

SPERCs Quality Criteria

criteria developed by the working group 12 June 2019, V 0.14

ARCHE Consulting finalised the assessment with Fertilizers Europe 13.12.2019

Note: This work was carried out in the context of the Exchange Network on Exposure Scenarios (ENES). Specifically, action 2.3. of the work programme to 2020 included the development of quality criteria for the review of Specific Environmental Release Categories (SpERCs).

Link: [ENES programme 2020](#)

This document has been developed, based on continuous dialogue with ECHA and EU Member States, by an industry working group composed by the following industry associations:

- AISE - International Association for Soaps, Detergents and Maintenance Products
- CEFIC - European Chemical Industry Council
- CEPE - European Council of the Paint, Printing Ink and Artists' Colours Industry
- ESIG - European Solvents Industry Group
- ETRMA - European Tyre and Rubber Manufacturers Associations
- Eurometaux - European non-ferrous metals association
- FEICA - Association of the European Adhesive and Sealant Industry
- Fertilisers Europe

Disclaimer - This current version (v. 0.14) released on the 12th of June 2019 is a final draft that might be subject to further review before finalisation.

SPERCs Quality Criteria

SPERCs describe the conditions of use and related release factors for a specific use. They do not depict emission situations at concrete sites but address generic emission situations such as related to relevant practices in industry and in particular in the downstream industries. They attempt to be applicable to compute typical emission situations during the use of a substance or mixture for environmental exposure analysis. To that end, SPERCs strike a balance between the degree of detail needed for describing a given use situation and the generic character of a safety assessment under REACH. To that end a SPERC represents the level of conservatism in the derivation of the release factors matching the scope of its coverage.

Hence, SPERCs that describe a broad range of uses must depict a larger variance of release rates, which results in less realism for each single use covered but a higher conservatism overall. On the other hand, a SPERC that describes a narrow application scope, can be more realistic towards the specific use and the release factors; the derivation of emission relevant factors therefore deserves less conservatism

Purpose

According to the 2019-2020 ENES working programme, a review of SPERCs is expected to be conducted by both industry (internal review) and by authorities (external review). To ease this review, the industry SPERC TF has developed a set of quality criteria. The purpose of the quality criteria is **to support and document a quality assessment** of the SPERC background document and, where relevant, the corresponding fact sheets by considering following topics:

- Is the scope of the SPERC clear in terms process-types and/or product-types covered?
- Are the main Conditions of Use (CoU), including Operative Conditions (OC) and risk Management Measures (RMMs) driving the environmental release clearly identified, understandable and verifiable?
- Are the factors resulting from the key drivers for environmental emissions (water, soil, air) adequately quantified, and is it sufficiently explained how the release fractions were estimated?

The quality criteria are to be seen as a mean to assess quality, not as an objective on its own.

Who are the end-users of this template?

The quality criteria, in first instance, are to be used by the SPERC developers to check the completeness and quality of their own SPERCs as a self-assessment tool. External reviewers (industry, consultants or Member States) are encouraged to use the quality criteria to provide a focussed feedback to the SPERC developers on their SPERCs.

How to use the quality criteria template?

The quality assessor is asked to answer all relevant quality criteria questions by means of a score 1 (good) to 3 (insufficient) or indicate “not applicable” (4). A justification of the selected score shall be reported in the field ‘explanation of evaluation’. Especially where the scoring is “insufficient” the assessor should provide a thorough explanation in order to enable a focussed review of potential gaps. In addition, the quality assessor is asked to provide an overall score to the SPERC. When conducting the quality assessment, information present in both the factsheets and the background documents should be considered.

Scoring - Legend:

1 - Good	No need for further improvement
2 - Acceptable	OK, but room for improvement or aspects to be verified
3 - Insufficient	Improvement is required.
4 – Not applicable	Criteria not applicable to the specific SPERC under review

Glossary:

- CoU: Condition of Use
- Key condition of use drivers: CoU that are not key drivers for release can be considered to be removed from the SPERC.
- OC: Operational Condition
- RF: Release Fraction
- RMM: Risk Management Measure
- SPERC: Specific Environmental Release Category

ASSESSOR IDENTIFICATION	
Name of the assessor	Sabine Navis (ARCHE Consulting)
Contact details	Sabine.navis@arche-consulting.be ; leondina@fertilizerseurope.com
Documents evaluated	SPERC background document (v. June 2018), Fertilizers Europe SPERC 8e.3.v1 (v. Nov 2017)
Date of the evaluation	13 December 2019

1 – TITLE

1.1 Is the SPERCs title simple, concise, unambiguous, understandable?
The title of the SPERC is important to facilitate the selection of the most appropriate SPERC to be used to estimate environmental emissions when running a chemicals safety assessment.

