

Working group 1

Emission related strategic issues

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Overview

- Aim of the discussion in the working group
- Requirements for and aim of exposure scenarios under REACH
- Introduction to the information types which will become available via exposure scenarios
- Discussion issues

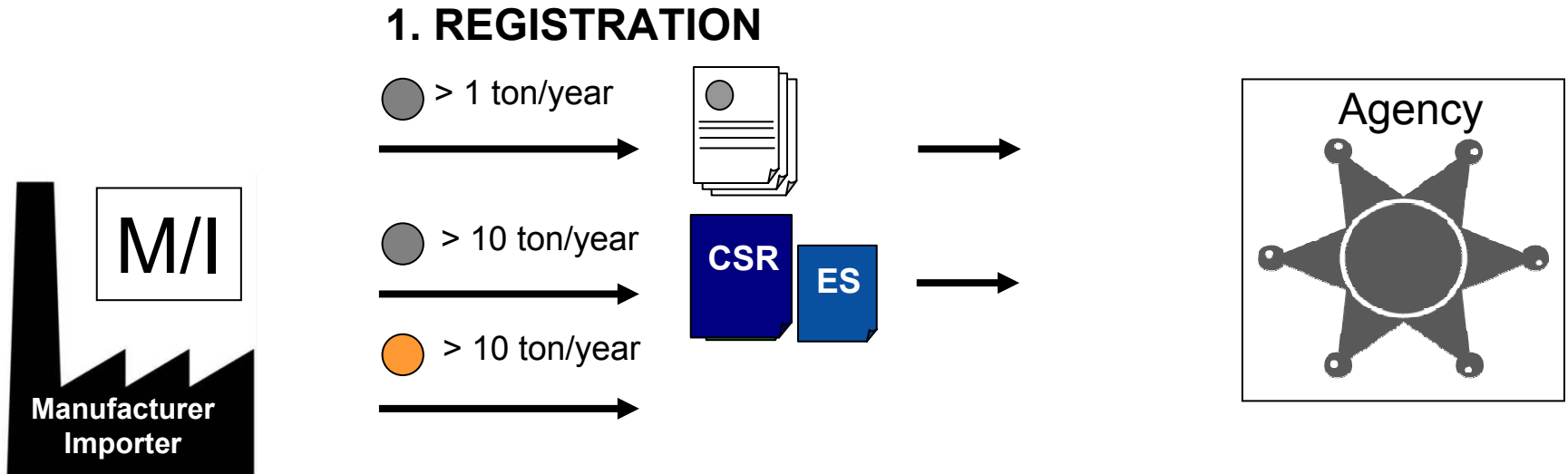
Aim of the working group

- Get a common understanding on:
 - Which type of information will become available from REACH and when
 - How and if this information could be useful in implementing or enforcing existing legislation
 - How and if the enforcement of the implementation of exposure scenarios could be organised
 - Which type of cooperation is necessary for an efficient enforcement of legislation


Chemical safety report

- **Aim:** Demonstrate safe use of the substance, exposure remains below the safe threshold (=>PNEC).
- **Method:** Calculation of exposure levels via models or measured data and comparison to safe values (PNEC/DNEL)
- **Result :** Exposure scenario = description of conditions of safe use for a specific use
- By manufacturer and importer of substances and article producers with intended release → registration
- By downstream users if use is not covered in registration

Requirements for exposure scenarios



Exposure assessment relates to identified uses along the entire supply chain, including the service life of articles (where relevant) and disposal of waste

 = Classified as dangerous according to Directive 67/548/EEC or PBT or vPvB

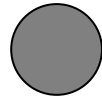
Phase in scheme

Pre-registration

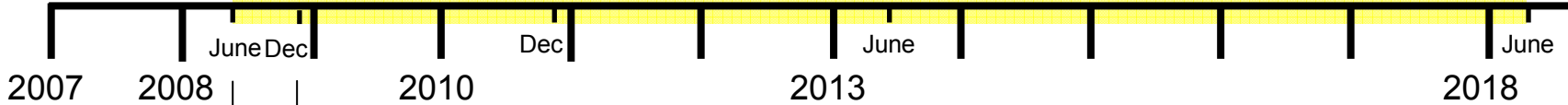
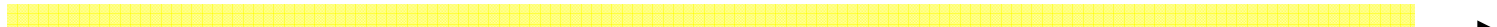
(phase-in Stoffe, >1 tonne/year)

 environment (R50/53)

 health (CMRs Cat. 1+2)

