| **Paper:** | | | |
|---|---|---|---|
| **Assessment Criteria** | **must** | **might** | **fulfilled?** |
| ***1. Physico-chemical NM properties (powders or suspensions as prepared or delivered):*** | | | |
| Name of substance (or CAS-No), form of delivery (powder, suspension) | X | | |
| Chemical composition: Purity, contaminations (e.g. elements, element concentrations, endotoxins) | X | | |
| Particle size, size distribution in suspensions (incl. dispersion medium) | X | | |
| Specific surface area of powders (e.g. BET surface) | X | | |
| Surface chemistry (functionalisation, hydrophobic, hydrophilic, ...) / coatings / modifications | X | | |
| Morphology (shape) | X | | |
| Crystallography (crystalline or amorphous phase); phase analysis (pure or mixed) | | X | |
| Surface reactivity and / or surface charge (zeta potential, isoelectric point) | | X | |
| Formation of radicals, (photo-)catalytic activity | | X | |
| Porosity, defect density, magnetic properties | | X | |
| | | | |
| ***2. Sample preparation (dispersion of as prepared or delivered NM in media used for biological experiments)*** | | | |
| Dispersion procedure described in detail? (Type of medium used, preparation of stock solution or direct dosing, way of dispersal, energy input, nominal concentration) | X | | |
| Extent of agglomeration / aggregation resp. particle size distribution under experimental conditions (e.g. culture medium, nutrient solutions w/o proteins) | | X | |
| Water solubility (discriminate between soluble, metastable and persistent particles; metastable: soluble within days or weeks) | | X | |
| | | | |
| ***3. Testing parameters:*** | | | |
| Controls (positive and negative controls), check for interferences | X | | |
| Concentration administered: in µg/ml, µg/cm$^2$; N (particle)/cell or pg/cell | X | | |
| Dosage used classified clearly to be "non-overload" or "overload conditions" | X | | |
| Method 1 for biological endpoints | X | | |
| Additional 2nd method for biological endpoints | | X | |
| Use of reference material | | X | |
| | | | |
| ***4. General aspects:*** | | | |
| Data evaluation / statistics | X | | |
| Criteria of standardisation (e.g. SOPs used, OECD guidelines) | | X | |
| **Final evaluation:** | | | |

| **Evaluated by:** | | **Date:** | |
|---|---|---|---|

Legend: fulfilled = x; not fulfilled = n; not assessable = - or 0

**Issues to be considered / decided based on expert knowledge:**

Clear description of any additive used in combination with the nanomaterial during all steps of testing: (1) during NM production/synthesis, (2) during suspension preparation, (3) during biological testing. (E.g. (1) PVP is added to nAg to stabilize particles during synthesis; (2) Cysteine is added to the nAg suspension to complex free silver ions, (3) during biological testing, the silver particles interact with serum)

Consideration of aging, do NM powders / suspension change over time (oxidation / reduction)?

Information on agglomeration and sedimentation behavior during the test (either descriptive or quantitative)

*Specific for ecotoxicological studies*
Real exposure concentrations during the test determined (Nominal vs. real concentration)