EVALUATION	GOOD
Explanation of evaluation	Short but concise description of key information.
Remarks on improvements	

2 –SCOPE

2.1 Is the scope of the SPERC clear, verifiable and consistent with underlying ERCs?
Is the scope of the SPERC (in factsheet and background document) clear and verifiable for a user in terms of i) process-types, ii) product-types, and iii) substance properties covered? Are the boundaries of the scope sufficiently clear and explicit, indicating what is not covered, for example where misunderstanding may arise, or where the SPERC developer has chosen not to cover a particular use situation because it is exceptional for the sector. For example, where SpERCs relate to the scale of operation or the volatility of substances, quantitative benchmarks should be provided. (*) The use-map developer needs to build use names and names for the contributing activities that i) correctly match the scope of the applicable SPERC and ii) are easily verifiable for the companies receiving exposure scenarios.

EVALUATION	GOOD
Explanation of evaluation	Scope described shortly in SPERC factsheet, additional information on SPERC in relation to ERC in background document. Boundaries identified, explicitly stating which type of use is not covered by SPERC.
Remarks on improvements	

2.2 Is the scope described as substance and/or process domain consistent with the OC/RMM identified as driving the release?
The Scope section is to understand the relationship between substance type, product and process, including RMMs/abatement techniques, on the one hand and the environmental release on the other hand. Does this relationship become adequately clear and transparent? For example: <ul style="list-style-type: none"> If SPERC refers to products and processes where no water is involved, absence of water contact should be made explicit in the conditions of use, and it should be made clear whether this refers to the process as such or also to cleaning operations (equipment cleaning, floor cleaning). Hence, the process domain should hint towards the relevant sections in the process (i.e. conditions of use). The scope of the SPERC is driven in this case by the process domain and to a lesser extent by the substance domain; If a SPERC refers to volatile substances that are used as process aids leading mainly to emissions to air, the combination of substance and process domain will equally describe the scope of the SPERC. Certain substances (e.g. defined by a boiling point threshold) will be prone to air emissions as specified within the process domain (closed or open processes). Further conditions affecting the release into the environment is given in the CoU and is not part of the scope section.

EVALUATION	GOOD
Explanation of evaluation	Short description in SPERC factsheet, including link to external exposure tool (FEE tool) developed for environmental exposure assessment. RMMs not accounted for in default release factors (conservative approach).
Remarks on improvements	Link FEE tool to be updated to: http://www.reachfertilizers.com/

3 – OPERATIONAL CONDITIONS

3.1 Are the OCs clearly described and practically verifiable?
Together with the substance properties, the operational conditions determine the initial release of substances from the use-process. For example, elevated temperature (temperature benchmark needed) and abrasive processes usually increase the release of a substance to air, water contact during the process (water based process steps) or during cleaning (equipment or room cleaning) drives the presence of the substance in waste water. For the mentioned examples, it should be possible to communicate the operational conditions in a clear and verifiable way. However, it is not always possible in a generic SPERC (or in the resulting exposure scenario) to describe and communicate the (complex) operational conditions in the industrial processes of a sector driving the initial releases of the substance into exhaust air, waste water -or residue streams. In such cases, the SPERC best makes reference to a documented best/good practice or a Best Available Technique (BAT), provided such sector “standard” can be connected to (substance related) release factors. For example, generic

phrases in SPERCs factsheet such as “high degree of automation” or “efficient use of raw materials” should be referenced (or exemplified) to what this means in practice in the background document.