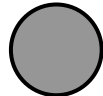


1. June - 30. Nov 2008



Registration

(Non-phase in, >1tonne/year)



> 1000 t/a



100-1000 t/a



1-100 t/a



> 100 t/a

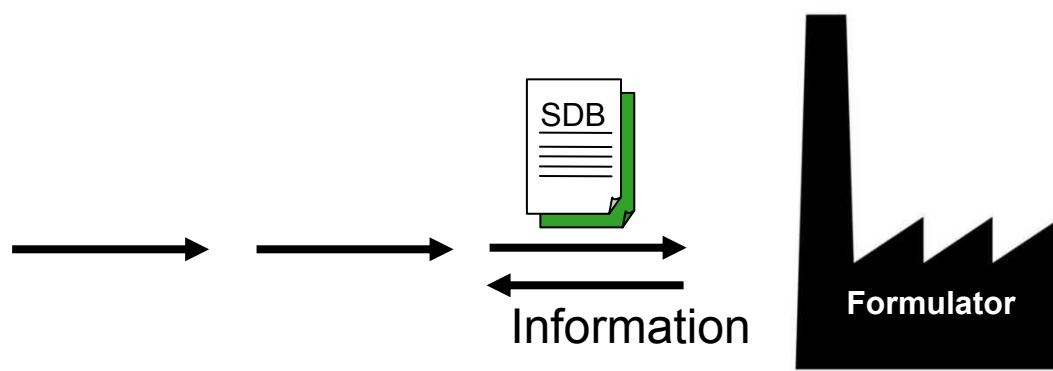


> 1 t/a

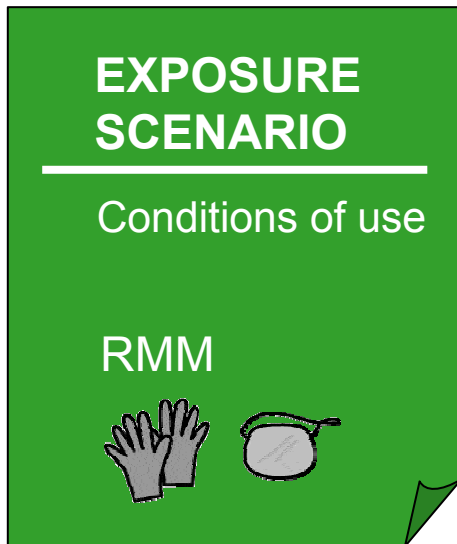
Availability of exposure scenarios

- Majority of exposure scenarios will be generated during the first 6.5 years of REACH implementation
 - > 1000 t/a
 - > 100 t/a
 - All CMRs and PBTs above 100 t/a
- Trigger depends on individual production / import volumes, thus the same substance ,legally‘ may and may not have an exposure scenario, depending on the supplier

