

Material Safety Data Sheet: IsoNanotubes–M, IsoNanotubes–S, PureTubes and Graphene

Section 1: Product and Company Identification	
Product:	IsoNanotubes–M, IsoNanotubes–S, PureTubes, Graphene
Description:	Single-walled carbon nanotubes in aqueous surfactant solution or thick film powder
Manufacturer:	NanoIntegris
Address:	8025 Lamon Ave, Suite 43 Skokie, IL 60077
Emergency contact:	216-314-0106
General contact:	216-314-0106
Date prepared:	January 23, 2009
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Section 2: Information on Ingredients				
COMPONENT	CAS NUMBER	OSHA PEL	ACGIH TLV	% (WEIGHT)
Water	7732-18-5	None established	None established	> 99%
Carbon nanotubes	7782-42-5	15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable fraction)	2 mg/m ³ TWA	< 1%
Surfactant	N/A	None established	None established	< 1%
Density medium	N/A	None established	None established	< 1%

Section 3: Physical and Chemical Characteristics	
Boiling point	> 100 °C
Vapor pressure (mm Hg)	N/A
Vapor density (air = 1)	N/A
Solubility in water	Complete
Appearance and odor	Solutions: IsoNanotubes–M (Green) IsoNanotubes–S (Pink) PureTubes (Gray) Graphene (Gray) Powders: : IsoNanotubes–M (Black) IsoNanotubes–S (Black) PureTubes (Black) Graphene (Black)
Specific gravity (H ₂ O = 1)	~1
Melting point	< 0 °C

Evaporation rate (butyl acetate = 1)	Not established
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Section 4: Fire and Explosion Hazard Data

Flash point	N/A
Extinguishing media	Use extinguishing media appropriate for any combustible in the surrounding area.
Special fire-fighting procedures	Wear full protective clothing and a NIOSH-approved self-contained breathing apparatus (SCBA) operating in pressure-demand or positive-pressure mode.
Unusual fire and explosion hazards	Sealed container may rupture when heated.

Section 5: Reactivity Data

Stability	Stable under ordinary conditions of use and storage.
Conditions to avoid	Do not expose to extreme heat or cold.
Incompatibility (materials to avoid)	Strong oxidizing or reducing agents, strong acids or bases, mineral acids.
Hazardous decomposition	Carbon monoxide, carbon dioxide.
Hazardous polymerization	Will not occur.

Section 6: Health Hazards

Inhalation	Water may cause death by drowning. Particulates may cause irritation of the respiratory tract.
Skin contact	May cause dermatitis.
Eye contact	May cause irritation, redness, and pain. Corneal injury may occur.
Ingestion	May cause gastrointestinal irritation, nausea, and vomiting.
Carcinogenicity	Not established.
Medical conditions generally aggravated by exposure	No information available.
Emergency and first aid procedures	<p>Inhalation. Remove source of contamination and move victim to fresh air. If breathing has stopped, give artificial respiration.</p> <p>Eye Contact. Flush eyes thoroughly with water.</p> <p>Skin Contact. Wash skin thoroughly with soap and water.</p> <p>Ingestion. Drink large quantities of water. Do not induce vomiting unless instructed by a physician.</p>

Section 7: Precautions for Safe Handling and Use

Steps to be taken in case Product is released or spilled. Clean area thoroughly with sponge or mop. Wash exposed surfaces with soap and water.

Waste disposal method. Follow applicable Federal, state, and local regulations. A qualified environmental professional should determine waste characterization, disposal, and treatment methods.

Handling precautions. Minimize breathing of vapors and avoid prolonged or repeated contact with skin. Wear proper protective equipment. If ventilation is not sufficient, wear proper respiratory equipment.

Storage precautions. Store in cool, dry, well-ventilated area away from all sources of ignition. "Empty" containers retain Product residue and can be hazardous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.

Section 8: Control Measures

Respiratory protection. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning: air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Ventilation. Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Section 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Protective clothing/equipment. Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with, contact lenses.

Contaminated equipment. Separate contaminated work clothes from street clothes. Launder before reuse. Remove this Product from shoes and clean personal protective equipment.

Safety stations. Make emergency eyewash stations, safety showers, and washing facilities available in work area.

Work/hygiene practices. Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this Product, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9: Disclaimer

This Product is experimental in nature, may have hazardous properties, and is provided "as is." The information contained in this Material Safety Data Sheet is considered accurate as of the version date. However, no warranty is expressed or implied regarding the accuracy of the data. Since the use of this Product is not within the control of NanoIntegris, it is the user's obligation to determine the suitability of the Product for its intended application. The user also assumes all risk and liability for safe use of the Product.