

Precious Metals and Rhenium Consortium Rhenium Work Group Meeting

1st July 2014, 10:30-11:30 CET

[1]

1. Welcome and introduction

Angela Alderman

[2]

Welcome and introduction

- Confidentiality and Competition Law
- Approval of the agenda

[3]

2. SID questions from ECHA

Katrien Arijs & Becky Marks

[4]

Background of ECHA's request (K. Arijs)

- Goal **ECHA SID campaign**: help industry to pro-actively improve quality of information in registration dossiers
- IT-based screening of frequent shortcomings
- Results of initial screening communicated to registrants through **informal letters**, together with advice on how to fix potential inconsistencies (1.350 letters sent on 8 Apr)
- ECHA expects companies who received such a letter to spontaneously update their registrations within 3 months, addressing the highlighted concerns
- Opportunity for companies to improve their dossiers before ECHA puts in place legally binding measures such as compliance checks

(5)

Background of ECHA's request (K. Arijs)

- SID letter received for **perrhenic acid**
- Identified shortcomings:
 - 1) **Missing concentration ranges**: typical concentration + concentration ranges (min and max) have to be provided

The screenshot shows the 'Constituents' section of a registration dossier. It displays a table with columns for 'Reference substance', 'EC number', 'EC name', 'CAS number', 'CAS name', and 'IUPAC name'. The first row shows 'water / water / water / 7732-18-5'. Below the table, there are fields for 'Typical concentration' and 'Concentration range'. The 'Typical concentration' field is set to 'ca. 35' and the unit is '% (w/w)'. The 'Concentration range' field is set to '> 30' and '<= 40' with the unit '% (w/w)'. A red box highlights these fields, indicating that they are missing or need to be updated.

Concentration ranges missing in all dossiers of Re substances -> spontaneous update of all dossiers

(6)

Background of ECHA's request (K. Arijs)

2) **Additives without stabilising function**: technical function of additive should be compatible with stabiliser

- Additives under REACH: substances that have been intentionally added to chemically **stabilise** the substance, and are therefore considered as intrinsic part of the substance. Such additives should be taken into account when calculating the mass balance.

The screenshot shows the 'Additives' database interface. The title bar reads '1.9 % (w/w) atropine / 8-methyl-8-azabicyclo[3.2.1]oct-3-yl tropate / 51-55-8'. Below the title bar, there is a search bar and a 'Reference substance' section. The 'Reference substance' section contains the following fields:

Field	Value
EC number	200-104-8
EC name	atropine
CAS number	51-55-8
CAS name	
IUPAC name	8-methyl-8-azabicyclo[3.2.1]oct-3-yl tropate

Below the 'Reference substance' section, there is a 'Function' field with a dropdown menu. The dropdown menu is open, and the word 'stabiliser' is selected and highlighted with a red box. Below the 'Function' field, there is a 'Typical concentration' field with a dropdown menu set to '1.9' and a unit dropdown set to '% (w/w)'. Below the 'Typical concentration' field, there is a 'Concentration range' field with a dropdown menu set to '>' and a value of '1', and another dropdown menu set to '<' and a value of '2.2', with a unit dropdown set to '% (w/w)'. Below the 'Concentration range' field, there is a 'Remarks' field. At the bottom of the form, there is a checkbox labeled 'this additive is considered relevant for the classification and labelling of the substance'.

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Update of the ID cards/dossiers (K. Arijs & B. Marks)

1) **Missing concentration ranges**:

- ID cards all Re substances updated to include concentration ranges
- **APR**, **potassium perrhenate** and **sodium rhenate**: dossiers updated accordingly by WCA and sent to LR for submission, together with guidance
- **Perrhenic acid**: dossier updated to include concentration ranges, stabilising function additive to be further discussed (see next slides)
- **Rhenium** dossier: concentration ranges updated in dossier but Article service life to be discussed/added (see next AP)

(8)

Update of the ID cards/dossiers (K. Arijs & B. Marks)

2) Stabilising function of additive:

- Statement provided by LR on stabilising function of water in **perrhenic acid**:

"An aqueous solution of Perrhenic acid can be concentrated by evaporation up to a maximum of $\geq 80.0 \leq 82.0$ % (w/w) of Perrhenic acid. Evaporation to a higher acid content leads to decomposition of Perrhenic acid in rhenium oxides and rhenium. For this reason the water cannot completely be removed without affecting the chemical stability of the substance. Thus the water has a dual role and acts as solvent and stabilizer. The quantity of water necessary to preserve the chemical stability of Perrhenic acid amounts to $\geq 18.0 \leq 20.0$ % (w/w). Thus, this quantity of water has to be reported as an additive with the function "stabilizer" in the Registration dossier."

