

# The German Interagency Working Group Advanced Materials



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# Material innovations are key to address global challenges

- Material innovations are important drivers in many industrial sectors

A strong European Materials ecosystem drives the green and digital transition as well as a sustainable inclusive European society through a systemic collaboration of upstream developers, downstream users and citizens and all stakeholders in between.

*Source: Materials 2030 Manifesto, 07.02.2022*

## Important Sectors for Advanced Materials (examples)

- Health Care & Medicine (e.g. active/ stimuli-response drug delivery systems, new diagnostics)
- Building & Construction (e.g. new bio-inspired building materials)
- Energy (e.g. new battery materials)
- Transport (e.g. light-weight materials, new catalysts)
- Consumer Products (e.g. advanced surfaces, intelligent textiles)
- Packaging (e.g. renewable, recyclable materials, intelligent packaging)
- Agriculture (e.g. new formulation for biocides/ pesticides, materials for urban farming)
- Electronics

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# Aims of the Working Group

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## ➤ Establish an early warning system

- Regulatory preparedness for materials innovations
- Identify potentially critical materials/ applications early on
- Identify data gaps, needs for research and method development
- Check existing legislation and guidance documents for needs of adaptation

## ➤ Ensure a regular and open communication

- Make use of complimentary expertise
- Consider different perspectives from the beginning
- Develop optimal approaches together

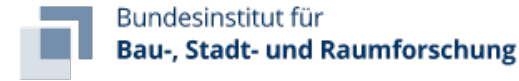
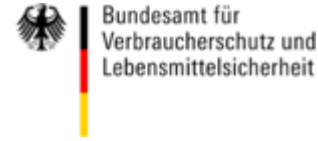
## ➤ Discuss new concepts (e.g. SbD, SSbD)

**Importantly, the working group does not follow a generic approach targeting at all advanced materials.**

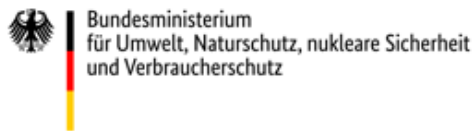
Our aim is to identify individual materials/ material classes based on scientific criteria that deserve an in-depth evaluation and potentially other follow-up activities.

# Participants

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## Observers



## Chair

PD Dr. Andrea Haase  
German Federal Institute for Risk Assessment (BfR)

## Meetings

Kick Off in November 2020  
Two meetings per year

# Advanced Materials: A Working Definition

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**Advanced materials are materials that are rationally structured and designed through the precise control of their composition and internal or external structure in order to fulfil new functional requirements.**

This working definition was developed together during the first meetings with the goal to facilitate a common understanding of the term “advanced materials” within our working group.

It **is explicitly not intended** as a basis for fundamental regulation or to be used in existing regulations.

