

Organics Council® Substance Approval Metasearch Query Summary

A preliminary search is initially performed on authoritative databases and search engines such as ECHA, OSHA, CEPA, ToxNet, PubMed and PubChem, to obtain data on basic substance chemistry, properties and current regulatory/guideline safety limit values, as outlined below.

Manual search 1. Substance chemistry, properties and general descriptions

The following data are obtained and recorded:

- PubMed database link
- Chemical formula
- Molar mass
- IUPAC ID
- CAS number
- Melting point
- Boiling point
- Density
- Soluble in
- Established current exposure levels
- Are EFSA regulations in place?
- Accepted NOAEL for current EFSA guidelines
- Alternative NOAEL from literature
- Accepted TDI for current EFSA guidelines
- Accepted TDI from literature
- Accepted LOAEL for current EFSA guidelines
- Accepted LOAEL from literature
- Any opinion from Denmark on the current regulations in place
- Any opinion from Denmark on the current TDI in place
- Accepted NOAEL from current Japanese guidelines
- Accepted TDI from current Japanese guidelines
- WHO regulations or policy
- Accepted WHO NOAEL
- Accepted WHO TDI limit
- Any bans or restrictions in place worldwide
- Industrial applications
- Substance category: natural or synthetic
- Restrictions and precautions for safe handling
- Restrictions and precautions for safe disposal

Substance data metasearches: methodology

- Using a scientific article aggregator search engine (PubMed), specific metasearch queries are used to obtain relevant data. Specific metasearch queries are used for all substance assessments to ensure results are comparable and repeatable.
- Only data from authoritative data sources are accepted.
- Results are sorted by relevance and then by publication date, but no publication date limits are set.
- The term “nanoparticle” is excluded from toxicity (2) and sustainability (3) searches to allow for clarity and non-nano scale substance toxicity and sustainability focus. Further search (4) is used to capture nanoparticle occurrence specific information. The Organics Council® does not approve engineered nanoparticles, but information is still collected on natural or incidental nanoparticle occurrence, as well as nanoparticle occurrence during use, manufacturing, disposal etc.

2. Substance Toxicity data group metasearch queries:

Toxicity information

Metaquery 2.1 (toxicity) minimum top 100 weighted studies reviewed:

((("substance name" OR "synonym 1" OR "synonym 2") AND (toxicity OR toxicities OR toxic OR safety OR safeties OR health OR exposure OR exposures) AND (human OR humans OR people OR worker OR workers OR employee OR employees OR man OR men OR woman OR women OR girls OR girl OR boys OR boy OR children OR child OR infant OR infants OR adult OR adults OR consumer OR consumers OR patient OR patients OR volunteer OR volunteers OR clinical OR clinically OR cohort OR cohorts OR resident OR residents OR biomedical OR medical OR public OR occupational OR cytotoxic OR cytotoxicity OR cytotoxicities OR cytotoxin OR cytotoxins OR teratogenicity OR teratogenicities OR teratogen OR teratogens OR teratogenic OR carcinogen OR carcinogens OR carcinogenic OR carcinogenicity OR carcinogenicities OR neurotoxic OR neurotoxicity OR neurotoxicities OR neurotoxin OR neurotoxins OR nephrotoxicity OR nephrotoxicities OR nephrotoxic OR nephrotoxin OR nephrotoxins OR hepatotoxicity OR hepatotoxicities OR hepatotoxin OR hepatotoxins OR hepatotoxic OR genotoxicity OR genotoxicities OR genotoxic OR genotoxin OR genotoxins OR cancer OR cancers OR review OR reviews OR reviewed OR NOAEL OR NOAELs OR LOAEL OR LOAELs OR NOEL OR NOELs OR LOEL OR LOELs OR TDI OR TDIs OR NOEC OR NOECs OR "threshold limit value" OR "threshold limit values" OR TLV OR TLVs OR "LC 50" OR "LC-50" OR "EC 50" OR "EC-50" OR "LD 50" OR "LD-50" OR "ED 50" OR "ED-50" OR "IC 50" OR "IC-50" OR LC50 OR LC50s OR LD50 OR LD50s OR EC50 OR EC50s OR ED50 OR ED50s OR IC50 OR IC50s OR "time-weighted average" OR "time-weighted averages" OR "time weighted average" OR "time weighted averages" OR TWA OR TWAs OR "provisional tolerable weekly intake" OR "provisional tolerable weekly intakes" OR PTWI OR PTWIs OR NOAEC OR NOAECs OR "occupational exposure limit" OR "occupational exposure limits" OR OEL OR OELs OR PEL OR PELs OR "effect level" OR "effect levels" OR "daily intake" OR "daily intakes" OR "effective dose" OR "effective doses" OR "tolerable dose" OR "tolerable doses" OR "lethal dose" OR "lethal doses" OR "threshold dose" OR "threshold doses" OR "effect concentration" OR "effect concentrations" OR "inhibitory concentration" OR "inhibitory concentrations" OR "permissible exposure level" OR "permissible exposure levels" OR "ground-level concentration" OR "ground-level concentrations" OR "ground level concentration" OR "ground level concentrations" OR GLC OR GLCs OR bioaccumulation OR bio-accumulation OR bio-accumulative OR bioaccumulative OR accumulation OR intake OR consumption)) OR ("Heading/adverse effects"[Mesh:NoExp] OR "Heading/poisoning"[Mesh:NoExp] OR "Heading/toxicity"[Mesh:NoExp]) NOT nanoparticle)