EVALUATION	GOOD
Explanation of evaluation	OCs short but clearly described, using standard phrases.
Remarks on improvements	

3.2 Do the OCs properly reflect the main drivers for release potential of substances into the environment?

Note - On this purpose, operational conditions mentioned shall be linked to the environmental releases covered by the SPERC. For example, if release to water is set to 0, CoU should reflect that cleaning operation needs to be performed without water and no water used in process or water is completely recycled and water containing residues (from cleaning the water-cycle) are disposed of as waste.

EVALUATION	GOOD
Explanation of evaluation	OCs indicate that main release is to soil compartment (intentional release). More detailed descriptions in SPERC background document.
Remarks on improvements	

3.3 If a use rate has been provided: Is it transparent, how the use rate has been derived and how representative it is?

Note: a use rate is generally site specific and cannot be provided as definite by a SPERC. Therefore, in general, SPERCs may provide indicative use rates that are based on conservative assumptions (i.e. high end of daily use rates) from industry use data. These use-rates are meant to serve as a starting point or benchmark for the registrant’s assessment. It is for example important to explain, whether the indicative value is based on statistical figures on daily consumption of chemicals at single sites, or whether the indicative value is extrapolated from an annual market/sector tonnage, distributed over a number of users and/or a number of use-days. In this respect it may also play a role whether the activity is carried out as i) small scale operation and ii) large scale operation, and or under optimal or suboptimal conditions and thus whether several SPERCs may be needed (with a corresponding indicative use-rate), e.g. one with onsite emission controls and the other without onsite emission controls. For uses where process waters are retained and environmental releases potentially occur discontinuously, it need to be transparently explained to what use rate the SpERC emission factors are applicable. For example, the emission factors of such a SPERC can be a reflection of the continuous flow-through situation (with daily compensation of losses) and/or a situation where the whole bath is exchanged (and fractions of it are released on a day).

EVALUATION	Not applicable
Explanation of evaluation	See section 5. Use rate is not provided in the SPERC factsheet, but guidance can be found in the SPERC background document and realistic substance use rates are available in the corresponding Generic Exposure Scenarios.
Remarks on improvements	

4 – RISK MANAGEMENT

4.1 Are the RMM described in a clear manner?

Are the RMM (in factsheet and background document) described in a clear manner (required effectiveness and technical possibilities to achieve it), so that a DU or an authority could practically verify whether such techniques or equivalents are in place? In case RMMs are linked to good/best practices/techniques, have the corresponding references been provided (e.g. BAT, BREF documents)? Note, that a link to good/best practices may subsume an array of alternative techniques that lead to similar results of emission reduction.

EVALUATION	Not applicable
Explanation of evaluation	RMMs not accounted for in default release factors (conservative approach). Referred to best agricultural/application practices, but full reference is missing.
Remarks on improvements	Include reference to cross-compliance of common agricultural policy.

4.2 Are RMMs adequate for the substance/product domain?

Is it plausible that the reported RMMs are effective to substances within the described domain and /or to the product types within the scope of the SPERC? Is this linkage adequately described in the background document? For example, mechanical oil/water separation may not effectively work where emulsions occur.

EVALUATION	Not applicable
Explanation of evaluation	RMMs not accounted for in default release factors (conservative approach). Explanation in more details in SPERC background document.
Remarks on improvements	

4.3 Are RMMs clearly linked to release sources?

Are the main sources/pathways of release from the process described in the background document, and is it clear to which of these the RMM refer? For complex air treatment systems (e.g. wet scrubbing), is it sufficiently clear, on which pathway and at which rate the substances removed from air leaves the site (for example via waste-water or waste)?
In case alternative RMMs can be applied to achieve similar end-of-pipe effectiveness, are concrete examples/options provided? Note, that good/best practices may subsume an array of alternative techniques that lead to similar results of emission reduction.

EVALUATION	Not applicable
Explanation of evaluation	Quantitative RMMs not relevant for this SPERC. Only reference to BAT to limit release to surface water. RMMs not accounted for in default release factors (conservative approach).
Remarks on improvements	Include reference to cross-compliance of common agricultural policy.

5 – RELEASE FACTORS

5.1a MEASURED DATA - Are measured data representative and well documented?

In case a set of measured data for the process/products covered in the SPERC, and taken under the conditions of use as described in the SPERC, is the number of data points, the number of companies and the substances analysed documented or referenced? Are measured data related to reasonable and documented use rates in order to derive representative release factors? Where available, provide a data analysis (e.g. distribution %ile) to identify representativeness of the data for the respective purpose (e.g. determination of release rate).

