

SAFETY DATA SHEET

Preparation Date: 10/11/2010
Revision Date: 10/19/2021

SECTION 1: Identification

Silica-Shelled NanoXact™ Silver Nanoparticles (AGSH)

Manufacturer: nanoComposix, Inc.
4878 Ronson CT STE K
San Diego, CA 92111-1806

NANOCOMPOSIX CUSTOMER SERVICE: (858) 565-4227
CHEMTREC (EMERGENCY ONLY): (800) 424-9300
POISON CENTER: (800) 562-8236

Relevant Identified Uses: Laboratory chemicals, Manufacture substances

SECTION 2: Hazards Identification

EMERGENCY OVERVIEW:

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

Flammable liquids (Category 2), H225.

Eye irritation (Category 2A), H319

Pictogram



Signal word Danger

HMIS CLASSIFICATION

Health Hazard: 2

Flammability: 3

Physical Hazards: 0

NFPA RATING

Health Hazard: 2

Fire: 3

Reactivity Hazard: 0

APPEARANCE: Yellow/brown, yellow/grey, yellow/opal colored liquid; opaque.

EYE CONTACT: May cause eye irritation. Prolonged exposure may cause eye damage.

SKIN CONTACT: May be harmful if absorbed through skin. May cause skin irritation.

INHALATION: May be harmful if inhaled. May cause respiratory tract irritation.

INGESTION: May be harmful if ingested.

ACUTE HEALTH EFFECTS: May be irritating to skin, eyes and digestive tract.

CHRONIC HEALTH EFFECTS: Repeated and prolonged exposures have not been studied.

AGGRAVATION of PRE-EXISTING CONDITIONS: Persons with preexisting conditions may be more susceptible.

SECTION 3: Composition and Information on Ingredients

CHEMICAL NAME: Colloidal silica-shelled silver nanoparticles

CAS REGISTRY NUMBER: 7440-22-4 (silver); 7631-86-9 (silica colloid)

FORMULA: Ag, SiO₂

EINECS NUMBER: NA (See components)

CHEMICAL FAMILY: metal composite

SYNONYM: silica-shelled NanoXact silver nanoparticles, silver nanoparticles, silver composites, colloidal silver, colloidal silica

INGREDIENTS	CAS #	% by Mass	Hazardous
Silver	7440-22-4	0.1	No
Silica	7631-86-9	< 0.6	No
Ethanol	64-17-5	> 99	No

SECTION 4: First Aid Measures

PRIMARY ROUTES OF EXPOSURE: Ingestion, dermal contact.

EYE EXPOSURE: Remove contacts if present. Immediately flush the eyes with water for at least 10-15 minutes. Seek medical attention if irritation persists.

SKIN EXPOSURE: Wash the affected area with soap and water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

INHALATION: If breathed in, move person to fresh air. If not breathing, give artificial respiration.

INGESTION: If the person is conscious, rinse their mouth out with water. Never give anything by mouth to an unconscious person.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED: The most important known symptoms and effects are described in section 2 and/or in section 11.

SECTION 5: Fire Fighting Measures

EXTINGUISHING MEDIUM: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus for fire fighting if necessary.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: None.

UNUSUAL FIRE OR EXPLOSION HAZARDS: None.

SECTION 6: Accidental Release Measures

GENERAL PROTECTION: See Section 8 for personal protection. Avoid breathing vapors, mist or gas.

ENVIRONMENTAL PRECAUTIONS: No special environmental precautions required.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP: Small spills can be swept up or diluted flushed with water to dilute according to local, state, and federal disposal guidelines. Solid surface should be wiped with a detergent-based cleaner to clean any remaining materials.

SECTION 7: Handling and Storage

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with skin, eyes and clothing. Avoid prolonged or repeat exposure.

RECOMMENDED STORAGE: Closed container stored at 2-8°C away from light. DO NOT FREEZE.
Storage class (TRGS 510): Combustible Liquids

SECTION 8: Exposure Controls and Personal Protection

CONTROL PARAMETERS:

Components	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Confirmed animal Carcinogen with unknown relevance to humans		
		TWA	1000 ppm 1900 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
			The value in mg/m ³ is approximate	
		TWA	1000 ppm 1900 mg/m ³	USA. NIOSH Recommended Exposure Limits

Component	CAS #	Value	Control Parameters	Basis
Silver	7440-22-4	TWA	0.1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Argyria		
		PEL	0.01 mg/m ³	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		TEWA	0.01 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

EXPOSURE CONTROLS:

APPROPRIATE ENGINEERING CONTROLS: General industrial hygiene practice.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

SKIN PROTECTION: Wear protective clothing and gloves.

VENTILATION: None.

RESPIRATOR: Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

ADDITIONAL PROTECTION: No additional protection required.

