Section 1: Product and Company Identification:

1.1 Product Identifier

Product Form:	Mixture
Identification of Substance:	Stannic oxide and water
Product Name:	NYACOL® SN15CG
Synonym:	Tin Oxide
CAS Number:	18282-10-5
Index Number:	Not available.
EINECS Number:	242-159-0
REACH Registration Number:	05-2117294571-38-0000
Formula:	SnO_2

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

Recommended Use:	Catalyst. Ceramics.
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:	CHEMTREC: 1-800-424-9300 International CHEMTREC: +1 (703) 527-3887 24 Hours/Day: 7 Days/Week

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS-US Classification

Not classified.

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

Not classified.

2.1.2 Classification according to Directive 67/548/EEC and 1999/45/EC (including amendments)

Not classified.

2.2 Label Elements

Not labelled.

Signal Word: Not applicable.

Hazard Pictogram: Not applicable.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

2.3 Other Hazards

Stannic oxide does 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
Stannic oxide:	CAS: 18282-10-5 EINECS: 242-159-0 Index: Not available	Not classified	15
Water:	CAS: 7732-18-5 EINECS: 231-791-2 Index: Not available	Not classified	85
Ammonium Hydroxide:	CAS: 1336-21-6 EINECS: 215-647-6 Index: 007-001-01-2	Skin corr. 1B - H314 C R34	<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: 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: In case of contact, immediately flush skin with plenty of water for several minutes. Remove contaminated clothing. Get medical attention if skin irritation develops or persists.

Inhalation: If inhaled, remove to fresh air; remove person from exposure source. Consult medical professional.

Ingestion: If swallowed, seek medical attention immediately. Do NOT induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person.

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 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.

4.2 Most important symptoms and effects, both acute and delayed

Direct contact with eyes may cause temporary irritation.

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 fire fighting measures that suit the environment. All are acceptable, cool containers with water spray.

Unsuitable extinguishing media:	Do not use water jet as an extinguisher as this will spread the fire.

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

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.

6.1.1 For non-emergency personnel

Wear protective equipment. Keep unprotected persons away.

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 or mist. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill or leak with sand, clay or absorbents. Recover liquid for recycle or disposal. Put in appropriate container. 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 during use. Use only in well ventilated area. Avoid release to the environment.

7.1.1 Protective measures

Use only in well ventilated areas. As a precautionary measure, the wearing of standard work gear is suggested.

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. Periods of exposure to high temperatures should be minimized. Provide sufficient ventilation in storage and workrooms. Store in a cool dry area. Keep containers tightly sealed.

7.3 Specific end use(s)

No additional information available. Refer to Section 1.2 of this SDS.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

8.1.1 National Limit Values

Stannic oxide, CAS #18282-10-5

Country	Occupational exposure limit	Reference period	Reference
USA	2 mg/m3 (as Sn)	8 hours TWA	US NIOSH: Pocket Guide to Chemical Hazards.
UK	2 mg/m3 (as Sn)	8 hours TWA	Health and Safety Executive- http://www.hse.gov.uk/pubns/priced/eh40.pdf
Germany	Not established	N/A	Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (MAK Commission): http://www.dfg.de/en/dfg_profile/statutory_bodies/senate/health_hazards/index.html
Ammonium Hydroxide, CAS 1336-21-6			
USA	17 mg/m3	8 hours TWA	US OSHA

8.1.2 DNELs and PNECs

Stannic oxide, CAS #18282-10-5

DNEL (Derived No Effect Level)	
Route of Exposure/Environmental protection target	**DNEL**
No information available	No information available.
PNEC (Predicted No Effect Concentration)	

No information available

8.2 Exposure Controls

Engineering Controls: Use exhaust ventilation to keep airborne concentrations below exposure limits. Avoid inhalation of spray, dust, or particulates.

