TECHNICAL DATA SHEET

SWCNT Pre-Dispersion for Thermosetting Systems

Product code: CTISO-01

Revision 2026-09

Description

CTISO-01 disperses single-walled carbon nanotubes uniformly and efficiently in solvent-free epoxy and other thermosetting systems (epoxy, polyurethane), rapidly forming a stable, dense conductive network. At ultra-low dosage it imparts efficient, durable antistatic properties with minimal impact on the base resin's mechanical properties and chemical resistance, avoiding the performance degradation and substrate damage of conventional conductive fillers. Formulated to minimize free carbon particle release over the product's service life. Base SWCNT feedstock: 1–2 nm outer diameter, ≥98% purity by TGA (see CTI powder TDS for full grade specification).

Core Features

- Excellent adaptability: no significant modification of formulations or processing equipment.
- Low addition, high cost-effectiveness: extremely low dosage that does not significantly raise system viscosity.
- Environmental protection with low precipitation: formulated to minimize free carbon particle release throughout service life.
- Long-lasting antistatic effect: permanently reduces surface and volume resistivity of epoxy, polyurethane and similar resins.

Application Example (D.E.R. 351 pure resin, no other additives)

CTISO-01 addition (%)	Net SWCNT (%)	Sheet resistance (Ω)
0.1–0.5	0.01–0.05	10^5–10^6
0.5–1.0	0.05–0.1	10^4–10^5
1.0–2.0	0.1–0.2	10^3–10^4

Addition amounts calculated on total resin weight including curing agent; dispersed with a 50 mm dispersion disc at 3800 rpm for 20 minutes.

Recommended Evaluation

- Initial screen at 0.05%, 0.10% and 0.15% net SWCNT of total resin weight to map the effect on each performance indicator.
- Optimal dosage: confirm with repeated multi-batch trials, since dosage and efficacy depend on formulation, raw-material type and temperature.

Applicable Scenarios

Antistatic flooring, electronic packaging materials, aviation and aerospace precision components, explosion-proof equipment, high-performance composite structural parts, conductive gelcoats and other industrial applications with stringent antistatic requirements.

Ordering, Packaging & Documentation

- Available from evaluation quantities through multi-ton annual supply agreements; ISO 9001 certified production.
- Each lot ships with a representative Certificate of Analysis; Raman, TGA, SEM/TEM data available on request.

All values are representative of typical production and do not constitute a lot-specific guarantee. Certificates of analysis accompany each shipment.

- Safety Data Sheet available at cheaptubes.com/nanomaterial-msds-safety-sheets.

Values are typical unless stated as limits. Application results depend on formulation, equipment and process conditions; confirm with your own trials. Cheap Tubes Inc. makes no warranty of fitness for a particular purpose beyond the published specification.

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