EVALUATION	Not applicable
Explanation of evaluation	No reference to measured data.
Remarks on improvements	

5.1b MODELLED DATA - Is the documentation on the model and the modelling report available?

In case release factors are determined based on a model developed for the processes and products covered in the SPERC, is the documentation of the model and a modelling report available? Are modelled releases related to representative use rates in order to derive reasonable release factors?

EVALUATION	GOOD
Explanation of evaluation	Short description in SPERC factsheet for derivation of release factor to soil and surface water (potential direct input by spray drift). More details for justification of release factors in SPERC background document, including link to external exposure tool (FEE tool) developed for environmental exposure assessment.
Remarks on improvements	

5.1c LITERATURE DATA - Is the literature source provided and assessed to be representative/robust?

In case the release factors are extracted from published literature referring to the process/products and conditions of use covered in the SPERC, is the literature referenced and is a short summary provided in the background document? Is the number of data points, the number of companies, the conditions of use and the substances analysed clearly documented in the publication? Are the conditions of use referred to in the publication consistent with the conditions identified in the SPERC.

EVALUATION	ACCEPTABLE
Explanation of evaluation	For release factor to waste reference is made to OECD emission scenario document in SPERC factsheet and background document but no details are provided.
Remarks on improvements	Include details from OECD emission scenario document used to derived release factor in SPERC background document. Include full reference (including link to website) in SPERC factsheet. Reference: OECD (2009) OECD Series on emission scenario documents 3, Emission scenario document on plastic additives; http://www.oecd.org/chemicalsafety/risk-assessment/emissionscenariodocuments.htm

5.1d READ-ACROSS DATA – Is the read-across sufficiently robust and well explained?

In case of read-across from any of the type of sources above (to other processes, other products, other conditions of use), is the read-across sufficiently explained, for example by comparing the processes, the release driving factors and the properties of the chemicals involved. For example, releases to water from any kind of formulation processes will have very similar drivers, independent of the concrete product category: It will depend on i) dustiness or viscosity of the chemicals to be mixed, ii) whether cleaning of machinery is carried out with water, iii) whether the equipment is run continuously or in batch-mode with intermediate cleaning and iv) which techniques are used to minimise the residues in the equipment before cleaning. Thus read-across from formulation of one product category to another one may be straight forward.

EVALUATION	Not applicable
Explanation of evaluation	Separate SPERC factsheets are developed depending on application techniques.
Remarks on improvements	

6 – CONSERVATISM

6.1 – Is the level of conservatism appropriate?

Does the scope of the SPERC cover sufficiently all uses described by the CoU and RMMs? Is the level of conservatism, i.e. the conservative derivation of release factors, etc., sufficiently described in the background document? Is the level of conservatism balanced compared to the scope? (i.e. broader scope requires more conservatism and vice versa). Conservatism can result from different aspects, e.g. from the mathematical analysis of data (e.g. taking a 90%ile, summing up from individuals to a category, etc.), the read across from different processes and/or a worst case approach, where assumptions were taken from the process with the worst emission aspects.

EVALUATION	GOOD
Explanation of evaluation	Conservatism described in section 6 of SPERC background document.
Remarks on improvements	

7 – SUMMARY and OVERALL JUDGEMENT

7.1 - Overall judgement of the reviewer

Based on the documented information, are the release factors considered representative and reliable for the conditions of use described in the SPERC and the type of substances (by chemical-physical properties) contained in products/processes covered by the SPERC?

Overall score	Assign a score
----------------------	----------------

Title	Scope	OCs	RMMs	RELEASE FACTORS	CONSERVATISM
GOOD	GOOD	GOOD	Not applicable	GOOD	GOOD

Overall evaluation	SPERC and SPERC background document provide a clear and concise description of scope, operational conditions and release factors relevant for respective fertilizer use.
Overall remarks on improvements	Additional details to be added for references to cross-compliance of common agricultural policy and to the OECD emission scenario document, both in the SPERC factsheet and in the SPERC background document. Website address for download of FEE tool and SPERC background to be updated in SPERC factsheet.