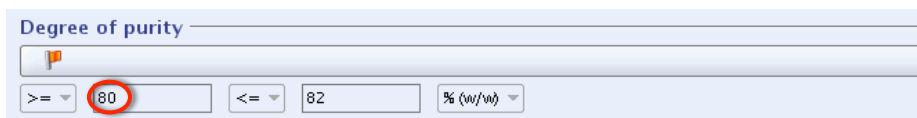
- WG agreed
- Dossier updated accordingly

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Update of the ID cards/dossiers (K. Arijs & B. Marks)

- **Quality warning** after running TCC:

Inconsistency between degree of purity and concentration ranges of impurities -> min value of degree of purity + max values of impurity concentration ranges must not be < 100%



Constituents:	Perrhenic acid/hydroxo(trioxo)rhenium/13768-11-1
Typical conc.:	≥ 80 % (w/w)
Conc. Range:	$\geq 80 \leq 82$ % (w/w)
Impurities:	Several minor impurities/Generic entry to ...
Typical conc.:	≥ 0.5 % (w/w)
Conc. Range:	$\geq 0 \leq 0.5$ % (w/w)
Additives:	Water
Function:	Stabilizer
Typical conc.:	≥ 19.5 % (w/w)
Conc. Range:	$\geq 18 \leq 20$ % (w/w)

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Update of the ID cards/dossiers (K. Arijs & B. Marks)

- Additives under REACH: 'substances that have been **intentionally added** to chemically stabilise the substance'
 - > water **cannot be removed** without affecting the chemical stability of the substance
 - > report as impurity; see also screenshot ECHA webinar on SID

Impurities

8 % (w/w) water / water / 7732-18-5

Reference substance: water / water / 7732-18-5

EC number	EC name
231-791-2	water
CAS number	CAS name
7732-18-5	
IUPAC name	
	water

Typical concentration: 8 % (w/w)

Concentration range: 7 % (w/w) to 9 % (w/w)

Remarks: The solvent cannot be further removed without affecting the stability of the substance.

☐ this impurity is considered relevant for the classification and labelling of the substance

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Update of the ID cards/dossiers (K. Arijs & B. Marks)

Constituents: Perrhenic acid/hydroxo(trioxo)rhenium/13768-11-1
 Typical conc.: ca. 80 % (w/w)
 Conc. Range: >= 80 <= 82 % (w/w)

Impurities: Several minor impurities/Generic entry to ...
 Typical conc.: ca. 0.5 % (w/w)
 Conc. Range: >= 0 <= 0.5 % (w/w)
 Remarks: Several minor impurities such as B, Hf, Nb, Ta, V, Co, Cr and Mg may be present.

Water

Typical conc.: >= 19.5 % (w/w)
 Conc. Range: >= 18 <= 20 % (w/w)

Remarks: An aqueous solution of Perrhenic acid can be concentrated by evaporation up to a maximum of >= 80.0 <= 82.0 % (w/w) of Perrhenic acid. Evaporation to a higher acid content leads to decomposition of Perrhenic acid in rhenium oxides and rhenium. Thus the solvent cannot be further removed without affecting the chemical stability of the substance.

Or simply:

The solvent cannot be further removed without affecting the chemical stability of the substance.

- Agreement WG?
- Update ID card/dossier accordingly
- Comments/questions from members?



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3. Article service life of Rhenium

Becky Marks

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Article service life of rhenium

- Some of the uses have ERC 5 selected, which leads to the following quality warning when running the latest version of the validation assistant:

Section 3.5	Life Cycle description	Warning in Quality rule QLT039	qualitywarning
Section 3.5	Life Cycle description, Uses at industrial sites (1)	You have described the indicated use in section 3.5 with Environmental Release Category (ERC) codes that normally suggest that the substance ends up in articles: ERC 3 ERC 5 ERC 6c, 6d ERC 8c, 8f In this case, you should describe the corresponding subsequent service life in the table 'Article service life', identified by an appropriate 'Service life name'.	qualitywarning

- Are current uses still correct?
- Does 'article service life' need to be added?