Checking ES & Implementation

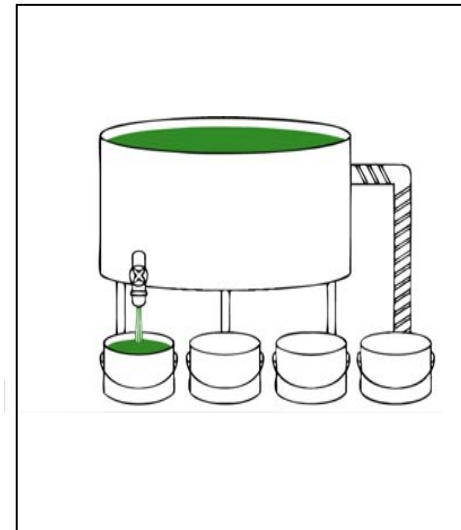


Assessment



sofia

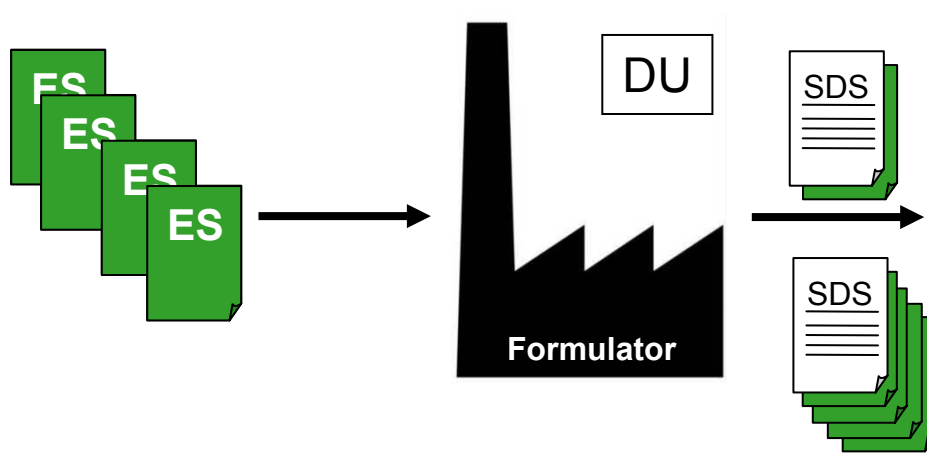
Implementation



~~okopol~~
Institut für Ökologie und Partikel GmbH

Öko-Institut e.V.
Institut für angewandte Ökologie
Institute for Applied Ecology

Communication of ES



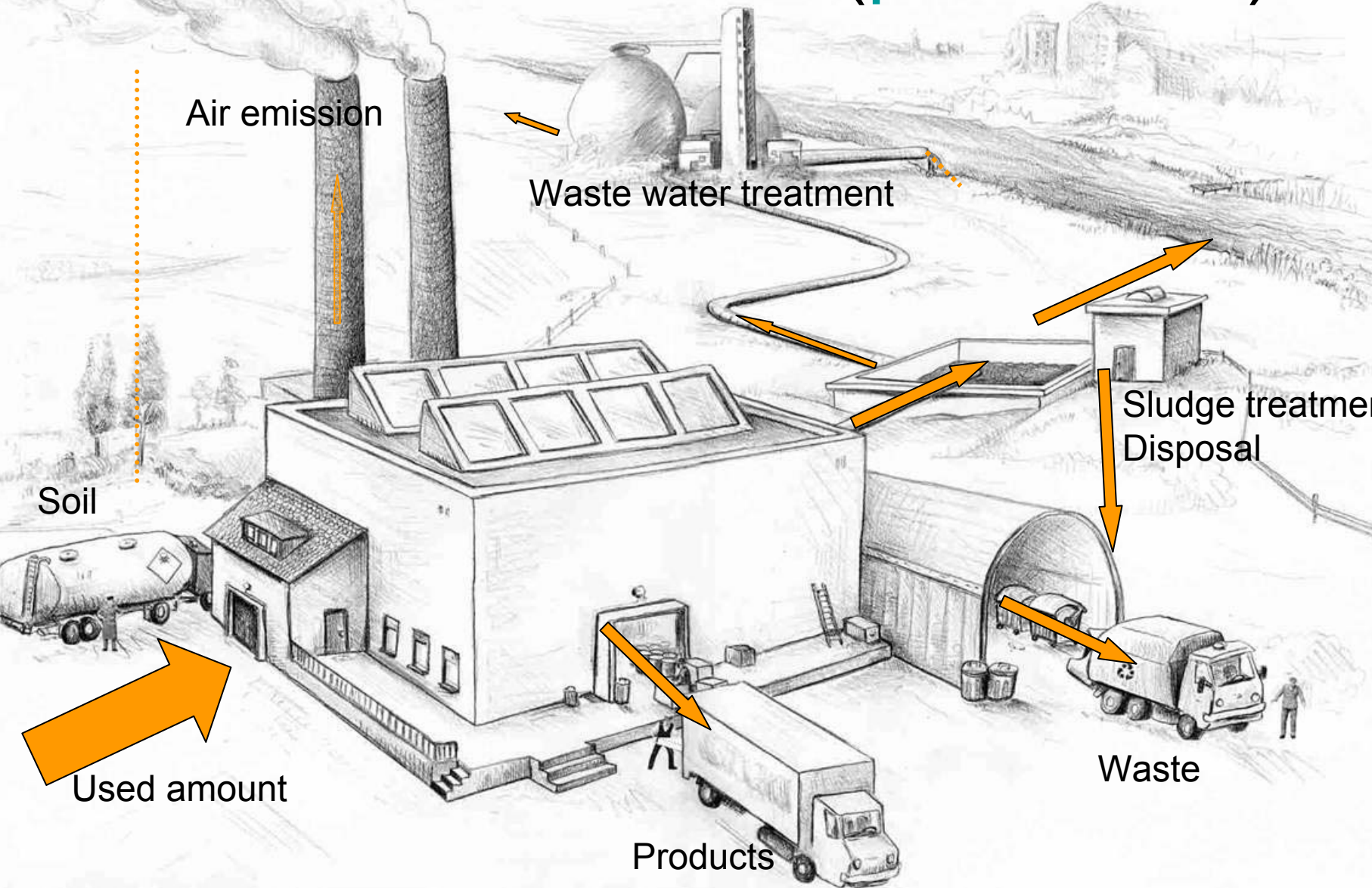
Exposure scenarios for preparations

- In most cases preparations are used, which will most likely have consolidated exposure scenarios attached to the safety data sheet
 - Conditions of use and risk management measures combined to ensure that all substances are handled safely
 - Substance specificity is ‚lost‘ but traceable
- Risk management measures need to control environmental, workers and consumer risks


