


1. Chemical Product and Company Identification

Trade Name: NYACOL® SN902W
Chemical Name: Tin Antimony Cassiterite
Synonyms: Tin Oxide
Product Code: SN902W
Use: Catalysts, ceramics, and PET
Manufacturer: Nyacol Nano Technologies, Inc.
Megunko Road, P.O. Box 349, Ashland, MA 01721 U.S.A.
508-881-2220
Emergency Telephone: CHEMTREC: 1-800-424-9300
E-mail Contact: info@nyacol.com

2. Composition/Information on Ingredients

<u>Component</u>	<u>CAS #</u>	<u>Exposure Limits</u>	<u>Percent By Weight</u>
Tin Antimony Cassiterite:	68187-54-2	2 mg/M ³ as tin	20
Water:	7732-18-5	None.	80
<u>Component</u>	<u>EINECS #</u>	<u>RTECS #</u>	<u>REACH #</u>
Tin Antimony Cassiterite:	269-105-9	N/A	05-2117294628-27-0000
Water:	231-791-2	ZC011000	None.

3. Hazard Identification

Emergency Overview: Transparent dark blue liquid. Harmful. Keep spills out of surface waters.
Classification: Xn – Harmful.
Symbol:  St. Andrew's Cross
Risk Phrases: Harmful if swallowed.
Safety Phrases: Keep out of reach of children.

Potential Health Effects / Health Hazard Identification

Acute Exposure:

Eye: Irritation.
Skin: Irritation, drying or cracking of skin due to drying effect.
Ingestion: Drink plenty of water.
Inhalation: Not available.
Chronic Exposure: Chronic inhalation of tin oxide dust may induce stannosis, a benign form of pneumoconiosis.

Other Hazards

Known Synergists: None known.
Explosion Hazard: None known.
Fire Hazard: This material will not burn in a fire.
Corrosion Hazard: None known.

4. First Aid Measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of the eye and lids with water. Get medical attention.
Skin Contact: Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

CONTINUED →

4. First Aid Measures, continued

Ingestion:	Give large quantities of water. Consult medical professional. Never give anything by mouth to an unconscious person.
Inhalation:	If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.
First Aid Facilities:	Eye wash station.
Advice to Physicians:	Tin oxide (stannic oxide) has a very low order of toxicity. Colloidal tin oxide has been used as a hepatolienographic agent by intra-venous injection in rabbits and dogs without reaction or obvious harm, see <u>The American Journal of Roentgenology, Radium Ther-apy and Nuclear Medicine</u> , Vol. LXXVII, No. 1, January, 1957, "A New Hepatolienographic Agent: Tin Oxide", Harry W. Fischer, M.D. For a general overview see <u>Toxicological Profile for Tin</u> , U.S. Department of Health and Human Services; PB93-110864.

5. Firefighting Measures

Flammability:	Material will not burn in a fire. Containers can build pressure if exposed to heat or fire.
Extinguishing Media:	All are acceptable. Cool container with water spray.
Protective Equipment:	Wear standard full firefighter turn-out gear (full bunker gear) and respiratory protection (SCBA).
Special Exposure Hazard:	None known.

6. Accidental Release Measures

Leaks and Spills:	Contain leak or spill with sand, clay or absorbents. Recover liquid for recycle or disposal. Do not allow spills into sewers or surface waters. Place absorbents, waste products and contaminated soil into containers for disposal.
Personal Protection:	Emergency responders should wear eye protection and impervious gloves. An approved air-purifying respirator should be worn if dust or mist is present. See Section 8.

7. Handling and Storage

Handling:	Avoid generating mist or dust during use.
Storage:	Store in cool dry area. Do not freeze.

8. Exposure Controls / Personal Protection

Engineering Control:	Ventilation adequate to meet occupational exposure limits.
Respiratory Protection:	When respiratory protection required or concentrations unknown, use approved air-purifying respirator equipped with dust cartridge.
Skin Protection:	Wear clean body-covering clothing and impervious gloves such as neoprene.
Eye Protection:	Goggles or face shield recommended to prevent eye contact.

9. Physical and Chemical Properties

Appearance:	Dark blue liquid
Odor:	None.
Physical State:	Liquid
pH:	8
Boiling Point:	100°C (212°F)
Freezing Point:	0°C (32°F)
Flash Point:	None.