Hygiene Measures: Maintain good housekeeping. Clean up spills immediately. Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be changed and 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.
Environmental Exposure Controls:	Adverse effects of this material on the environment have not been evaluated. Proper disposal techniques to isolate and recover material should be implemented.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance (Physical State, Color):	Liquid. Translucent blue-to-yellow liquid. The product is a water-based material.
Upper/lower flammability or explosive limits:	Not determined.
Volatile by Weight:	85%
Odor:	Odorless.
Vapor Pressure:	2260 kPs (17 mm Hg) at 20°C water
Odor Threshold:	Not determined.
Vapor Density:	Not determined.
pH:	9 – 10.5
Relative Density:	1150 kg/M^3
Melting point/freezing point:	Not determined.
Solubility in Water:	Soluble in all proportions.
Initial boiling point and boiling range:	100° C (212° F) water
Flashpoint:	Not applicable.
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:	Less than 15 cP
Specific Gravity:	1.15
Freezing Point:	0°C (32° F) water
Explosion Limits:	Not applicable.
Oxidizing Properties:	Not an oxidizer.

9.2 Other information

Not applicable.

Section 10: Stability and Reactivity

10.1 Reactivity

This product is stable and non-reactive under normal conditions of use, storage and transport.

10.2 Chemical Stability

Stable.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

No recommendation.

10.5 Incompatible materials

Not determined.

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:

Stannic oxide, CAS# 18282-10-5	>20 g/kg
Ammonium Hydroxide, CAS# 1336-21-6	>90 mL/kg
Skin corrosion/irritation:	Irritation, drying or cracking of skin due to drying effect. No published data available. Dry skin has been reported.
Eye damage/irritation:	Irritation. No published data available. Should be irritating based on pH.
Inhalation:	Published reports claim respiratory irritation from stannic oxide.
Sensitization:	No sensitizing effect known.
Chronic Effects:	Chronic inhalation of stannic oxide causes a benign form of pneumoconiosis known as stannosis.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Section 12: Ecological Information

12.1 Toxicity

No further relevant information available.

12.2 Persistence and degradability

Tin is generally regarded as being relatively immobile in the environment (WHO1980).

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Results of PBT and vPvB Assessment

The PBT and vPvB criteria of Annex XIII to the Regulation do not apply to this product.

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:	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
United States:	The product is not a RCRA hazardous 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

Not an environmental hazard for transport.

14.6 Special precautions for user

Not available.

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

Not established.

Section 15: Regulatory Information

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

Worldwide Chemical Inventories

EINECS (EU):	All ingredients listed
TSCA (USA):	All ingredients listed
DSL (Canada):	All ingredients listed
AICS (Australia):	All ingredients listed
ENCS (Japan):	All ingredients listed
ECL (Korea):	All ingredients listed
PICCS (Philippines):	All ingredients listed
IECSC (China):	All ingredients listed
SARA 302:	Not listed.
SARA Section 311/312 (29 CFR 1910.1200) Hazards:	Product is not classified as hazardous.
California Proposition 65:	No ingredients listed.
SARA 313 (TRI reporting):	Ammonium Hydroxide, CAS 1336-21-6 is listed.
State Right-to-Know Laws:	Section 3 of this SDS lists all components of the product.
Technical Instructions (air):	Not determined.
Water hazard class:	Not available.
WHMIS:	Not controlled.
Controlled Products Regulations:	This SDS contains all the information items specified in Schedule 1, Column 3 of the Controlled Products Regulations in a 16-heading format.

15. 2 Chemical safety assessment

A chemical safety assessment has been carried out for stannic oxide.

Section 16: Other Information

List of hazard phrases:

Regarding physical and chemical hazards, Stannic Oxide is not classified according to regulation (EC) 1272/2008 (CLP).

National Fire Protection Association (U.S.A.) 704 Hazard Rating:	Health-1, Flammability-0, Reactivity-0, Special-None
HMIS® Hazard Rating:	Health-1, Flammability-0, Reactivity-0, Protective Equipment - E; safety glasses, gloves, dust respirator.

Recommended Use:	The product is recommended for use in catalysts and ceramics. 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 SN15 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 A. Guzelian Nyacol Nano Technologies, Incorporated Telephone: 508-881-2220 U.S.A.
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Supersedes:	April 30, 2009

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