Section 1: Product and Company Identification:

1.1 Product Identifier

Product Form:	Mixture
Identification of Substance:	Tin Antimony Gray Cassiterite Polyester Resin
Product Name:	NYACOL® SN902-MB
Synonym:	Antimony tin oxide polyester resin, tin antimony oxide polyester resin
CAS Number:	68187-54-2, 25038-59-9
Index Number:	Not available.
EINECS Number:	269-105-9, 607-507-1
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:	PET.
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. +1 508-881-2220
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 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not classified.

2.1.1 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

3.1 Chemical characterization: Mixtures

Description: Mixture consisting of the following components.

Component Name:	Product Identifier	GHS Classification	Percent By Weight
Polyethylene terephthalate	CAS: 25038-59-9 EINCES: 607-507-1 Index: Not available	Not classified	99.5

Tin antimony gray cassiterite	CAS: 68187-54-2 EINECS: 269-105-9 Index: Not available	Not classified	<1

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: In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek 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. 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: Ingestion is not likely in the available physical form. If ingested, seek medical attention. Rinse mouth and then drink plenty of water. Do not induce vomiting. Immediate medical attention required.

First Aid Facilities: Eye wash station.

4.2 Most important symptoms and effects, both acute and delayed

Treat symptomatically.

Tin oxide (stannic oxide) has a very low order of toxicity. Colloidal tin oxide has been used as a hepatolienographic agent by intravenous injection in rabbits and dogs without reaction or obvious harm, see The American Journal of Roentgenology, Radium Therapy and Nuclear Medicine, Vol. LXXVII, No. 1 January, 1957, "A New Hepatolienographic Agent: Tin Oxide", Harry W. Fischer, M.D. For a general overview see Toxicological Profile for Tin, U.S. Department of Health and Human Services; PB93-110864.E61.

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: Use water, dry chemical, chemical foam, or alcohol-resistant foam. Water or foam may cause frothing. Use agent most appropriate to extinguish fire.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Flammability of the product: No further relevant information available.

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. Keep unprotected persons away. Avoid inhalation of fumes, dust, or mist and contact with skin and eyes.

6.2 Environmental precautions

Do not allow product to reach sewage system or water bodies. Such contamination must be report to local health authority or other responsible authorities.

6.3 Methods and material for containment and cleaning up

Ventilate area. Avoid breathing dust, mist, or vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection if ventilation is inadequate. Reclaim for processing if possible. Sweep/shovel up. Place into suitable containers for reuse or disposal in a licensed facility. Dispose of in accordance with national, state and local regulations.

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

Avoid inhalation of dusts/mists/vapors during use. Minimum feasible handling and temperatures should be maintained.

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 or ingestion. 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

Provide sufficient ventilation at store and workrooms. Store in cool, dry area. Do not freeze. Periods of exposure to high temperatures should be minimized. Water contaminations should be avoided.

7.3 Specific end use(s)

No further relevant information available.

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):	Light blue-green pellets.
Upper/lower flammability or explosive limits:	Not applicable.
Volatile by Weight:	0%
Odor:	Odorless
Vapor Pressure:	Not applicable.
Odor Threshold:	No further relevant information available.
Vapor Density:	No further relevant information available.
pH:	Not applicable.
Density:	1.4 g/cm^3
Melting point/freezing point:	>250 °C
Solubility in Water:	Insoluble.
Initial boiling point and boiling range:	No further relevant information available.
Flashpoint:	No further relevant information available.
Evaporation Rate:	Not applicable.
Flammability (solid, gas):	No further relevant information available.
Partition Coefficient:	No further relevant information available.
Auto-ignition temperature:	No further relevant information available.
Decomposition temperature:	No further relevant information available.
Viscosity:	Not applicable.
Specific Gravity:	1.4
Freezing Point:	Not applicable.
Explosion Limits:	Not applicable.
Oxidizing Properties:	No further relevant information available.

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

Avoid prolonged exposure to extreme heat.

10.5 Incompatible materials

Strong oxidizing agents, acids, bases.

10.6 Hazardous decomposition products

Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones may be formed on burning. Heating in air may produce irritating aldehydes, acids, ketones.

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, mist or dust 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. Published reports claim respiratory irritation from stannic oxide.
Ingestion:	Ingestion is not likely in the available physical form. If ingested, seek medical attention.
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 Toxicity

Assessment of aquatic toxicity: The product has not been tested. The statement has been developed from the structure of the product. There is a high probability that the product is it no acutely harmful to acquatic organisms.

12.2 Persistence and degradability

Experience shows this product to be inert and non-degradable.

12.3 Bioaccumulative potential

The product will not be readily bioavailable due to its consistency and insolubility in water.

12.4 Mobility in soil

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

Ecotoxical effects:

No further relevant information available.

12.5 Results of PBT and vPvB Assessment

Not available.

12.6 Other adverse effects

No further relevant information available.

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 incinerated in a licensed facility. Do not discharge product/substance into sewer system.
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, product not sold in bulk quantities.

Transport/Additional Information:

No further relevant information available.

Section 15: Regulatory Information

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

EPA TSCA Inventory:	All ingredients listed.
Canadian Domestic Substance List:	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:	No listed ingredients above De minimus limit
SARA 304 and CERCLA 102 (A):	No listed ingredients.
FDA USA:	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 listed ingredients.

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 Hazard	Health-1, Flammability-1, Reactivity-0, Special-None
HMIS® Hazard Rating:	Health-1, Flammability-1, Reactivity-0, Protective Equipment - E; safety glasses, dust respirator.
Recommended Use:	The product is recommended for use 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 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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