



# Safety Data Sheet

Skyspring Nanomaterials, Inc.

www.ssnano.com

Updated on 02/16/2016

## 1 Identification of substance:

**Trade name:** Bismuth Nanopowder

**Product numbers:** 0470DX

**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#)**

Bismuth (CAS# 7440-69-9), 100%

**Identification number(s):**

**EINECS Number:** 231-177-4

## 3 Hazards identification

**Hazard description:** · Not applicable

**Information pertaining to particular dangers for man and environment**

Not applicable

**Classification system**

**HMIS ratings (scale 0-4)**

**(Hazardous Materials Identification System)**

Health (acute effects) = 2

Flammability = 2

Reactivity = 2

#### **4 First aid measures**

##### **After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.

##### **After skin contact**

Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.

##### **After eye contact**

Rinse opened eye for several minutes under running water.  
Then consult a doctor.

**After swallowing** Seek immediate medical advice.

#### **5 Fire fighting measures**

##### **Suitable extinguishing agents**

Special powder for metal fires. Do not use water.

**For safety reasons unsuitable extinguishing agents** Water

**Special hazards caused by the material, its products of combustion or**

##### **resulting gases:**

In case of fire, the following can be released:  
Metal oxide

##### **Protective equipment:**

Wear self-contained respirator.  
Wear fully protective impervious suit.

#### **6 Accidental release measures**

##### **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

##### **Measures for environmental protection:**

Do not allow material to be released to the environment  
without proper governmental permits.

**Measures for cleaning/collecting:** Pick up mechanically.

**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## **7 Handling and storage**

### **Handling**

**Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

**Information about protection against explosions and fires:**

Fine powder: highly flammable

### **Storage**

**Requirements to be met by storerooms and receptacles:**

No special requirements.

**Information about storage in one common storage facility:**

Do not store together with oxidizing and acidic materials.

Store away from halogens.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

## **8 Exposure controls and personal protection**

**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Components with limit values that require monitoring at the workplace:**

Not required.

**Additional information:** No data

### **Personal protective equipment**

#### **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

#### **Breathing equipment:**

Use suitable respirator when high concentrations are present.

**Protection of hands:** Impervious gloves

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

## **9 Physical and chemical properties:**

### **General Information**

**Form:** Powder

**Color:** Black

**Odor:** Odorless

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
<b>Change in condition</b>			
<b>Melting point/Melting range:</b>		271.3	° C
<b>Boiling point/Boiling range:</b>		1560	° C
<b>Sublimation temperature / start:</b>	Not determined		
<b>Flash point:</b>	Not applicable		
<b>Flammability (solid, gaseous)</b> flammable	Fine powder: highly		
<b>Ignition temperature:</b>	Not determined		
<b>Decomposition temperature:</b>	Not determined		

**Explosion limits:**

**Lower:** Not determined

**Upper:** Not determined

**Vapor pressure:** Not determined

**Density:** at 20 ° C 9.8 g/cm<sup>3</sup>

**Solubility in / Miscibility with**

**Water:** Insoluble

**10 Stability and reactivity**

**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Materials to be avoided:**

Acids  
Oxidizing agents  
Halogens  
Interhalogens

**Dangerous reactions** Reacts with strong oxidizing agents

**Dangerous products of decomposition:** Metal oxide fume

**11 Toxicological information**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

Oral: LD50: 10000 mg/kg (mus)  
LD50: 5000 mg/kg (rat)

**Primary irritant effect:**

**on the skin:** Irritant to skin and mucous membranes.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

**Subacute to chronic toxicity:**

Bismuth and bismuth compounds are often poorly absorbed. Should absorption occur, however, exposure may cause loss of appetite, headache, skin rash, exodermatitis, kidney injury and jaundice. Repeated or prolonged exposure may cause a bismuth line or black spots on the gums, foul breath and salivation.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information:**

**General notes:**

Do not allow material to be released to the environment without proper governmental permits.

**13 Disposal considerations**

**Product:**

**Recommendation**

Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:**

Disposal must be made according to official regulations.

**14 Transport information**

Not a hazardous material for transportation.

**DOT regulations:**

**UN number : 3089 Class: 4.1, Packaging Group : II**

**IMDG**

**UN number : 3089 Class: 4.1, Packaging Group : II EMS-No:  
F-G, S-G**

## **15 Regulations**

### **Product related hazard information:**

Observe the general safety regulations when handling chemicals

### **National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

### **Information about limitation of use:**

For use only by technically qualified individuals.

## **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.