

# Material Safety Data Sheet



## SiGNa™ Sodium Silicide (NaSi)

### Section 1. Chemical product and company identification

- Common name** : SiGNa™ Sodium Silicide (NaSi)
- Material uses** : Provides more hydrogen gas through the reduction of water than either potassium or sodium alone. Ideal for chemical reactions involving unstable intermediates such as carbanions and free radicals. Can be successfully used for reactions such as side chain alkylation of aromatics, isomerization of alpha olefins, free radical and condensation polymerization, reduction of various inorganic and organic compounds, reduction of water, impurity scavenging of acetylenic and allenic contaminants, and cleavage of functional groups like C - X, C - S, C - O and O - S bonds.
- Supplier/ Manufacturer** : SiGNa Chemistry, LLC, 1541 Chalet Drive, Suite 101, Cherry Hill, New Jersey 08003  
Tel : 856-216-1200 Fax : 856-216-0234 E-mail : safety@signachem.com
- In case of emergency** : 1-888-779-0780

### Section 2. Hazards identification

- Physical state** : Solid. (Solidcrystalline powder.)
- Emergency overview** : Danger!  
CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS.  
SPILLAGE MAY CAUSE FIRE OR LIBERATE POISONOUS GAS.  
CONTACT WITH WATER MAY CAUSE FLASH FIRE.  
Do not get in eyes, on skin or clothing. Do not breathe dust. Keep away from heat, sparks and flame. Will react with water or steam to produce heat and toxic fumes. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
- Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.
- Potential acute health effects**
- Eyes** : Corrosive to eyes.
- Skin** : Corrosive to the skin.
- Inhalation** : Corrosive to the respiratory system.
- Ingestion** : May cause burns to mouth, throat and stomach.
- Potential chronic health effects** : CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Synthetic amorphous silica, precipitated].  
MUTAGENIC EFFECTS: Not available.  
TERATOGENIC EFFECTS: Not available.
- Medical conditions aggravated by overexposure** : Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

See toxicological Information (section 11)

### Section 3. Composition, Information on Ingredients

	CAS number	% by weight
<b>United States</b>		
Silicon Powder, Amorphous	7440-21-3	40 - 60
Sodium	7440-23-5	40 - 60

This material is classified as hazardous under OSHA regulations.  
See Chapters 8, 11 and 14 for details.

## Section 4. First aid measures

- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion** : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

## Section 5. Fire fighting measures

- Flammability of the product** : Flammable.
- Auto-ignition temperature** : The lowest known value is 260°C (500°F) (Sodium).
- Products of combustion** : Some metallic oxides.
- Fire hazards in presence of various substances** : Flammable in presence of open flames, sparks and static discharge. Slightly flammable to flammable in presence of heat.
- Fire fighting media and instructions** : Use dry chemical or CO<sub>2</sub>. Do not use water or foam.
- Will react with water or steam to produce heat and toxic fumes.
- Special protective equipment for fire-fighters** : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

## Section 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Do not touch or walk through spilled material.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal.

## Section 7. Handling and storage

- Handling** : Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Do not breathe dust. Keep away from heat, sparks and flame. Will react with water or steam to produce heat and toxic fumes. Wash thoroughly after handling.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use.

## Section 8. Exposure Controls, Personal Protection

- Engineering controls** : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Personal protection

#### Eyes

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.  
Recommended: Safety glasses.



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- Respiratory** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.  
Recommended: Dust respirator.
- Hands** : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  
>8 hour(s) (breakthrough time): Nitrile gloves.
- Skin/Body** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.  
Body: Recommended: Lab coat or overall .  
Feet: Recommended: Shoes.



**Personal protection in case of a large spill** : Safety glasses, goggles or face shield. Impervious gloves.

### Product name

### United States

Silicon Powder, Amorphous

### Exposure limits

#### ACGIH TLV (United States, 1/2004).

TWA: 10 mg/m<sup>3</sup> 8 hour(s). Form: All forms.

#### NIOSH REL (United States, 12/2001).

TWA: 10 mg/m<sup>3</sup> 10 hour(s). Form: Total

#### OSHA PEL (United States, 8/1997).

TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m<sup>3</sup> 8 hour(s). Form: Total dust

Consult local authorities for acceptable exposure limits.

