Section 1: Product and Company Identification:

1.1 Product Identifier

Product Form:	Mixture
Identification of Substance:	Tin Antimony Gray Cassiterite
Product Name:	NYACOL® SN903W
Synonym:	Antimony tin oxide, tin antimony oxide
CAS Number:	68187-54-2
Index Number:	Not available.
EINECS Number:	269-105-9
REACH Registration Number:	05-2117294628-27-0000
Formula:	Sb_xSnO_2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use:	Catalyst. Ceramics. Polymer additive.
Restrictions on Use:	For industrial use only, not for food, drug or home use.

1.3 Details of the supplier of the safety data sheet

Company Identification:	Nyacol Nano Technologies, Incorporated Megunko Road, P.O. Box 349, Ashland, MA 01721 U.S.A. 508-881-2220
Email Contact:	info@nyacol.com
Internet:	www.nyacol.com

1.4 Emergency telephone number

In Case of Emergency:	USA/Canada CHEMTREC: +1 (703) 527-3887 International CHEMTREC: +1 (703) 741-5970 24 Hours/Day: 7 Days/Week

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not classified.

Classification according to Regulation (EC) No. 1272/2008 (CLP)

Not classified.

2.2 Label Elements - Labelling according to Regulation (EC) No. 1272/2008

Not labelled.

Signal Word: Not applicable.

Hazard Pictogram: Not applicable.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

2.3 Other Hazards

Components do not meet the criteria for a PBT or vPvB substance.

2.4 Unknown acute toxicity (GHS US)

No further relevant information available.

Section 3: Composition / Information on Ingredients

Description: Mixture consisting of the following components.

Component Name:	Product Identifier	GHS Classification	Percent By Weight

Tin Antimony Gray Cassiterite:	CAS: 68187-54-2 EINECS: 269-105-9 Index: Not available	Not classified	20%
Anionic surfactant	Trade secret	H315: Causes skin irritation. H319: Causes serious eye irritation	<3%
Water	CAS: 7732-18-5 EINECS: 231-791-2 Index: Not available	Not classified	70-80%

Impurities: Present at a level below that to be taken into account for classification.

Stabilizing Additives: None

The supplier currently has no knowledge on additional ingredients that are classified and that contribute to the classification of this substance.

See Section 16 for a list of hazards if identified above.

Section 4: First-Aid Measures

4.1 Description of 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. Do not allow victim to rub eyes or keep eyes closed. 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.

Inhalation: Remove person from exposure source and to fresh air. Get medical attention immediately. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen.

Ingestion: If a person is conscious and can swallow, immediately give two glasses of water (16 oz. or 500 ml.) but do not induce vomiting. If vomiting occurs, give fluids again. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention.

First Aid Facilities: Eye wash station.

Advice to Physicians: No further relevant information available.

4.2 Most important symptoms and effects, both acute and delayed

Acute or delayed effects are not anticipated.

4.3 Indication of any immediate medical attention and special treatment needed.

Treat symptomatically.

Section 5: Fire-Fighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media: All are suitable. Use water spray, dry chemical, foam or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Flammability of the product: Material will not burn in a fire. Containers can build pressure if exposed to heat or fire.

Special Hazard Arising from the Chemical: No further relevant information available.

Fire Hazard: No further relevant information available.

Explosion Hazard	No further relevant information available.
Reactivity:	No further relevant information available.

5.3 Advice for firefighters

Special Protective Equipment for Fire-fighters:	Wear standard full firefighter turn-out gear (full bunker gear) and respiratory protection (SCBA).

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Eye protection and impervious gloves. An approved air-purifying respirator should be worn if vapor or mist is present.

6.1.1 For non-emergency personnel

Wear protective equipment. Keep unprotected persons away. Avoid contact with skin and eyes.

6.2 Environmental precautions

Prevent entry into sewers and waterways.

6.3 Methods and material for containment and cleaning up

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

6.4 Reference to other sections

For more information on exposure controls and personal protection or disposal considerations, check section 8 and 13 of this SDS.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Minimum feasible handling and temperatures should be maintained. Avoid generating mist or dust during use. Use only in well ventilated area.

7.1.1 Protective measures

Use only in well ventilated areas. As a precautionary measure, the wearing of standard work gear is suggested. An approved air-purifying respirator should be worn if dust or mist is present. Keep ignition sources away. Do not smoke.

7.1.2 Advice on general occupational hygiene

Avoid inhalation, ingestion and contact with eyes. General occupational hygiene measures are required to ensure a safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices), no eating, drinking and smoking at the workplace and wearing standard working clothes and shoes unless otherwise stated. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Shower and change clothes at end of work shift. Do not wear contaminated clothing at home.

7.2 Conditions for safe storage, including any incompatibilities

Keep from freezing. Provide sufficient ventilation at store and workrooms. Store in cool, dry area. Periods of exposure to high temperatures should be minimized.

