖀 🖀 🖉 🎽 🕷 🛞 😹 🗟 🔍 |
| ■ test MDS for CC □ 10L95 (10 g) □ Carbon (0.9 - 1.03 %) □ 1 Ingredients Supplier data Recipient data Impredients Supplier Phosphorus (0 - 0.03 %) Lead (0.41 %) Name test MDS for CC Part-/Item-No. test MDS for CC Part-/Item-No. test MDS for CC IHS- Head chromate (1 %) Measured Weight 10 g ♥ Calculated Weight 10 g ♥ |
| Quality check Recommendation check ToDos Inbox check Compliance Checker |
| Checked Module/MDS: test MDS for CC - Due date: 2008/11/24 Show only errors 🗌 🔺 🖲 🗶 |
| Action Rule group Type Name Substance group Classification Application Value Limit Valid from Valid to |
| 1 Error eu - elv Rule 10L95 Lead or its compounds 99 General 1.51 % x<=0.1 % 2003/07/01 9999/12, |
| |
| Correct Copy Export Close |
| |

Figure 34: iPCA/IHS – Test MDS checked against EU-ELV

The Annex II of Directive 2008/689/EC allows a maximum threshold of 0.35% for steel and for the application "Alloying element in steel for machining purposes or galvanised steel". Therefore the exemption rules for the corresponding material classifications have to be added to the rule group in order to model EU-ELV completely.

This can be done with the button is when the rule group is in edit mode and the "Common rule" is selected. The 7 rules for the exemptions have to be searched first and subsequently applied to the rule group. It is possible to do this mapping in one step (by multiple selection) or with several steps.



| 🜍 c | ompliance Checker A | Aanagement . | | | | | | | |
|------|---|----------------------|-------------|-----------------------------|--|--------------------|------------------------------------|-----------------|--|
| File | Data Help | | | | | | | | |
| Sub | stance groups 📔 Remar | ks Rules Rule groups | i | | | | | | |
| | Name: User: Assigned rule: Show deleted? | | | | Description: Date: Date: Assigned norm: | | | | |
| | | Search | Reset | | Info: 6 rows | s found! | | | |
| | Name 5 eu - elv | Version 1 | Description | F | leleased | User | Date | Source system | |
| o | < Name: | an all | | | Description | | | | |
| | Released: Rules Norms | | | | Description: | | | | |
| | Assigned rules: | | State Type | Substance group | Classification | Applicatio | 'n | Reference Ve | |
| | | 1 eu - elv | | | | | | | |
| | | 2 🛋 🛞 Rule | 📄 Comr | nonLead or its compo | . 99 | General | | Material 2 | |
| | | 3 Exemption | Speci | fic rule Lead or its compo | 1.1 Steels / cast stee | al / si Alloying e | lement in steel for machining purp | ose Material 2 | |
| | | 4 Exemption | Speci | fic rule Lead or its compo | 1.1.1 unalloyed, low 1.1.2 bidblu ellayed | alloyAlloying e | lement in steel for machining purp | Jose Material 2 | |
| | | 6 Exemption | Speci | fic rule Lead or its compo. | 1.2 Cast iron | Alloving e | lement in steel for machining purp | ose Material 2 | |
| | | 7 Sexemption | Specif | fic rule Lead or it | s compounds | lamelAlloving e | lement in steel for machining purp | pose Material 2 | |
| | | 8 Sexemption | Specif | fic rule Lead or its compo | . 1.2.2 Cast iron with | nod Alloying e | lement in steel for machining purp | oose Material 2 | |
| | | | Š | | Contract 1 | - ×8 - | | <u> </u> | |
| | | | | | | | | | |
| | | | New | Edit Copy | Delete | Save | Cancel | | |
| Use | r: Achim Schrempp ("clar | a" system) | | | | | | | |

Subsequently the rule group should appear as in figure 34 displayed.

Figure 35: iPCA/CSI Management – example EU-ELV rule group (2)

If Test MDB is checked again against the rule group no more error can occur because the exemption overrules the original error.