Re WG meeting

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Rhenium uses (from Section 3.5)

Identifiers	ERCs	PROCs
M-1: Manufacture	ERC 1: Manufacture of substances	PROC 3: Use in closed batch process (synthesis or formulation) PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature PROC 26: Handling of solid inorganic substances at ambient temperature PROC 27a: Production of metal powders (hot processes) PROC 27b: Production of metal powders (wet processes)
M-2: Formation of fabricated metal products	ERC 1: Manufacture of substances	PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC 14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting PROC 24: High (mechanical) energy work-up of substances bound in materials and/or articles PROC 25: Other hot work operations with metals

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Rhenium uses (from Section 3.5)

Identifiers	ERCs	PROCs
IW-1: Manufacture of alloys	ERC 5: Industrial use resulting in inclusion into or onto a matrix	PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature PROC 24: High (mechanical) energy work-up of substances bound in materials and/or articles Technical function of the substance during formulation: modification of alloy properties to increase creep resistance and resistance to temperature
IW-2: Manufacture of computer, electronic and optical products, electronic equipment	ERC 5: Industrial use resulting in inclusion into or onto a matrix	PROC 3: Use in closed batch process (synthesis or formulation) PROC 4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC 27a: Production of metal powders (hot processes) Technical function of the substance during formulation: substances used to improve properties for high temperature and oxidation resistant application

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Article service life of rhenium

- Input Lipmann: *Re is used (a.o.) in catalysts (used in petrochemical industry) and Ni based Re containing alloys.*
 - *Catalysts are always recycled and materials are recovered (due to high value of elements in these catalysts) – this is done by specialist companies.*
 - *Ni based Re containing alloys – this is more complicated situation – as jet engines, after end of their useful life, are going to service centres which remove various parts and sell them for recycling. No Ni based Re containing material ends up in contact with general public, all is recycled by specialist companies. It will be hard to obtain exact details as most of recycling companies will not share their technology and the way that they process Ni based Re containing material. I can only say that from Ni based Re containing material we recycle APR which is then upgraded & purified further.*

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Article service life

- Only Service life name is required to pass the TCC in IUCLID
- Other fields can also be completed:

The screenshot shows a software window titled "Article service life" with a subtitle "Add another article service life". The window contains the following fields and controls:

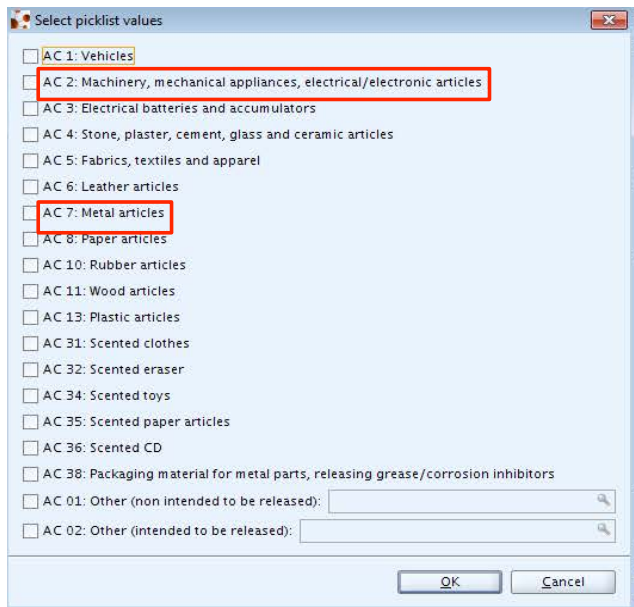
- Local UUID: L-0ee4a0da-e884-44cc-a1bd-48732b11c75a
- Service life number: [text input]
- Service life name: [text input]
- Tonnage of substance: [text input]
- Article used by: [dropdown menu]
- Article category related to subsequent service life: [dropdown menu]
- Further description of article: [text area]
- Exposure related description of article: [dropdown menu]
- Environmental Release Category: [dropdown menu]
- Process Category for articles used by workers: [dropdown menu]
- Typical concentration of the substance in article (%): [text input]
- Technical function of the substance: [dropdown menu]
- Use coverage in CSR: [dropdown menu]
- Remarks: [text area]
- Buttons: OK, Cancel