It was further discussed during the the OECD WPMN SG Advanced Materials

# Materials of Concern

## Proposal for the identification of “Materials of Concern”

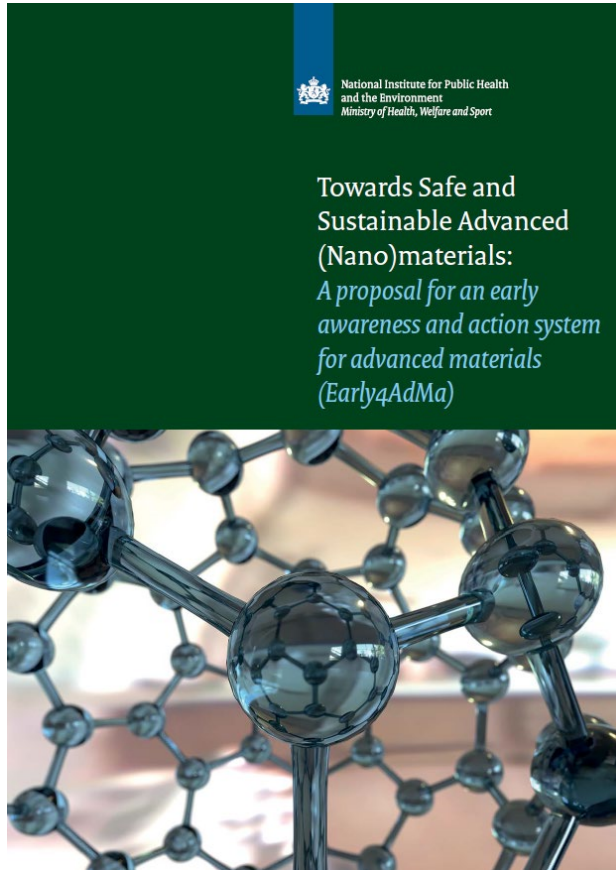
A “Material of Concern (MoC)” is

- ▶ (i) a material meeting the criteria for classification as a "hazardous substance" or "hazardous mixture" within the meaning of the criteria set out in Annex I to Regulation (EC) 1272/2008, or
- ▶ (ii) a material from which hazardous substances or mixtures according to (i) can arise or be released during its production or over its life cycle, or
- ▶ (iii) a material which does not meet the criteria (i) or (ii) but which, because of its morphological, physico-chemical, chemical, (eco) toxicological or release properties, could pose a risk to human or environment during its production or over its life cycle, or
- ▶ (iv) a material which could pose a concern regarding additional sustainability aspects.

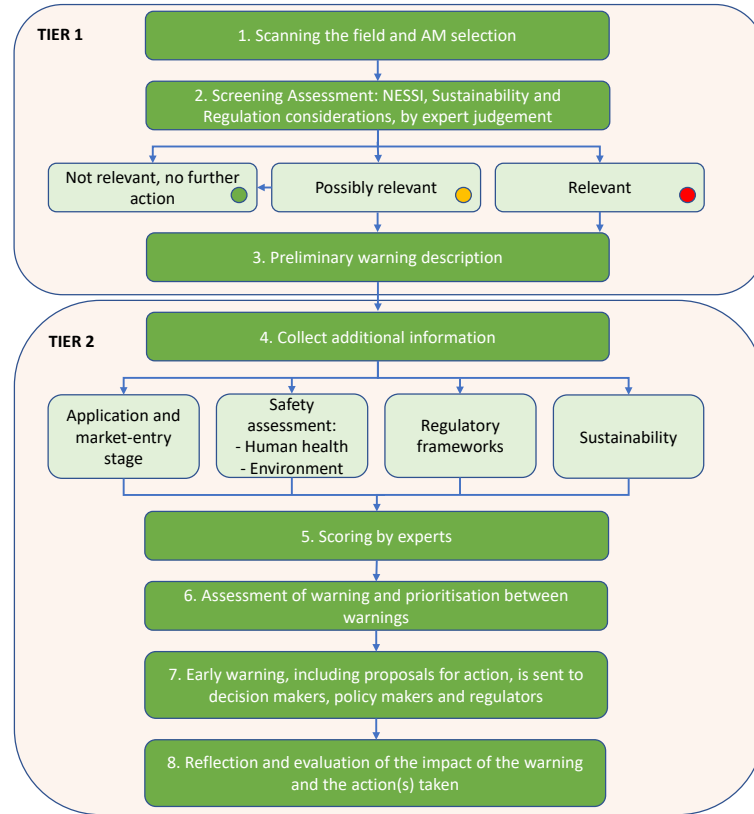
This concept should allow to identify from the variety of all materials those that give rise for specific concerns and/or pose challenges for chemical safety or other aspects of sustainability.

Importantly, the definition should cover all materials.