SECTION 9: Physical and Chemical Properties

FORM:	Liquid, individual particles 20-150 nm total diameter.
APPEARANCE/COLOR:	Yellow/brown, yellow/grey or yellow/opal; opaque.
UPPER/LOWER FLAMMABILITY LIMIT:	No data available.
ODOR:	No data available.
VAPOR PRESSURE:	No data available.
ODOR THRESHOLD:	No data available.
VAPOR DENSITY:	59.5 hPa (44.6 mmHg) at 20.0 °C (68.0 °F)-Ethanol
pH:	No data available.
RELATIVE DENSITY:	0.7974 g/cm ³ at 25 °C (77 °F)-Ethanol
MELTING/FREEZING POINT (°C):	No data available.
SOLUBILITY:	No data available.
BOILING POINT (°C):	78.0 - 80.0 °C (172.4 - 176.0 °F)-Ethanol
FLASH POINT (°C):	16.60 °C (61.88 °F)-Ethanol
EVAPORATION RATE:	No data available.
FLAMMABILITY:	No data available.
PARTITION COEFFICIENT:	No data available.
AUTO-IGNITION TEMPERATURE (°C):	No data available.
DECOMPOSITION TEMPERATURE (°C):	No data available.
MOLECULAR WEIGHT:	No data available.
VISCOSITY:	No data available.
SPECIFIC GRAVITY:	No data available.

SECTION 10: Stability and Reactivity

REACTIVITY: No data available.

CHEMICAL STABILITY: Stable under recommended storage conditions. DO NOT FREEZE.

OTHER:

POSSIBILITY OF HAZARDOUS REACTIONS: No data available.

CONDITIONS TO AVOID: Heat, flames and sparks.

MATERIALS TO AVOID: Alkali metals, Oxidizing agents, Peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products may be formed under fire conditions – Silver/silver oxides –See section 5 the event of fire. Nature of decomposition products not known.

SECTION 11: Toxicological Information

ACUTE TOXICITY

Oral LD50: No data available.

Inhalation LD50: No data available.

Dermal LD50:	No data available.
Other information on acute toxicity:	No data available.
SKIN CORROSION/IRRITATION:	No data available.
SERIOUS EYE DAMAGE/IRRITATION	No data available.
RESPIRATORY OR SKIN SENSITIZATION	No data available.
GERM CELL MUTAGENICITY	No data available.
CARCINOGENICITY – Mouse – Oral	
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease.-(Ethanol)	
IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA.
REPRODUCTIVE TOXICITY:	Reproductive toxicity - Human - female - Oral
	Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.
TERATOGENICITY:	No data available
SPECIFIC TARGET ORGAN TOXICITY	No data available
ASPIRATION HAZARD	No data available
POTENTIAL HEALTH EFFECTS	
Inhalation:	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion:	May be harmful if swallowed.
Skin:	May be harmful if absorbed through skin. May cause skin irritation.
Eyes:	May cause eye irritation.
SIGNS AND SYMPTOMS OF EXPOSURE:	May cause argyria (a slate-grey or bluish discoloration of the skin and deep tissues to the deposit of insoluble albuminate of silver. Exposure to silver compounds can cause contact dermatitis. The toxicological properties have not been thoroughly investigated. The data supplied are for closely related compounds. No data available.
SYNERGISTIC EFFECTS:	No data available.
ADDITIONAL INFORMATION:	RTECS: KQ6300000-(Ethanol)

SECTION 12: Ecological Information

AQUATIC/TERRESTRIAL ORGANISM TOXICITY:	No data available.
ASPIRATION HAZARD	No data available.
PERSISTANCE AND DEGRADABILITY:	No data available.
BIOACCUMULATIVE POTENTIAL:	No data available.
MOBILITY IN SOIL:	No data available.

PBT AND vPvB ASSESSMENT:

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

OTHER ADVERSE EFFECTS:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects. No ecological problems are to be expected when the product is handled and used with due care and attention.

SECTION 13: Disposal Considerations

DISPOSAL: Dispose of according to local, state and federal regulations. (Refer to Section 8)

SECTION 14: Transportation Information

DOT (US): UN number: 1170 Class: 3

Packing group: II

Proper shipping name: Ethanol

Reportable Quantity (RQ):

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG: UN number: 1170 Class: 3

Packing group: II

EMS-No: F-E, S-D

Proper shipping name: ETHANOL

Marine pollutant: No

IATA: UN number: 1170 Class: 3

Packing group: II

Proper shipping name: Ethanol

SHIPPING NAME (CFR):

Not Available

SHIPPING NAME (IATA):

Flammable Liquid (Ethanol)

SECTION 15: Regulatory Information

OSHA HAZARDS: Flammable liquids (Category 2), H225-(Ethanol)

DSL STATUS: All components of this product are on the Canadian DSL list

TSCA 8(b) inventory: All Components are listed

SARA 302 COMPONENTS: No chemicals in this material are subject the reporting requirements of SARA Section 302.

SARA 313 COMPONENTS: No chemicals in this material are subject to the reporting requirements of SARA Section 313.

SARA 311/312 HAZARDS: No SARA Hazards.

MA RIGHT TO KNOW COMPONENTS:**CAS #**

Ethanol

64-17-5

PA RIGHT TO KNOW COMPONENTS:

INGREDIENTS

CAS #

% by Mass

Hazardous

Silver	7440-22-4	0.1	No
Silica	7631-86-9	< 0.6	No
Ethanol	64-17-5	> 99	No

NJ RIGHT TO NOW COMPONENTS

INGREDIENTS	CAS #	% by Mass	Hazardous
Silver	7440-22-4	0.1	No
Silica	7631-86-9	< 0.6	No
Ethanol	64-17-5	> 99	No

CA PROP 65 COMPONENTS: This product does not contain any chemicals known to the State of CA to cause cancer, birth defects, or any other reproductive harm.

SECTION 16 Other Information

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, nanoComposix, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information.