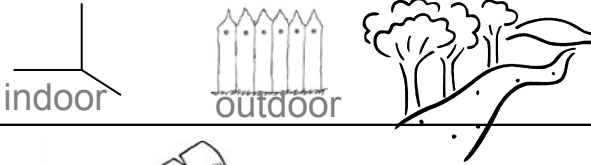

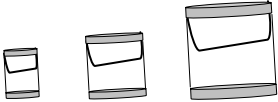
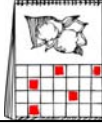


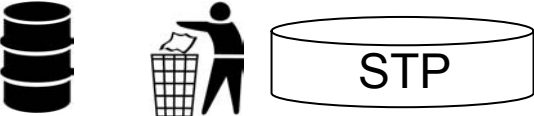
Demonstration of safe use

- ‚Assumption‘ on the way a substance is used along its life-cycle (initial exposure scenario)
- Environment:
 - Emission estimation = mass balance at point sources and for articles
 - Exposure estimation = fate modelling and derivation of PEC
 - Risk characterisation = PEC/PNEC comparison
 - Iteration of risk is identified by modifying hazard assessment (PNEC) or use conditions (exposure scenario)

Emission estimation (production)



Content of exposure scenario

Who	
Where	
How	
How much	
How often	
How long	
Risk management measures	
Waste disposal	

RMM Operational conditions of use

Conditions of use

Information in the ES (RIP 3.2)

Short title of the exposure scenario	No legal consequences
Processes and activities covered	Process covered?
Duration and frequency of use	
Physical form (substance, preparation, articles)	Relevance?
Concentration in preparation or article	Product surveillance
Amount used per time or activity	
Other relevant operational conditions of use	(Surroundings)
Risk management measures (workers, environment, consumers)	!!!
Waste management measures	
Exposure prediction	PEC
Guidance to DU to evaluate boundaries of ES	Modification of above

Crucial issues – responsibilities

- REACH relies on self-responsibility of industry
- Enforcement of IDENTIFICATION of safe use through defined interfaces of responsibility in the supply chain for dangerous substances via the exposure scenario
- Information on preparations may be sufficiently implemented through industry cooperation
- No incentive for IMPLEMENTATION of risk management measures by the downstream user during the use of substances in preparations, besides legal compliance

Crucial issues – overlapping legislation

- Risk management measures may be different from other **environmental** legislation and in conflict
 - REACH and environmental legislation currently as ‚additive‘ **provisions**
 - Downstream user and enforcement authorities may be of different opinions on which measures are relevant (most or least stringent?)
 - Risk based versus hazard / technology based approaches for emission control
 - **Single substance / sum parameters for monitoring of emissions**

Crucial issues – who does it?

- Enforcement of REACH by member state authorities
 - Traditional chemicals legislation (SDS, market surveillance) with competence and resources available
 - Implementation of exposure scenarios is
 - Cross-cutting (workers protection and environment)
 - Multi-dimensional (knowledge of used amounts, surroundings, products, ability to follow flexible approaches)
 - Relevant for SMEs but also for large enterprises / installations, service providers, handy-crafts ...

Crucial issues – complexity

- Exposure scenarios will be developed over time and integrated along the supply chain
 - Unclear when which requirement applies and to which substance – no guidance
 - Exposure scenarios may be different from different suppliers and or in different supply chains
- There are various exemptions for implementation of exposure scenarios
 - Use of less than 1 t/a by DU
 - PPORD
 - DU CSR is performed

Discussion issues

- Which information in the exposure scenarios is relevant for enforcement of **other** environmental legislation?
- Which **gaps/overlappings** exist between REACH and other emission control systems?
- How can synergies be achieved in enforcing REACH and environmental legislation?
- Who needs to cooperate with whom at EU and / or national level to make implementation successful?