CONTINUED →

9. Physical and Chemical Properties, continued

Vapor Pressure:	2260 kPs (17 mm Hg) at 20°C
Oxidizing Properties:	Not an oxidizer.
Solubility in Water:	Soluble in all proportions
Density:	1100 kg/M ³
Specific Gravity:	1.1
Volatile by Weight:	90
Viscosity:	<20 cP
Explosion Limits:	Not applicable.
Partition Coefficient:	Not available.
Evaporation Rate:	Slow (Butyl Acetate = 1)

10. Stability and Reactivity

Chemical Stability:	Stable.
Conditions To Avoid:	None known.
Incompatibility With Other Materials:	Substances which may lead to the formation of volatile hydrides or halides of organic tin compounds.
Hazardous Decomposition Products:	None known.
Hazardous Polymerization:	Will not occur.

11. Toxicological Information

<u>Material</u>	<u>LD₅₀, Rat, Oral</u>
Tin Oxide	None reported.
Water	None reported.
Eye Effects:	No published data available. Should be irritating based on pH.
Skin Effects:	No published data available. Dry skin has been reported.
Inhalation Effects:	Published reports claim respiratory irritation from stannic oxide.
Ingestion Effects:	See Section 3.

12. Ecological Information

Ecotoxicity:	No data available.
Persistence:	Tin is generally regarded as being relatively immobile in the environment (WHO1980).

13. Disposal Considerations

Disposal Considerations:	SN902W should be recycled or solidified for disposal in a landfill.
United States:	Not a regulated waste.

14. Transport Information

United Nations Number:	Not applicable, does not meet dangerous goods criteria.
ADR / RID Class:	Not applicable, does not meet dangerous goods criteria.
Packing Group:	Not applicable, does not meet dangerous goods criteria.
IMDG Code:	Not applicable, does not meet dangerous goods criteria.
ICAO / IATA:	Not applicable, does not meet dangerous goods criteria.
IMO Shipping Name:	Not applicable, does not meet dangerous goods criteria.
IATA Shipping Name:	Not applicable, does not meet dangerous goods criteria.
ADR Shipping Name:	Not applicable, does not meet dangerous goods criteria.
RID Shipping Name:	Not applicable, does not meet dangerous goods criteria.

15. Regulatory Information

U.S. Federal Regulations

EPA TSCA Inventory: All ingredients listed.

SARA Section 313: No ingredients listed.

and CERCLA 102 (A):

<u>Chemical Name</u>	<u>CAS RN</u>	<u>Percent By Weight</u>
---	---	---

U.S. D.O.T. Regulations: See Section 14.

U.S. State Regulations

California Proposition 65: No ingredients listed.

State Right-to-Know Laws: Section 2 of this MSDS lists all components of SN902W.

Canadian Regulations

Domestic Substance List: All ingredients listed.

WHMIS: Class D, Division 2, material causing other toxic effects.

Transportation of Dangerous Goods: Not applicable. SN902W does not meet dangerous goods criteria.

Controlled Products

Regulations: This MSDS contains all the information items specified in Schedule 1, Column 3 of the Controlled Products Regulations in a 16-heading format.

EC Regulations

Classification: Xn – Harmful.

Symbol:  St. Andrew's Cross

Risk Phrases: Harmful if swallowed.

Safety Phrases: Keep out of reach of children.

16. Other Information

NFPA 704 Hazard Rating: Health – 0, Flammability – 0, Reactivity – 0, Special – None

HMIS® Hazard Rating: Health – 0, Flammability – 0, Reactivity – 0
Protective Equipment – E; safety glasses, gloves, dust respirator

Recommended Use: Recommended for use as a catalyst, in ceramics and in PET. Other uses have not been investigated and may have other hazards. For industrial use only, not for food, drug or home use.

Work Alert: Workers using SN902W should read and understand this MSDS and be trained in the proper use of this material.

MSDS Prepared By: David L. Catone
Technical Service & Product Development Manager
R&D Department
Nyacol Nano Technologies, Inc.
Telephone: 508-881-2220 (U.S.A.)

Revision Date: May 9, 2011

Supersedes: None

This MSDS has been prepared with data from Nyacol Nano Technologies, Inc.'s laboratories, raw material suppliers, and government publications.

Information herein is accurate to the best of our knowledge. Suggestions are made without warranty or guarantee of results. Before using, the user should determine the suitability of the products for the intended use, and the user assumes the risk and liability in connection therewith. We do not suggest violation of any existing patents or give permission to practice any patented invention without license.

NYACOL® is a registered trademark of Nyacol Nano Technologies, Inc.