# Proposal for an early warning system Early4AdMa



EWARN system: Steps to identify, describe, prioritise and respond to warnings in the field of advanced nanomaterials (AM)



**Tier 1: Screening**

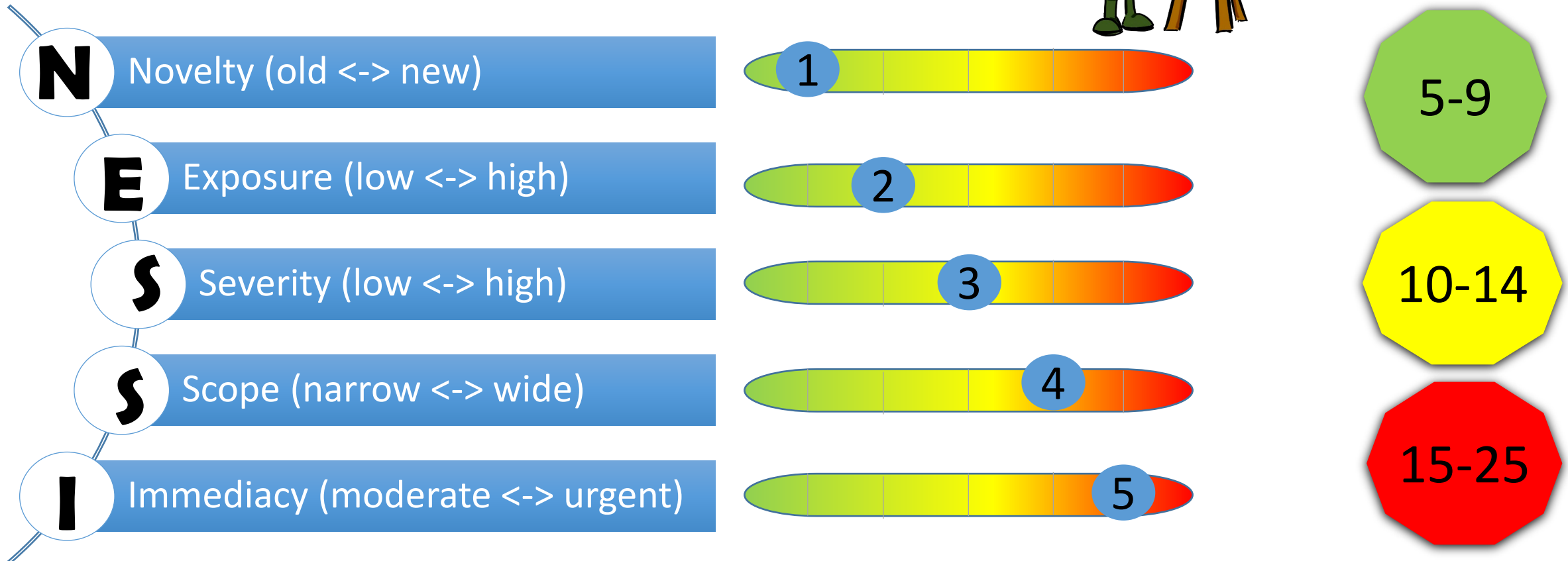
**Tier 2: Detailed Assessment  
(if needed)**



Source: [https://www.rivm.nl/sites/default/files/2022-07/RIVM-brochure-Towards-safe-%28nano%29materials\\_V2\\_TG.pdf](https://www.rivm.nl/sites/default/files/2022-07/RIVM-brochure-Towards-safe-%28nano%29materials_V2_TG.pdf)

# Screening Tool: NESSI

## Emerging Risk Evaluation





# Examples for Topics discussed so far

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## ➤ **Advanced Fibres**

- Criteria to identify critical fibres (including challenges for nanofibers)
- Needs for method development identified (e.g. rigidity)
- Needs for adaptation of existing regulation (e.g. REACH) discussed

## ➤ **Nanocarriers**

- Discussed from different perspectives (e.g. medicine, cosmetics, food, pesticides, environment)
- Needs for method development identified
- Needs to adapt existing guidance documents to specify test requirements

## ➤ **Batteries for Electromobility (with a specific focus on materials)**

- complex topic, many sectors to be considered (Environmental, Occupational, Consumer)
- need for further discussion, follow-up actions to be agreed

# Thank you very much for your attention!

## Questions?



<https://www.umweltbundesamt.de/publikationen/risk-governance-of-advanced-materials>