

# Nanoparticle Storage and Handling Procedures

DO NOT FREEZE

## STORAGE & DRY REDISPERSION CONDITIONS

	Storage temperatures, recommended (acceptable)	Light exposure	Dry redispersion technique	Dry redispersion solvents	Expected shelf life
Silica	Room temperature	OK	Bath sonicate 5–10 min	Water or ethanol	> 1 year
Silica – Aminated	Room temperature	OK	Bath sonicate 5–10 min	Low pH buffer or ethanol	> 1 year
Gold (Spheres/Nanoshells/Rods)	2–8°C (2–25°C)	OK	Vortex or bath sonicate 30–60 seconds if needed	See below	> 1 year
Silica Shelled Gold	2–8°C (2–25°C)	OK	N/A	N/A	6 months to > 1 year
Platinum	2–8°C (2–25°C)	OK	N/A	N/A	> 1 year
Silver (Spheres/Plates/Cubes)	2–8°C	<i>Minimize</i>	Vortex or bath sonicate 30–60 seconds if needed	See below	2 months to > 1 year*
Silica Coated Silver	2–8°C	<i>Minimize</i>	N/A	N/A	6 months to > 1 year
Magnetite/TiO <sub>2</sub> Nanorods	2–25°C	OK	Vortex or bath sonicate 30–60 seconds if needed	Water	> 1 year
Dry Powders	2–25°C, in a dry place	<i>Minimize</i>	See below	See below	> 1 year

\* Expected shelf life of silver spheres depends on size & surface. For more info on < 40 nm silver with PVP see [nanocomposix.com/small-pvp-silver](http://nanocomposix.com/small-pvp-silver).

## QUALITY CONTROL

When stored as recommended, most nanoparticles are stable for 6 months to > 1 year. **Be sure to visually inspect your materials before each use.** If there are any visible particulates floating in the solution, if the color of the solution has changed, or if the color intensity has decreased, the nanoparticles may have aggregated. These materials should be analyzed via UV-Visible spectroscopy, DLS, or TEM for quality verification.

*Do not freeze.* If frozen, the nanoparticles will irreversibly aggregate and the solution color may change.

*Keep silver nanoparticles away from light.* Light exposure for silver can contribute to instability and accelerated ion release. Please visit: [nanocomposix.com/gold-aggregation](http://nanocomposix.com/gold-aggregation) or [nanocomposix.com/silver-aggregation](http://nanocomposix.com/silver-aggregation) for more details.

## HANDLING NANOPARTICLE COLLOIDS

*Shake each bottle prior to use.* During storage the nanoparticles may settle to the bottom of the vial. Prior to aliquoting or use, resuspend the settled nanoparticles by vigorously shaking the bottle until the solution is homogenous. This will typically require ~30 seconds of mixing. Visually inspect the bottom of the container to ensure that there are no remaining settled particles. Visit [nanocomposix.com/sh-supplement](http://nanocomposix.com/sh-supplement) for more details.

## HANDLING DRY NANOPOWDERS

Storage away from excess moisture and humidity is recommended until the materials are ready for use or redispersion. Certain nanopowders are sealed under vacuum to limit exposure to air and moisture before use. Visit [nanocomposix.com/sh-supplement](http://nanocomposix.com/sh-supplement) for more details on handling and redispersing nanopowders.

For a list of appropriate solvents in which to redisperse dry powders, visit [nanocomposix.com/solvent-pvp](http://nanocomposix.com/solvent-pvp) or [nanocomposix.com/solvent-alkanethiol](http://nanocomposix.com/solvent-alkanethiol).

## QUESTIONS?

Please visit our Knowledge Base at [nanocomposix.com/knowledge-base](http://nanocomposix.com/knowledge-base) for more information, including Frequently Asked Questions and detailed storage, handling, and quality control procedures. If you have any questions, please don't hesitate to contact us by email at [info@nanocomposix.com](mailto:info@nanocomposix.com), or by phone at (858) 565-4227.