7.2 EU-RoHS

The Directive 2002/95/EG tolerates among others a maximum concentration threshold or 0.1% for mercury for each homogeneous material in electric and electronic devices. Some exemptions also exist in this Directive. For example the exemption 2 is now described.

The exemption explains that mercury may be used in straight fluorescent lamps with following maximum weight as general purposes:

- Halophosphate 10 mg
- Triphosphate with normal lifetime 5 mg
- Triphosphate with long lifetime
 8 mg

For this directive we also need a Common rule for mercury as well as 3 exemption rules. The exemption rules can only be checked if the part contains either Halophospahte or Triphosphate. Further on new CSI Applications are needed because those applications are not covered by IMDS:

- Straight fluorescent lamps
- Straight fluorescent lamps normal lifetime
- Straight fluorescent lamps long lifetime



7.2.1 Defining substance groups

Because in IMDS no substance groups are available for Halophosphates or Triphosphates these have to be created in IHS. At the moment one Halophosphate substance with CAS-No 21324-40-3 and two Triphosphate substances with CAS-No 13845-36-8 and 7758-29-4 (in 2008/11) exist in IMDS.

As first step the substance group "Halophosphat" must be created and the matching basic substance has to be added to that group (see figure 36).

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Figure 36: iPCA/CSI Management - rule group Halophosphat



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| | Substances. | 1 Pentapotassium-triphosp | 13845-36-8 | | 237-574-9 | | | IMDS | * | | | |
| | | 2 Pentasodium-triphosphate | 7758-29-4 | | 231-838-7 | | | IMDS | | | | |
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Afterwards the second substance group "Triphosphat" with 2 basic substances has to be created (see figure 37).

Figure 37: iPCA/CSI Management - rule group Triphosphat

7.2.2 Defining rules

In the next step, rules can be created – at first the "Common rule" for the impurity of mercury. The Following data has to be defined (see figure 38):

Type: Common rule Substance group type: IMDS Substance group: Mercury or is compounds Classification: 99 Reference: Material / Mixture Action: Error Remark: a describing text which shall be displayed during a violation Threshold type: x<=A Threshold A: 0.1 Unit: % Valid from: 2003/07/01



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| | Classification: | 99 | | v | Reference | : | Material / Mixtur | е | | | ~ |
| | Application type: | undef. | | v | Application | n: | General | | | | |
| | Action: | Error | | v | Remark: | | Hg <= 0.1 % C | oncentration wit | hin acceptable | limits | 86 |
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Subsequently the rule is saved and can be applied to the rule group.

Figure 38: iPCA/CSI Management - Common rule for mercury

The rule group could already be used to check a MDS. In this case, however, only errors would occur if the materials contain mercury with a percentage of 0.1% and more. But as described before some exemptions exist which allow a greater amount of mercury if specific conditions are given.

In the next step rules for the exemptions are created which change the maximum value related to the part. Therefore a rule for the application "Straight fluorescent lamps" has to be created first:

Type: Application rule Substance group type: IMDS Substance group: Mercury or its compounds Reference: Component / Article Application type: CSI Application: Straight fluorescent lamps (has to be created beforehand) Action: Error Threshold type: x<=A with Threshold A = 10 mg



Valid from: 2002/01/27

Then the 2 other exemption rules have to be created with the same data for following applications:

- Straight fluorescent lamps normal lifetime with Threshold A = 5 mg
- Straight fluorescent lamps long lifetime with Threshold A = 8 mg.

In the next step further rules have to be defined which describe the conditions for checking the exemptions as defined before. Such a condition which can be applied within a rule group below a rule provides a pre-checking if an exemption may be used. In the given case either Halophosphate or Triphosphate must exist in the component.

Type: Application rule

Substance group type: IHS (depending on the type of the substance group)

Substance group: Halophosphat

Classification: 99

Reference: Component / Article

Application type: CSI

Application: Straight fluorescent lamps

Action: Error

Remark: arbitrary text

Threshold type: x > A with Threshold A = 0 %

Valid from: 2003/01/ 27

Then the condition for the Triphosphates:

Type: Application rule

Substance group type: IHS (depending on the type of the substance group)

Substance group: Triphosphat

Reference: Component / Article

Application type: CSI

Application: Straight fluorescent lamps normal lifetime

Action: Error

Remark: arbitrary text

Threshold type: x > A with Threshold A = 0 %

Valid from: 2003/01/ 27

And then a third condition for the application "Straight fluorescent lamps long lifetime" has to be creaded.