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Article service life

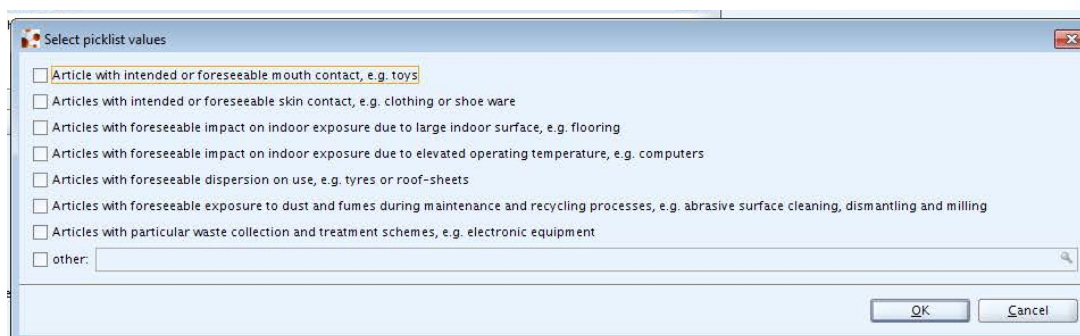
- Article category related to subsequent service life



A screenshot of a software dialog box titled "Select picklist values". It contains a list of article categories (AC 1 to AC 38) with checkboxes. The categories are: AC 1: Vehicles, AC 2: Machinery, mechanical appliances, electrical/electronic articles, AC 3: Electrical batteries and accumulators, AC 4: Stone, plaster, cement, glass and ceramic articles, AC 5: Fabrics, textiles and apparel, AC 6: Leather articles, AC 7: Metal articles, AC 8: Paper articles, AC 10: Rubber articles, AC 11: Wood articles, AC 13: Plastic articles, AC 31: Scented clothes, AC 32: Scented eraser, AC 34: Scented toys, AC 35: Scented paper articles, AC 36: Scented CD, AC 38: Packaging material for metal parts, releasing grease/corrosion inhibitors, AC 01: Other (non intended to be released), and AC 02: Other (intended to be released). The categories AC 1, AC 2, and AC 7 are highlighted with red boxes. There are search icons next to the "Other" categories and "OK" and "Cancel" buttons at the bottom.

Article service life

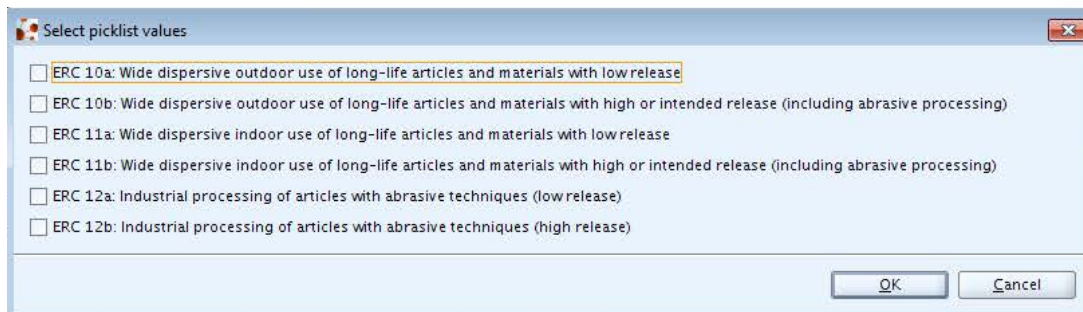
- Exposure related description of article



A screenshot of a software dialog box titled "Select picklist values". It contains a list of exposure related descriptions with checkboxes: Article with intended or foreseeable mouth contact, e.g. toys; Articles with intended or foreseeable skin contact, e.g. clothing or shoe ware; Articles with foreseeable impact on indoor exposure due to large indoor surface, e.g. flooring; Articles with foreseeable impact on indoor exposure due to elevated operating temperature, e.g. computers; Articles with foreseeable dispersion on use, e.g. tyres or roof-sheets; Articles with foreseeable exposure to dust and fumes during maintenance and recycling processes, e.g. abrasive surface cleaning, dismantling and milling; Articles with particular waste collection and treatment schemes, e.g. electronic equipment; and other: (with a text input field). There are search icons next to the "other:" field and "OK" and "Cancel" buttons at the bottom.