Back-up slides

Ind. waste water treatment

EACH ES:

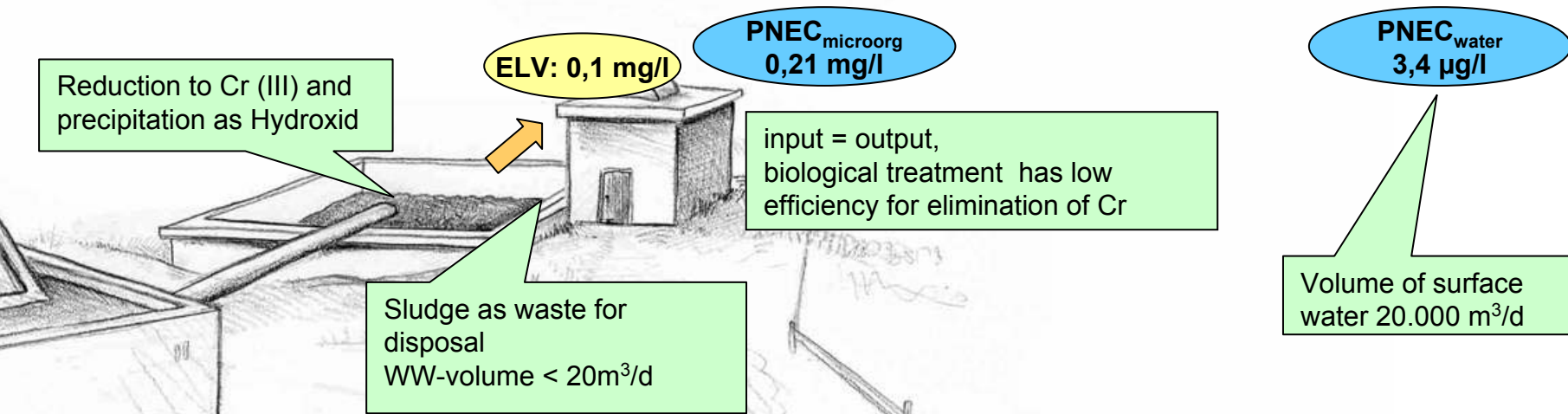
Integrated process water treatment for component currents (avoid pollution, effluent volume (per treatment): $< 20 \text{ m}^3$ conc. ecotoxic ions in effluent: $< 0,1 \text{ mg/l}$ sludge has to be disposed as waste

WFD:

Annex VIII Nr. 7: Metal and metal compounds - Impacts of substance to be analysed separately (Annex II, WFD)

AbwV (German waste water reg.) Annex 40 (metal-handling and processing Part D provisions before dilution):

Emission limit value **0,1 mg/L Cr** before mixture with other partial effluents



Exposure scenario metals

Inorganic metal compounds (Cu, Ni, Zn, Au, Cr, Sn, Ag) and Cyanid compounds with a PNEC $\geq 0,1 \mu\text{g/l}$:

- conditions of use according to BAT
- volume of receiving water flow $\geq 20.000 \text{ m}^3/\text{d}$
- Multi-level process water pretreatment
 - Oxidation/Reduction, precipitation and selective ion exchange
 - Complying with ELV

⇒ **River volume stream $\leq 20 \text{ m}^3/\text{Tag}$**

⇒ **Effluent concentration $\leq 0,1 \text{ mg/l}$**

⇒ **no limitation to the daily input**

⇒ Iterative options

- PNEC
- **volume of receiving water flow**
- Effluent volume

Exposure scenario organic ingredients in Electrolytes

- $PNEC_{\text{aqua}} \geq 1 \mu\text{g/l}$
- Non bioaccumulative
- At least inherent degradable,
- Vapour pressure $< 0,01 \text{ kPa}$ (20°C)
- conditions of use according to BAT
- volume of receiving water flow $\geq 20.000 \text{ m}^3/\text{Tag}$
- No special ww pre-treatment (risk management)
- Biological treatment, Elimination grade $\geq 41\%$
 - ⇒ **input max. 33 g/d (to balance releases of Electrolytes)**
- Iterative options
 - o PNEC
 - o volume of receiving water flow
 - o Elimination grade in wwtp

results

PEC calculation

- PEC-calculation basing on existing Emission Limit value and Worst Case-scenario:
 - ⇒ $PEC < PNEC$ for all companies that comply with German ELVs for Cr(VI), Nickel and Cyanide
- ⇒ Identification of exposure relevant factors, but information gaps
 - Efficiency of technical processes and risk management measures,
 - no information about elimination of substances in municipal wwtp