7.3 Specific end use(s)

No further relevant information available. Refer to Section 1.2 of this SDS.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Tin Antimony Gray Cassiterite, CAS #68187-54-2

USA OSHA	OSHA PEL Ceiling (mg/m^3)	2 mg/m^3 as tin for tin oxide
USA OSHA	OSHA PEL Ceiling (mg/m^3)	0.5 mg/m^3 as tin for antimony oxide

8.2 Exposure Controls

Engineering Controls:	Ventilation adequate to meet occupational exposure limits.
Hygiene Measures:	Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Respiratory:	Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air-supplied respirators should always be worn when airborne concentrations of the contaminant or oxygen content is unknown.
Hands:	Wear impervious gloves such as neoprene.
Eyes:	Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.
Skin:	Wear clean body-covering clothing; impervious gloves such as neoprene. Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance (Physical State, Color):	Dark blue liquid.
Upper/lower flammability or explosive limits:	Not determined.
Volatile by Weight:	80%
Odor:	Odorless
Vapor Pressure:	17 mm Hg at 20°C
Odor Threshold:	Not determined.
Vapor Density:	Not determined.
pH:	6-7
Relative Density:	1220 kg/M^3
Melting point/freezing point:	Not determined.
Solubility in Water:	Not soluble.
Initial boiling point and boiling range:	100° C (212° F)
Flashpoint:	None
Evaporation Rate:	Slow (Butyl Acetate = 1)
Flammability (solid, gas):	Material will not burn in a fire.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	<20 cP
Specific Gravity:	1.22
Freezing Point:	0°C (32° F)
Explosion Limits:	Not applicable.
Oxidizing Properties:	Not an oxidizer.

9.2 Other information

No further relevant information available.

Section 10: Stability and Reactivity

10.1 Reactivity

No further relevant information available.

10.2 Chemical Stability

Stable.

10.3 Possibility of hazardous reactions

No further relevant information available.

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous decomposition products

Not determined.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

LD50, Rat, Oral Values for classification:

Tin oxide:	>2000 mg/kg
Antimony oxide:	>4000 mg/kg
Skin Contact:	Avoid contact with skin. Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling. Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact; see other effects and Section 11 for information regarding potential long term effects. Skin Effects: (Draize) Believed to be >0.50 - 1.00/80 (rabbit) slightly irritating.
Eye Contact:	Avoid contact with eyes. May cause irritation, experienced as mild discomfort and seen as slight excess redness of the eye. Eye Effects: (Draize) Believed to be 15.00 - 25.00/110 (rabbit) slightly irritating.
Inhalation:	Vapors or mist in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating the material or as from exposure in poorly ventilated areas or confined spaces may cause irritation of the nose and throat, headaches, nausea and drowsiness. Prolonged over-exposure may result in absorbance of potentially harmful amounts of material.
Sensitization:	No sensitizing effect known.
Chronic Effects:	Chronic inhalation of stannic oxide causes a benign form of pneumoconiosis known as stannosis.
Carcinogenicity	No data indicating any concern for carcinogenicity.

Section 12: Ecological Information

12.1 Aquatic Toxicity

No data available.

12.2 Persistence and degradability

Tin is generally regarded as being relatively immobile in the environment (WHO 1980).

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

Tin is generally regarded as being relatively immobile in the environment (WHO 1980).

12.5 Results of PBT and vPvB Assessment

Not data available.

12.6 Other adverse effects

None known.

Section 13: Disposal Considerations

This information presented only applies to the materials as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Disposal Considerations:	The product should be recycled or solidified for disposal in an approved landfill.
United States:	The product is not a RCRA regulated waste.

Section 14: Transport Information

The product is not restricted for transportation.

Sections 14.1 - 14.4

Regulations

U.S. D.O.T.: Not regulated.

ICAO/IATA: Not regulated.

IMO/IMDG: Not regulated.

ADR: Not regulated.

14.5 Environmental hazards:

No further relevant information available.

14.6 Special precautions for users:

No further relevant information available.

14.7 Transport bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable, the product is not sold in bulk quantities.

Section 15: Regulatory Information

15. 1 Safety, health and environmental regulations/legislation specific for substance or mixture:

EPA TSCA Inventory:	All ingredients listed.
State Right-to-Know Laws:	Section 3 of this SDS lists all components of the product.
SARA Section 311/312 (40 CFR 370) Hazard:	Not classified according to GHS.
SARA Section 313:	Antimony Oxide 1-2% by weight.
FDA:	The product is approved by the FDA for use as a heating enhancer in authorized PET polymers in contact with all types of food including infant formula and breast milk for use at levels of up to 0.05 wt% of the polymer. Listed under FCN 001437 with CAS No. 12673-86-8.
California Proposition 65:	No ingredients listed.

15. 2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

Section 16: Other Information

National Fire Protection Association (U.S.A.) 704	Health-1, Flammability-0, Reactivity-0, Special-None

HMIS® Hazard Rating:	Health-1, Flammability-0, Reactivity-0, Protective Equipment - E; safety glasses, dust respirator.
Recommended Use:	The product is recommended for use as a catalyst, in ceramics and polymers. 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 the product should read and understand this SDS and be trained in the proper use of this material.
Other Special Considerations:	None known.
SDS Prepared By:	Andrew Guzelian Nyacol Nano Technologies, Incorporated Telephone: 508-881-2220 U.S.A.
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