

For our Environment

Umwelt
Bundesamt

ANSI-NSP Workshop Advanced Materials 19/20 August 2020

Advanced Materials - Perspective of the German Environment Agency

Doris Völker



- heterogenous group of new or modified materials
- including (next generation) nanomaterials and nanostructured materials
- including materials beyond $> 100 \text{ nm}^*$ with potential risks not solely determined by chemical composition, but may be additionally strengthened-by physical and morphological properties



***No common understanding what Advanced Material include!
Complexity which goes beyond 1st generation nanomaterials!***

Questions from a Competent Authority point of view:

- Can current tools for risk assessment be applied properly?
- Which regulatory challenges do advanced materials entail, e.g. are they covered by the definition of a substance?
 - Is safe use warranted?

*Materials exhibiting special functionalities (catalytic, optical, magnetic...), organic-inorganic hybrid materials, advanced polymers, materials with biological and chemical components, carbon materials...

Advanced Materials – Thematic conferences

Assessment of needs to act on chemical safety*

Run Time: Summer 2019 – Summer 2021

Objectives:

- identify advanced materials and their (future) applications for human and environment which pose challenges for regulation
 - identify challenges for appropriate risk assessment and safe use
 - deduce recommendations for actions to assure safety of human and environment



Elements:

- **Survey** on advanced materials on classes, uses, existing definitions
- Approaches how to **categorize and prioritize** advanced materials
- Discussions in three **international thematic conferences** (Dec 2019, June/September 2020 and May 2021)



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

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Advanced materials - online conferences

Identification of action needs on chemical safety

Approaches for structuring the field, prioritisation and assessment

First online conference

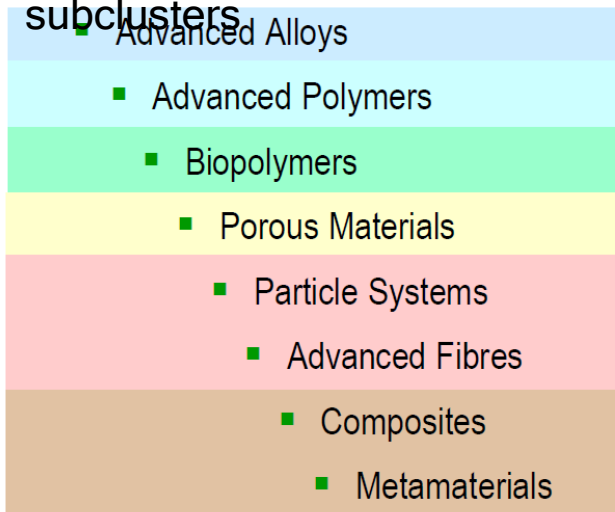
16 June 10:00 – 12:00 and 13:00 – 15:00 CET

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Proposed structuring approach:

- 8 main cluster with several subclusters



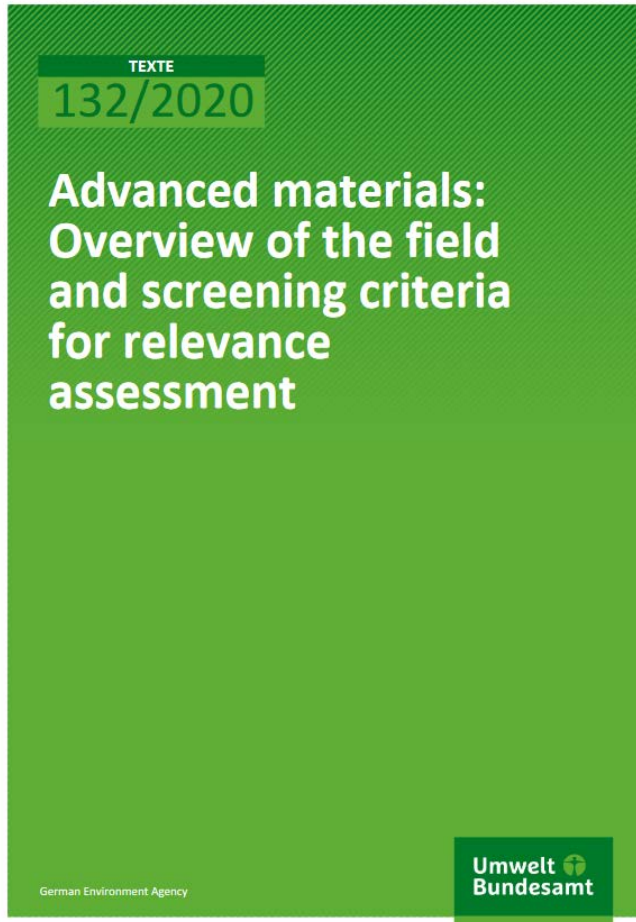
Giese, B., 1st Online Conference Advanced Materials, 16 June 2020

Proposed criteria to prioritise for further action:

