1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: TCF-30 Silver Nanowire Solution
Company: NanoIntegris Technologies Inc.
Address: 3765 La Verendrye, Boisbriand, QC J7H 1R8, Canada
TEL: 866-650-0482

2. COMPOSITION/INFORMATION OF INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Weight%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>1-1.2%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>90-95%</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>9-3.8%</td>
</tr>
</tbody>
</table>

3. 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.

4. FIRST AID MEASURES

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

5. FIRE-FIGHTING MEASURES

Flash point: Non combustible
Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Hazardous decomposition products: None reasonably foreseeable.
Special protective equipment: As in any fire, wear self-contained breathing apparatus.
firefighters: apparatus pressure-demand, NIOSH
(approved or equivalent) and full protective
gear.

Unusual hazards: None known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate area of all unnecessary personnel. Avoid contact with skin,
eyes and clothing. Use personal protective equipment.

Environmental precautions: 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.

Methods for cleaning up: 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

Handling: Handle in accordance with good industrial hygiene and safety
practice. Avoid contact with skin, eyes and clothing.

Storage: Keep container tightly closed in a dry and well-ventilated place.

Handling: Handle in accordance with good industrial hygiene and safety
practice. Avoid contact with skin, eyes and clothing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits: - OSHA Permissible Exposure Limit (PEL) 0.01 mg/m³ (TWA)
- NIOSH Recommended Exposure Level (REL) 0.01 mg/m³ (TWA)
- NIOSH Immediately Dangerous to Life or Health Concentration (IDLH)
  10 mg/m³
- ACGIH Threshold Limit Value (TLV) 0.1 mg/m³ (TWA)

Ventilation System: 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.

Skin and body protection 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.

Eye protection 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 PROPERITIES

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
Stability: Stable at normal conditions.
Materials to avoid: Acetylene, ammonia, strong hydrogen peroxide solutions, strong acids, oxalic acid, tartaric acid, bromoazole, chlorine trifluoride, and ethyleneimine.
Dangerous products of decomposition: Metal oxide fume.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION
NTP Know Carcinogen: No.
NTP Anticipated Carcinogen: No
IARC Category: None

12. ECOLOGICAL INFORMATION
General notes: This substance may be hazardous to the environment; special attention should be given to aquatic organisms.

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.

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)

Other Regulations
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.

Label Precautions:
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Avoid breathing dust or vapors.
Keep container closed.
Use only with adequate ventilation.

**Label First Aid:**
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, seek medical attention.

**Product Use:** Laboratory Reagent.