

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. Base SWCNT feedstock: 1–2 nm outer diameter, ≥98% purity by TGA (see CTI powder TDS for full grade specification).

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/cm ³

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

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.
- 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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