

# SAFETY DATA SHEET

Preparation Date: 10/11/2010  
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## SECTION 1: Identification

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### NanoXact™ PEG Gold Nanoshells (GSGN)

**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

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## SECTION 2: Hazards Identification

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### EMERGENCY OVERVIEW:

**OSHA Hazards:** No known OSHA hazards. Not a dangerous substance according to GHS.

**Hazards not otherwise classified (HNOC) or not covered by GHS - None**

### HMIS CLASSIFICATION

Health Hazard: 0  
Flammability: 0  
Physical Hazards: 0

### NFPA RATING

Health Hazard: 0  
Fire: 0  
Reactivity Hazard: 0

**APPEARANCE:** Pink or red/blue colored liquid.

**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.

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## SECTION 3: Composition and Information on Ingredients

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**CHEMICAL NAME:** Colloidal gold nanoshells

**CAS REGISTRY NUMBER:** 7440-57-5 (gold colloid); 7631-86-9 (silica colloid)

**FORMULA:** Au, SiO<sub>2</sub>

**EINECS NUMBER:** NA (See components)

**CHEMICAL FAMILY:** metal composite

**SYNONYM:** gold nanoshells, gold shells, gold composites, colloidal gold, colloidal silica

<b>INGREDIENTS;</b>	<b>CAS #</b>	<b>% by Mass</b>	<b>Hazardous</b>
Gold (as colloid)	7440-57-5	0.05	No
Silica	7631-86-9	0.0008 - 0.03	No
mPEG-Thiol	-	trace	No
Water	7732-18-5	>99	No

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## SECTION 4: First Aid Measures

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**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.

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## SECTION 5: Fire Fighting Measures

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**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.

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## SECTION 6: Accidental Release Measures

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**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.

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## SECTION 7: Handling and Storage

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**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. DO NOT FREEZE.  
Storage class (TRGS 510): Non Combustible Liquids

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## SECTION 8: Exposure Controls and Personal Protection

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**CONTROL PARAMETERS:** Contains no substances with occupational exposure limit values.

**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.

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## SECTION 9: Physical and Chemical Properties

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<b>FORM:</b>	Liquid, individual particles 110-250 nm total diameter.
<b>APPEARANCE/COLOR:</b>	Pink, Blue, or Green colored liquid.
<b>UPPER/LOWER FLAMMABILITY LIMIT:</b>	No data available.
<b>ODOR:</b>	No data available.
<b>VAPOR PRESSURE:</b>	No data available.
<b>ODOR THRESHOLD:</b>	No data available.
<b>VAPOR DENSITY:</b>	No data available.
<b>pH:</b>	No data available.
<b>RELATIVE DENSITY:</b>	No data available.
<b>MELTING/FREEZING POINT (°C):</b>	No data available.
<b>SOLUBILITY:</b>	No data available.
<b>BOILING POINT (°C):</b>	No data available.
<b>FLASH POINT (°C):</b>	No data available.
<b>EVAPORATION RATE:</b>	No data available.
<b>FLAMMABILITY:</b>	No data available.
<b>PARTITION COEFFICIENT:</b>	No data available.
<b>AUTO-IGNITION TEMPERATURE (°C):</b>	No data available.
<b>DECOMPOSITION TEMPERATURE (°C):</b>	No data available.
<b>MOLECULAR WEIGHT:</b>	No data available.
<b>VISCOSITY:</b>	No data available.
<b>SPECIFIC GRAVITY:</b>	No data available.

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## SECTION 10: Stability and Reactivity

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**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:** No data available.

**MATERIALS TO AVOID:** No data available.

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

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## SECTION 11: Toxicological Information

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### 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

**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:** No data available

**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:** Exposure to gold 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 not available.

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## SECTION 12: Ecological Information

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**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:** No data available.

**OTHER ADVERSE EFFECTS:** No data available.

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## SECTION 13: Disposal Considerations

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

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## SECTION 14: Transportation Information

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**DOT (US):** Not dangerous goods.

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

**SHIPPING NAME (CFR):** Non-hazardous.

**SHIPPING NAME (IATA):** Non-hazardous.

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## SECTION 15: Regulatory Information

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**OSHA HAZARDS:** No known OSHA hazards

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

**TSCA 8(b) inventory:** All components except mPEG-Thiol are found in TSCA inventory.

**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:** No components are subject to the MA Right to Know Act.

**PA RIGHT TO KNOW COMPONENTS:**

<b>INGREDIENTS;</b>	<b>CAS #</b>	<b>% by Mass</b>	<b>Hazardous</b>
Gold (as colloid)	7440-57-5	0.05	No
Silica	7631-86-9	0.0008 - 0.03	No
mPEG-Thiol	-	trace	No
Water	7732-18-5	>99	No

**NJ RIGHT TO NOW COMPONENTS**

<b>INGREDIENTS;</b>	<b>CAS #</b>	<b>% by Mass</b>	<b>Hazardous</b>
Gold (as colloid)	7440-57-5	0.05	No
Silica	7631-86-9	0.0008 - 0.03	No
mPEG-Thiol	-	trace	No
Water	7732-18-5	>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.

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**SECTION 16 Other Information**

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