For a rule which is used only as a condition within a rule group the selected values for action and remark are unimportant because they are not shown in the result after a check.

The condition is valid if the rule is not violated.



7.2.3 Defining the rule group

In the next step the defined rules must be combined in a rule group according to the demands of the Directive. At first a new rule group must be created, let us call it "EU-RoHS", and the common rule for mercury has to be added (see figure 39).

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Figure 39: iPCA/CSI Management – example rule group EU-RoHS (1)

The first part of the Exemption II for mercury says that mercury in straight fluorescent lamps may be used for general purposes up to a maximum weight of 10 mg if the lamp contains Halophosphate as substance. I.e. at first a rule which describes the condition that Halophosphate must be contained in a "straight fluorescent lamp" will be added to the Common rule of the rule group. After that it is possible to add to the condition the real exemption which allows up to 10 mg as maximum weight for a "straight fluorescent lamp".

Further on the conditions and exemptions for the Triphosphate substances have to be added to the rule group to complete the description of the Exemption II of the RoHS Directive.



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When finished the rule group "EU-RoHS" should appear as shown in figure 40.

Figure 40: iPCA/CSI Management – example rule group EU-RoHS (2)

7.2.4 Applying the rule group

The still incomplete rule group "EU-RoHS" can now be used for checking an example MDS. The MDS acts as an exemplary structure of a fluorescent lamp which consists of 4 sub components. The main focus hereby is the part "Glaskolben mit Gas gefüllt". That part is composed of 2 materials "Glas Halo-Beschichtung" and "Argongas mit Hg". In the first material the Halophaspahte substance "Lithiumhexafluorophosphat(1-)" is used with 1% related to the material. The second material contains "Mercury" with 2% related to the material.



If the MDS is checked against this rule group an error occurs as displayed in figure 41:

| straight fluorescent lamp | | | |
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| straight fluorescent lamp Bulb filled with gas (1 EA) Glas Halo-coated (200 g) Silica, amorphous (93 %) Lithium hexafluorophosphat Carbonic acid, lead(2+) s Argongas with Hg (2 g) Argon (98 %) Mercury (2 %) drain heating coil (2 EA) Wolfram Heizwendel-Elktroden Tungsten disulphide (2 %) FKM seals (2 EA) | Ingredients Supplier data Recipient of IMDS IHS History Compliance A Compliance Checker Applications Substance group 1 Mercury or its compounds 2 Halophosphat | data Reject reason More sub pplications Jama/Japia Applications Applications none none | |
| Quality check Recommendation check | ToDos Inbox check Compliance Ch | necker | |
| Checked Module/MDS: straight fluorescent | amp - Due date: 2008/11/25 | Show | only errors 🔲 🔍 🗶 |
| Action Rule group Type N | ame Substance group Cla | assification Application Value | Limit Valid from |
| 1 Error EU-RoHS Rule A | gongas with Hg Mercury or its compounds 99 | General 2.0 % | x<=0.1 % 2003/07/01 |
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Figure 41: iPCA/IHS – Test MDS checked against EU-RoHS (1)

The impurity of mercury in the homogeneous material "Argongas mit Hg" is shown as error. But why has the exemption no effect even though a Halophosphate is contained in the MDS. The answer is simple: initially the system does not know that the given MDS has to be treated as a "straight fluorescent lamp"; this information has additionally to be stored to the MDS.