## Section 9. Physical and chemical properties

- Physical state** : Solid. (Solidcrystalline powder.)
- Color** : Black./ Grey.
- Odor** : Odorless.
- Melting/freezing point** : Weighted average: 819.5°C (1507.1°F)
- Specific gravity** : 1.7 (Water = 1)
- Vapor pressure** : 0 kPa (0 mm Hg) (at 20°C)
- Dispersion properties** : Is not dispersed in cold water, hot water.
- Solubility** : Insoluble in cold water, hot water.

## Section 10. Stability and reactivity

- Stability and reactivity** : The product is stable.
- Conditions of instability** : Very high temperatures or the presence of water and humid air.
- Incompatibility with various substances** : Reactive with oxidizing agents, acids, alkalis, moisture.  
The product reacts violently with water to emit flammable but non toxic gases.
- Hazardous polymerization** : Will not occur.

## Section 11. Toxicological information

### Toxicity data

Ingredient name	Test	Result	Route	Species
Silicon Powder, Amorphous	LD50	3160 mg/kg	Oral	Rat

### Acute Effects

<b>Eyes</b>	: Corrosive to eyes.
<b>Skin</b>	: Corrosive to the skin.
<b>Inhalation</b>	: Corrosive to the respiratory system.
<b>Ingestion</b>	: May cause burns to mouth, throat and stomach.
<b>Potential chronic health effects</b>	: CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for human.) by IARC [Synthetic amorphous silica, precipitated]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

## Section 12. Ecological information

**Products of degradation** : Some metallic oxides.

## Section 13. Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Consult your local or regional authorities.

## Section 14. Transport information

### Classification

DOT/IMDG/IATA:	UN number	Proper shipping name	Class	Packing group
	UN2813	WATER-REACTIVE SOLID, N.O.S. (Sodium)	4.3	II

NAERG : 138

### Label

UN/Other regulations



DOT



### Additional information

## Section 15. Regulatory information

### United States

**HCS Classification** : Water reactive material  
Corrosive material

**U.S. Federal regulations** : TSCA : All components listed.  
SARA 302/304/311/312 extremely hazardous substances: No products were found.  
SARA 302/304 emergency planning and notification: No products were found.  
SARA 302/304/311/312 hazardous chemicals: Silicon Powder, Amorphous; Sodium  
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Silicon Powder, Amorphous: Fire hazard, Immediate (Acute) Health Hazard; Sodium: Fire hazard, reactive  
Clean Water Act (CWA) 307: No products were found.  
Clean Water Act (CWA) 311: Sodium  
Clean air act (CAA) 112 accidental release prevention: No products were found.  
Clean air act (CAA) 112 regulated flammable substances: No products were found.  
Clean air act (CAA) 112 regulated toxic substances: No products were found.

**State regulations** : Pennsylvania RTK: Silicon Powder, Amorphous: (generic environmental hazard);  
Sodium: (environmental hazard, generic environmental hazard)  
Massachusetts RTK: Silicon Powder, Amorphous; Sodium  
New Jersey: Silicon Powder, Amorphous; Sodium

### International regulations

**International lists** : Australia (NICNAS): Silicon Powder, Amorphous; Sodium  
  
China: Silicon Powder, Amorphous; Sodium  
  
Germany water class: Sodium  
  
Korea (TCCL): Silicon Powder, Amorphous; Sodium  
  
Philippines (RA6969): Silicon Powder, Amorphous; Sodium

## Section 16. Other information

**Label Requirements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS.  
SPILLAGE MAY CAUSE FIRE OR LIBERATE POISONOUS GAS.  
CONTACT WITH WATER MAY CAUSE FLASH FIRE.

**Hazardous Material Information System (U.S.A.)** :

Health	3
Fire hazard	2
Reactivity	2
Personal protection	C

**National Fire Protection Association (U.S.A.)** :



**References** : ANSI Z400.1, MSDS Standard, 2001. -Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG.

**Date of issue** : 03/31/2005  
**Version** : 1

**SiGNa™ Sodium Silicide (NaSi)**

**[Notice to reader](#)**

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.