TECHNICAL DATA SHEET

SWCNT Pre-Dispersion for Silicone Elastomer Modification

Product code: CTIRS-01

Revision 2026-09

Description

CTIRS-01 is a 10 wt% SWCNT paste for LSR, RTV and similar silicone systems. 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.

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%
Flash point	290 °C
Density	~0.991 g/cm³

Application Examples (LSR, Shore 30)

LSR system	CTIRS-01 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.
- 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.