



# Safety Data Sheet

Skyspring Nanomaterials, Inc.

www.ssnano.com

Revision Date: 12/01/2015

## **1 Identification of substance:**

### **Product details:**

**Product name:** Germanium

**Product number:** 3606DX

### **Manufacturer/Supplier:**

SkySpring Nanomaterials, Inc.  
2935 Westhollow Dr., Houston, TX 77082, USA  
Phone: 281-870-1700  
Fax: 281-870-8002  
Email: sales@ssnano.com

## **2 Composition/Data on components:**

### **Chemical characterization:**

Description: (CAS#)

Germanium (CAS# 7440-56-4): 100%

### **Identification number(s):**

**EINECS Number:** 7440-56-4

## **3 Hazards identification**

### **Emergency Overview**

#### **OSHA Hazards**

Flammable solid, Target Organ Effect

#### **Target Organs**

Kidney, Liver, Blood

#### **GHS Label elements, including precautionary statements**

Signal word: Danger

Hazard statement(s)

H228 Flammable solid

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

### **HMIS Classification**

**Health hazard:** 0

**Chronic Health Hazard:** \*

**Flammability:** 0

**Physical hazards:** 3

### **NFPA Rating**

**Health hazard:** 0

**Fire:** 0

**Reactivity Hazard:** 3

### **Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation.

**Ingestion** May be harmful if swallowed.

#### 4. FIRST AID MEASURES

##### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### **In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

##### **In case of eye contact**

Flush eyes with water as a precaution.

##### **If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIRE-FIGHTING MEASURES

##### **Suitable extinguishing media**

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

##### **Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

##### **Further information**

Use water spray to cool unopened containers.

#### 6. ACCIDENTAL RELEASE MEASURES

##### **Personal precautions**

Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

##### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

##### **Methods and materials for containment and cleaning up**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

#### 7. HANDLING AND STORAGE

##### **Precautions for safe handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking. Take measures to prevent the build up of electrostatic charge.

##### **Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Keep in a dry place.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

##### **Personal protective equipment**

###### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

###### **Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**

Form powder

Colour grey

**Safety data**

pH no data available

Melting point 937 °C (1,719 °F) - lit.

Boiling point 2,830 °C (5,126 °F) - lit.

Flash point not applicable

Flammability (solid, gas) The substance or mixture is a flammable solid with the subcategory 1.

Ignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Density 5.35 g/mL at 25 °C (77 °F)

Water solubility no data available

**10. STABILITY AND REACTIVITY**

**Chemical stability**

Stable under recommended storage conditions.

**Conditions to avoid**

Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Materials to avoid** Strong oxidizing agents, Halogens

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Germanium oxides

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye 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 a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is

identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

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**

Cough, Difficulty in breathing

**Additional Information**

RTECS: LY5200000

**12. ECOLOGICAL INFORMATION**

**Toxicity**

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

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**Toxicity**

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no data available

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no data available

**Mobility in soil**

no data available

**13. DISPOSAL CONSIDERATIONS**

**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN-Number: 3089 Class: 4.1 Packing group: II

Proper shipping name: Metal powders, flammable, n.o.s.

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3089 Class: 4.1 Packing group: II EMS-No: F-G, S-G

Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

Marine pollutant: No

**IATA**

UN-Number: 3089 Class: 4.1 Packing group: II

Proper shipping name: Metal powder, flammable, n.o.s.

## 15. REGULATORY INFORMATION

### OSHA Hazards

Flammable solid, Target Organ Effect

### DSL Status

This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

Germanium

CAS-No.

7440-56-4

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know Components

Germanium

CAS-No.

7440-56-4

Revision Date

### New Jersey Right To Know Components

Germanium

CAS-No.

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Revision Date

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. OTHER INFORMATION

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.