Article service life

- Environmental release category

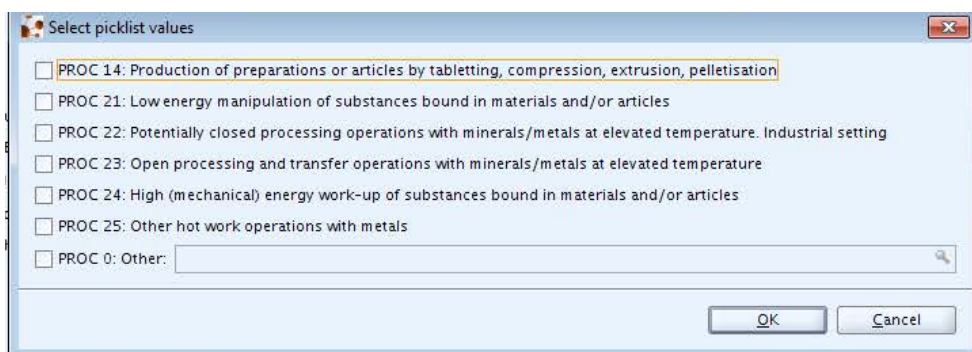


A screenshot of a software dialog box titled "Select picklist values". It contains a list of six Environmental Release Categories (ERCs) with checkboxes. The first option, "ERC 10a: Wide dispersive outdoor use of long-life articles and materials with low release", is highlighted with a yellow border. The other options are: "ERC 10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)", "ERC 11a: Wide dispersive indoor use of long-life articles and materials with low release", "ERC 11b: Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)", "ERC 12a: Industrial processing of articles with abrasive techniques (low release)", and "ERC 12b: Industrial processing of articles with abrasive techniques (high release)". At the bottom right are "OK" and "Cancel" buttons.

ERC	Description
☒	ERC 10a: Wide dispersive outdoor use of long-life articles and materials with low release
☐	ERC 10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
☐	ERC 11a: Wide dispersive indoor use of long-life articles and materials with low release
☐	ERC 11b: Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)
☐	ERC 12a: Industrial processing of articles with abrasive techniques (low release)
☐	ERC 12b: Industrial processing of articles with abrasive techniques (high release)

Article service life

- Process category for articles used by workers



A screenshot of a software dialog box titled "Select picklist values". It contains a list of seven Process Categories (PROC) with checkboxes. The first option, "PROC 14: Production of preparations or articles by tableting, compression, extrusion, pelletisation", is highlighted with a yellow border. The other options are: "PROC 21: Low energy manipulation of substances bound in materials and/or articles", "PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting", "PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature", "PROC 24: High (mechanical) energy work-up of substances bound in materials and/or articles", "PROC 25: Other hot work operations with metals", and "PROC 0: Other:" followed by a text input field. At the bottom right are "OK" and "Cancel" buttons.

PROC	Description
☒	PROC 14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
☐	PROC 21: Low energy manipulation of substances bound in materials and/or articles
☐	PROC 22: Potentially closed processing operations with minerals/metals at elevated temperature. Industrial setting
☐	PROC 23: Open processing and transfer operations with minerals/metals at elevated temperature
☐	PROC 24: High (mechanical) energy work-up of substances bound in materials and/or articles
☐	PROC 25: Other hot work operations with metals
☐	PROC 0: Other:

4. SDS comments and further input

Becky Marks

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SDS

- Information in the SDS should match information in the REACH dossier
- Aim to provide a standard SDS to ensure consistency between companies – particularly for hazard data and classification
- Generic SDS completed based on REACH dataset and GOSU provided by Lead Registrant
- Standard SDS template used, but data is not available to complete all SDS sections for all substances (not required under REACH)
- Some sections to be completed / edited by each company

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SDS

- Comments:
 - SDS for Rhenium metal and APR: on page 1 – there is a statement about Rhenium use “Manufacture of computer, electronic and optical products...” -> incorrect
 - Section 10 – stability and reactivity: data should be provided so all members have this section in line with each other.
 - Any other comments:
 - Format?
 - Should additional information be included?

5. AOB, next meetings/ calls and closing remarks

Angela Alderman