

SAFETY DATA SHEET

Product: TCF-30 Silver Nanowire Solution

(1) PRODUCT AND COMPANY IDENTIFICATION

Product Description: TCF-30 Silver Nanowire Solution

Product Use: Laboratory Reagent.

Manufacturer: NanoIntegriss Technologies, Inc.,
c/o Raymor Industries Inc.
3765 La Vérendrye
Boisbriand, Quebec, J7H 1R8
CANADA
Phone No.: +1 450.434.6266

Emergency Telephone: 1-888-CANUTEC (226-8832) (North American use) and/or
1-613-996-6666 (International use)

(2) HAZARDS IDENTIFICATION

Eye Contact:	May cause slight irritation or blue-gray eyes.
Skin Contact	May cause skin irritation or ulceration, dry skin, chapped.
Inhalation:	May be harmful if inhaled. Material may be irritating to nasal septum, throat, mucous membranes and upper respiratory tract.
Ingestion:	May be harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Chronic Exposure:	Absorption of silver compound by ingestion, inhalation or through broken skin can cause argyria, a permanent bluish-gray discoloration of the skin, conjunctiva and mucous membranes.

(3) COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NUMBER</u>	<u>WEIGHT PERCENT</u>
Silver	7440-22-4	1-1.2%
Water	7732-18-5	90-95%
Ethanol	64-17-5	0.9-3.8%

(4) FIRST AID MEASURES

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<u>Eye contact:</u>	Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops.
<u>Skin contact:</u>	Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If symptoms persist, call a physician.
<u>Inhalation:</u>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, call a physician.
<u>Ingestion:</u>	Drink plenty of water. Consult a physician if necessary. Do not induce vomiting without medical advice.

(5) FIRE-FIGHTING MEASURES

<u>Extinguishing Media:</u>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Hazardous decomposition products:</u>	None reasonably foreseeable.
<u>Special Protective Equipment for Firefighters:</u>	As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.
<u>Unusual Hazards:</u>	None known.

(6) ACCIDENTAL RELEASE MEASURES

<u>Personal Precautions:</u>	Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Use personal protective equipment.
<u>Environmental Precautions:</u>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.
<u>Methods for cleaning up:</u>	Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose of promptly. Clean contaminated surface thoroughly.

(7) HANDLING AND STORAGE

<u>Handling:</u>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing.
<u>Storage:</u>	Keep container tightly closed in a dry and well-ventilated place.
<u>Waste Disposal Method:</u>	Follow applicable Federal, state, and local regulations.

(8) EXPOSURE CONTROLS/PERSONAL PROTECTION

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<u>Exposure limits:</u>	- OSHA Permissible Exposure Limit (PEL) 0.01 mg/m ³ (TWA) - NIOSH Recommended Exposure Level (REL) 0.01 mg/m ³ (TWA) - NIOSH Immediately Dangerous to Life or Health Concentration (IDLH) 10mg/m ³ - ACGIH Threshold Limit Value (TLV) 0.1 mg/m ³ (TWA)
<u>Ventilation System:</u>	A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area.
<u>Skin and body Protection:</u>	Wear impervious protective clothing including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wash thoroughly after handling. Maintain quick-drench facilities in work area.
<u>Eye Protection:</u>	Use chemical safety goggles and/or full face shield where dusting or splashing of solution is possible. Maintain eye wash fountain in work area.

(9) PHYSICAL AND CHEMICAL PROPERTIES

Form:	Gray suspension.
Color:	Gray.
Odor:	Irritating odour.
Boiling Point/Boiling Range:	100 °C (212)
Evaporation Rate:	Not available.
Viscosity:	Not available.
Decomposition Temperature:	Not available.
Lower:	Not available.
Vapor Density (Air=1)	Not available.
Vapor pressure:	Not available.
PH:	Not available.
Molecular Weight:	07 AMU
Theoretical Density:	Not available.
Solubility in / miscibility with water:	Soluble in water.

(10) STABILITY AND REACTIVITY

<u>Stability:</u>	Stable at normal conditions.
Materials to avoid:	Acetylene, ammonia, strong hydrogen peroxide solutions, strong acids, oxalic acid, tartaric acid, bromoazide, chlorine trifluoride, and ethyleneimine.

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Hazardous Polymerization:	Will not occur.
Dangerous products of decomposition:	Metal oxide fume.

(11) TOXICOLOGICAL INFORMATION (Ethanol)

NTP Know Carcinogen:	No.
NTP Anticipated Carcinogen:	No.
IARC Category:	None.

(12) ECOLOGICAL INFORMATION (Ethanol)

General notes:	This substance may be hazardous to the environment, special attention should be given to aquatic organisms.
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(13) DISPOSAL CONSIDERATIONS

Waste from residues/unused products:	Waste must be disposed of in accordance with federal, state and local environmental control regulations. Where possible recycling is preferred to disposal or incineration.
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(14) TRANSPORT INFORMATION

DOT Proper shipping name:	Not regulated.
TDG (Canada) Proper shipping name:	Not regulated.

(15) REGULATORY INFORMATION

Federal and State:	
Rhode Island RTK hazardous substances:	Silver.
Pennsylvania RTK:	Silver.
Minnesota:	Silver.
Massachusetts RTK:	Silver.
New Jersey:	Silver.
TSCA 8 (b) inventory:	Silver.
TSCA 8 (a) PAIR:	Silver.
TSCA 8(d) H and S data reporting:	Silver.
SARA 313 toxic chemical notification and release reporting:	Silver: 1%
CERCLA:	Hazardous substances: Silver: 1000 lbs. (453.6 kg)

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Other Regulations:	
OSHA:	Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS:	This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:	
WHMIS (Canada):	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).
DSCL (EEC):	R41- Risk of serious damage to eyes.
HMIS (U.S.A.):	Health Hazard: 2 Fire Hazard: 1 Reactivity: 0 Personal Protection: j
National Fire Protection Association (U.S.A.):	Health: 2 Flammability: 1 Reactivity: 0 Specific hazard: 0
Protective Equipment:	Not applicable. Lab coat. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

(16) OTHER INFORMATION

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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