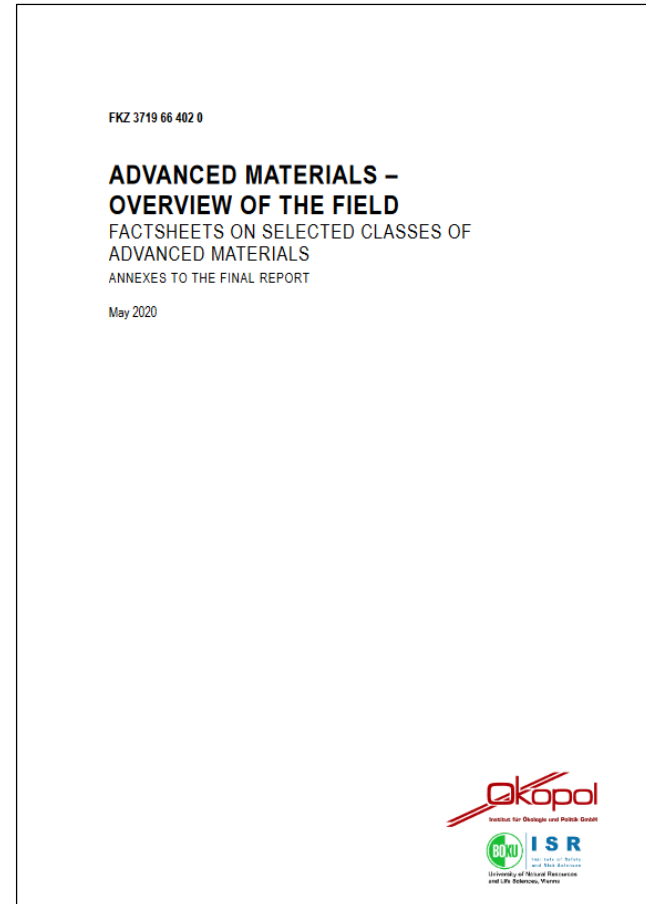
- Criteria deduced from 4 dimensions of relevance: *science, economy/technology, risk, regulation*
- *Aim:* Screen clusters/subclusters for prioritisation of advanced materials “of concern” for further action:
 - Close data gaps
 - Check legal coverage
 - Assess possibilities for adequate risk assessment
 - Involve stakeholders...

- Fact sheets on subclusters

Publications of current project outcomes



<https://www.umweltbundesamt.de/publikationen/advanced-materials-overview-of-the-field-screening>



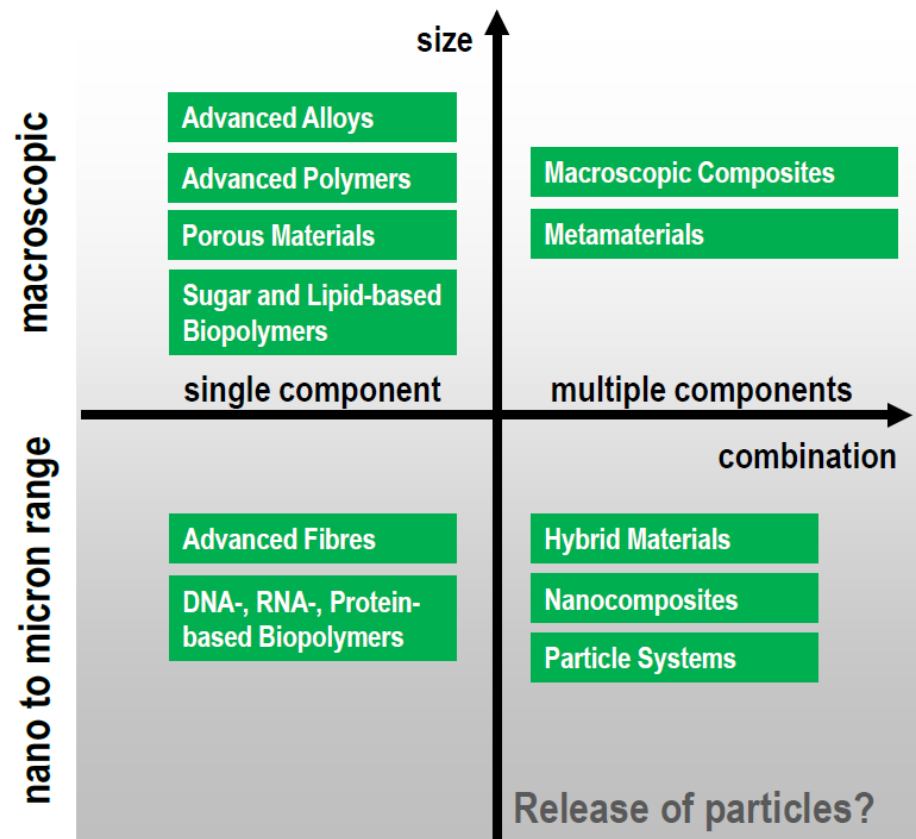
https://oekopol.de/archiv/material/756_AdMa_Factsheets_final.pdf

Conclusions

Goals of the ANSI-NSP Workshop

1. *Identify relationships and synergies between nanotechnology standardization activities and needs relative to advanced materials*

- Involvement of expert community for nanomaterials (plus experts specific for a certain cluster or area of interest, e.g. CE)
- Build on knowledge gained and approaches developed for nanomaterials (if possible, e.g. challenges related to particulate materials)
- **However:** Even though challenges might be similar, advanced materials may feature additional ones, more urgent as, or less relevant for nanomaterials!



Goals of the ANSI-NSP Workshop

2. *How can we do better at identifying the gaps and the needs relative to Advanced Materials Standards, and how do we prioritize topic areas?*

- Don't try define, but to delimit!

Delimitation to „non-advanced“: materials that are rationally designed in order to fulfil the functional requirements of a certain application

- Screen for relevant cluster of advanced materials for further action on, e.g.
 - Indications of hazard, exposure and risk
 - Lack of data on potential hazard or risk
 - Legal coverage
 - Appropriateness of tools for risk assessment
 - Constraints for circular economy and resource consumption
 - ...

Thank you for your attention!

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Next Online Conference

Advanced materials - online conferences
Identification of action needs on chemical safety

Chemical safety concerns of advanced materials –
advanced materials of concern

Second online conference
15 September 10:00 – 12:00 and 13:00 – 15:00 CET