

# New paper: FAIR assessment of nanosafety data reusability with community standards

Egon Willighagen 

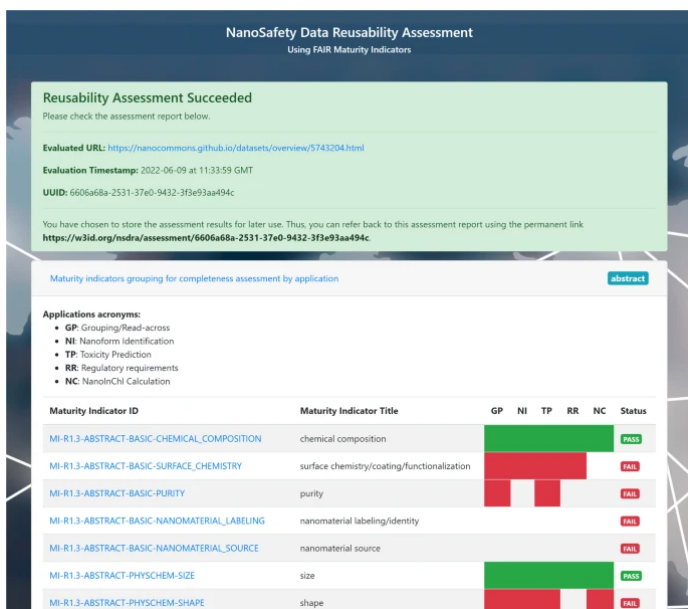
Published June 10, 2024

## Citation

Willighagen, E. (2024, June 10). New paper: FAIR assessment of nanosafety data reusability with community standards. *Chem-bla-ics*. <https://doi.org/10.59350/b4tm0-s7c62>

## Keywords

Fair, Toxicology, Qsar



The screenshot shows a web interface for 'NanoSafety Data Reusability Assessment' using FAIR Maturity Indicators. It features a green success banner, evaluation details (URL, timestamp, UUID), and a table of maturity indicators grouped by application. The table includes columns for indicator ID, title, and status across five categories: GP, NI, TP, RR, and NC.

Maturity Indicator ID	Maturity Indicator Title	GP	NI	TP	RR	NC	Status
MI-R1.3-ABSTRACT-BASIC-CHEMICAL_COMPOSITION	chemical composition	Pass	Pass	Pass	Pass	Pass	PASS
MI-R1.3-ABSTRACT-BASIC-SURFACE_CHEMISTRY	surface chemistry/coating/functionalization	Fail	Fail	Fail	Fail	Fail	FAIL
MI-R1.3-ABSTRACT-BASIC-PURITY	purity	Fail	Fail	Fail	Fail	Fail	FAIL
MI-R1.3-ABSTRACT-BASIC-NANOMATERIAL_LABELING	nanomaterial labeling/identity	Fail	Fail	Fail	Fail	Fail	FAIL
MI-R1.3-ABSTRACT-BASIC-NANOMATERIAL_SOURCE	nanomaterial source	Fail	Fail	Fail	Fail	Fail	FAIL
MI-R1.3-ABSTRACT-PHYSCHEM-SIZE	size	Pass	Pass	Pass	Pass	Pass	PASS
MI-R1.3-ABSTRACT-PHYSCHEM-SHAPE	shape	Fail	Fail	Fail	Fail	Fail	FAIL

## Copyright

Copyright © Egon Willighagen 2024. Distributed under the terms of the [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## chem-bla-ics

[Ammar](#) is finishing up his PhD thesis with his research on the use of FAIR towards predictive toxicology. Or, “AI ready”, as the term FAIR is now sometimes explained. Any computational method needs good data, and just FAIR is not enough. It needs to meet community standards, as formalized in R1.3. To me, this includes meeting community standards like minimal reporting standards. Indeed, in the [EU NanoSafety Cluster](#) the notion that FAIR data also needs to be scientifically good data is well noted.

In this paper (doi:[10.1038/s41597-024-03324-x](https://doi.org/10.1038/s41597-024-03324-x)), Ammar explores this notion and compiled more than 200 maturity indicators in the category R1.3 resulting from 12 different community standards. For example, this includes minimal reporting standards. There is overlap in needs, but they often also have a different focus. The conclusion here: different (re)use cases have different needs, and data not usable to one use case can be sufficiently FAIR for another. Of course, ideally, it would be FAIR enough for all use cases.

Ammar formalizes the maturity indicators and links the coming maturity indicators to various use cases. That means that when you determine the indicator values for your data, people can immediately lookup how this data can be reused. And, the generator of the data can immediately see how the data would need to be improved to widen the reusability. How FAIR can we get?

His proposal has already been further explored in two other papers, one around data sharing (doi:[10.1038/s41596-024-00993-1](https://doi.org/10.1038/s41596-024-00993-1), see also [this blog post](#)) and one around QSAR modelling (doi:[10.1016/j.impact.2023.100475](https://doi.org/10.1016/j.impact.2023.100475), see also [this blog post](#)).

The below screenshot shows what an analysis using this approach can look like:

### References

- [10.1038/S41597-024-03324-X](https://doi.org/10.1038/S41597-024-03324-X)
- [10.1016/J.IMPACT.2023.100475](https://doi.org/10.1016/J.IMPACT.2023.100475)
- [10.1038/S41596-024-00993-1](https://doi.org/10.1038/S41596-024-00993-1)