Therefore the CSI Applications must be used. These have to be specified on component level for each substance group. If the application "straight fluorescent lamp" is selected for the substance groups "Mercury or its compounds" and "Halophosphate" and if the MDS is checked again then 2 errors occur (see figure 42):



| 🖬 straight fluorescent lamp | | | | | | | | | |
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| straight fluorescent lamp Bulb filled with gas (1 EA) Glas Halo-coated (200 g) Silica, amorphous (93 %) Lithium hexafluorophosphate(Carbonic acid, lead(2+) salt Argongas with Hg (2 g) Argon (98 %) Mercury (2 %) drain heating coil (2 EA) FKM seals (2 EA) Starter (1 EA) | Ingredients Supplier data Recipient data Reject reason More substances IMDS IHS History Compliance Applications Jama/Japla Compliance Checker Applications Implications Implications Implications 1 Substance group Applications Implications Implications 2 Halophosphat Straight fluorescent lamps with halophosphate 2 Halophosphat Straight fluorescent lamps with halophosphate | | | | | | | | |
| Quality check Recommendation check | ToDos Inbox check Compliance Checker | | | | | | | | |
| Checked Module/MDS: straight fluorescent | lamp - Due date: 2008/11/25 Show only errors 🗌 🔺 🗑 🗶 | | | | | | | | |
| Action Rule group Type | Name Substance group Classification Application Value Limit | | | | | | | | |
| EU-RoHS Exemption s | straight fluorescent Mercury or its compounds 99 Straight fluorescent lamp 40.0 mg $	imes$ <=1 | | | | | | | | |
| Error EU-RoHS Rule A | Argongas with Hg Mercury or its compounds 99 General 2.0 % ×<=0 | | | | | | | | |
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Figure 42: iPCA/IHS – Test MDS checked against EU-RoHS (2)

But why do 2 errors occur? The answer is: Firstly the violation of the Common rule appears beacause more than 0.1% mercury is used in the homogeneous material "Argongas mit Hg", secondly the exemption was violated that for "straight fluorescent lamp" only up to 10 mg mercury is allowed if Halophosphate is contained within the part.

How is the check made against the rule group?

During the check of the material node "Argongas mit Hg" the system detects that the Common rule is violated.

Afterwards it is checked if this violation may be overruled by an existing exemption.

However, the exemptions may be connected with conditions therefore the first check is if the conditions are fulfilled. In this example the conditions are checked bottom-up to the "Part" (Reference = "Part / Article") beginning with the material. Because the conditions are added only for specific applications each part node found in the step upward will be analysed if the corresponding application refers to it. Only if the application is found which is stored with the rule (condition) the part node will be checked against the requirements of the rule. This means for our example that the check of the condition if Halophosphate is contained (x > 0%) is performed for the topmost node "Leuchtstofflampe stabförmig" where the application was set.

Because the condition is fulfilled the check is performed bottom-up (again viewed from the material "Argongas mit Hg") if the exemption is fulfilled that in a part with the application "straight fluorescent lamp" mercury may be used up to 10 mg. This is not the case (within the MDS the total amount of mercury is 40 mg) therefore the violation of the exemption occurs.



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9 Change History

| Version | Date | Description |
|---------|------------|--|
| 6.0 | 02/24/2008 | First creation |
| 6.01 | 2008/05/14 | Chapter with CSI Wizard |
| 6.07 | 10/25/2008 | Change of editing the rule groups (version without ROHS |
| | | extensions) |
| | | Change to iPCA |
| 7.0 | 2009/09/01 | Release change to 7.0, |
| | | Adaption to German extended version, |
| | | Change naming to CSI |
| 7.05 | 2009/10/15 | Changes for Rel. 7.5 |
| 7.07 | 2009/12/02 | Following chapters were changed: 4.6, 5.3 |
| | | Following figures were renewed: 4,6,13,16,17,18,19,20,21,28,30 |
| 7.10 | 2010/02/18 | Extension in chapter 4.6.2 about removing a productive release |
| | | Extension in chapter 4.6.3 about new check configuration |
| | | "Compliance Check" |
| | | Renewed Figure 8 |
| 7.10 | 2010/04/13 | Change chapter 6.1: |
| | | - Change description of permission "CC_MANAGEMENT" |
| | | Add new permission "CC_DEVELOPMENT" |
| 7.21 | 2010/10/18 | Changes in chapter 5.3 |
| | | - Switched step I and 2 |
| | | - Improvement of rule group and due date selection |
| 8.08 | 2011/08/17 | Added hints about check on each level (chapter 4.6) |
| | | Added description about new options in step I (e.g. Job name and |
| | | cyclical checks) to chapter 5.3 |