TECHNICAL DATA SHEET

SWCNT Pre-Dispersion for Addition-Cure Silicones (Vinyl-Terminated PDMS Carrier)

Product code: CTIRS-02

Revision 2026-11

Description

CTIRS-02 is a 10 wt% SWCNT paste in a vinyl-terminated PDMS carrier (about 5,000 g/mol) for platinum-cure LSR and RTV-2 systems. The carrier cures into the network. It uses the same SWCNT and dispersion as CTIRS-01. At extremely low addition it gives silicone rubber excellent electrical properties while minimizing impact on mechanical properties and allowing flexible multi-color formulation: a permanent antistatic alternative to carbon-black-loaded black silicone. At additions above 2 to 3 wt% paste, a small increase in crosslinker may be needed to hold the hydride/vinyl ratio.

Core Characteristics

- No significant changes to existing formulations or production equipment; convenient to implement.
- Extremely low addition with minimal effect on mechanical properties; supports multi-color coloring.
- Significantly and permanently reduces surface and volume resistivity.

Technical Parameters

Property	Specification
Appearance	Black paste
SWCNT content	10.0 wt%
Carrier	Vinyl-terminated polydimethylsiloxane, about 5,000 g/mol
Flash point and density	See representative CoA

Application Examples (LSR, Shore 30) (Representative Data)

LSR system	CTIRS-02 addition (%)	Net SWCNT (%)	Surface resistance (Ω)
10,000 mPa·s	0.3–0.5	0.03–0.05	10^{7}–10^{9}
10,000 mPa·s	0.5–2.0	0.05–0.2	10^{5}–10^{7}
10,000 mPa·s	2.0–5.0	0.2–0.5	10^{3}–10^{5}
300,000 mPa·s	0.5–1.0	0.05–0.1	10^{7}–10^{12}
300,000 mPa·s	1.0–2.0	0.1–0.2	10^{4}–10^{7}
300,000 mPa·s	2.0–5.0	0.2–0.5	10^{3}–10^{4}

Dispersion Instructions

- 10,000 mPa·s systems, addition <1%: 50 mm dispersion disc at 1600 rpm for 20 min.
- 10,000 mPa·s systems with addition >1%, and all 300,000 mPa·s systems: five passes on a three-roll mill.

Recommended Evaluation

- Initial screen at 0.3%, 0.5% and 1.0% by total weight; calibrate final dosage with repeated multi-batch trials.

Applicable Scenarios

Aerospace components, consumer electronics, semiconductor handling, medical devices, photovoltaic and new-energy equipment, automotive electronics, precision optics and chemical explosion-proof applications.

Ordering, Packaging & Documentation

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

All values are representative of typical production and do not constitute a lot-specific guarantee. A representative Certificate of Analysis is available on request.

- 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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