3. Substance Sustainability data group metasearch queries:

Sustainability information

Metaquery 3.1 (sustainability) minimum top 100 weighted studies reviewed:

("substance name" OR "synonym 1" OR "synonym 2") AND (ecotoxicology OR ecotoxicological OR ecotoxicity OR ecotoxicities OR toxicity OR toxicities OR pollution OR pollutant OR pollutants OR exposure OR exposures OR sustainability OR sustainabilities OR sustainable OR sustainably) AND (accumulation OR aquatic OR atmosphere OR atmospheric OR bioaccumulation OR bio-accumulation OR biodegradable OR biodegradation OR biodegrade OR bio-degradable OR bio-degradation OR bio-degrade OR bio-indicator OR bioindicator OR bio-monitor OR bio-monitoring OR biomonitor OR biomonitoring OR biodiversity OR consumption OR contamination OR decontamination OR discharge OR discharges OR discharged OR disposal OR ecological OR ecology OR ecosystem OR emission OR emissions OR environmental OR freshwater OR "indicator species" OR lake OR lakes OR life-cycle OR "life cycle" OR marine OR "model system" OR ocean OR oceans OR recovery OR recovered OR recycled OR recycling OR recycle OR recyclable OR resource OR resources OR river OR sea OR seas OR soil OR trophic OR troposphere OR tropospheric OR waste OR wastes OR waste-water OR wastewaters OR wastewater OR wastewaters OR "Environment"[Mesh]) NOT nanoparticle

4. Substance Nanoparticle formation data group meta-search queries:

Nanoparticle occurrence

Metaquery 4.1 (nanoparticles) minimum top 50 weighted studies reviewed:

("substance name" OR "synonym 1" OR "synonym 2") AND (nanoparticle OR nanoparticles OR nanomaterial OR nanomaterials OR nanoscale OR nanosize OR nanosized OR nano OR ultrafine OR dust OR dusts OR aerosol OR NP OR NPs OR nanometric OR nanotube OR nanotubes OR "fly ash" OR "particle size" OR "particle diameter" OR "size distribution") AND (incidental OR "naturally occurring" OR anthropogenic OR natural OR emission OR emissions OR emitted OR source OR sources OR disposal OR anthropogenic OR by-product OR by-products OR byproduct OR byproducts)