

Material Safety Data Sheet

Date Revised: 10/5/2010

1 Identification of substance:

Trade name: Titanium carbide

Stock number: SN6101

Manufacturer/Supplier:

Sun Innovations, Inc.

43241 Osgood Rd.

Fremont, CA 94539

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Titanium carbide (CAS# 12070-08-5), 97.5%

Identification number(s):

EINECS Number: 235-120-4

3 Hazards identification

Hazard description: F Highly flammable

Information pertaining to particular dangers for man and environment
R 11 Highly flammable.

Health(acute effects) = 1

Flammability = 2

Reactivity = 1

Irritating to eyes, respiratory system and skin.

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

In case of fire, use sand, CO2 or ♦extinguishing powder. Never use water spray.

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

resulting gases:

In case of fire, the following can be released:

Carbon monoxide (CO) and carbon dioxide

Metal oxide fume

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

♦♦ Keep away from ignition sources.

Measures for environmental protection:

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

Measures for cleaning/collecting: Ensure adequate ventilation.

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.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and receptacles:

Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

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:

Form: Powder

Color: Dark grey

Odor: Not determined

	Value/Range	Unit	Method
Change in condition			
Melting point/Melting range:	3140	°C	(5684 °F)
Boiling point/Boiling range:	4800	°C (8672 °F)	
Sublimation temperature / start:	Not determined		
Flash point:	Not applicable		
Flammability (solid, gaseous)	Highly flammable.		
Ignition temperature:	Not determined		
Decomposition temperature:	Not determined		
Danger of explosion:			
Product does not present an explosion hazard.			

Explosion limits:

Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	at 20 °C 4.93 g/cm ³
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: Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

Metal oxide fume ,Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:

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:

Titanium and titanium compounds are considered physiologically inert. There are no reported cases in the literature where titanium as such has human intoxication.

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 for proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

14 Transport information

Not a hazardous material for transportation.

DOT regulations:

Hazard class: 4.1

Land transport ADR/RID (cross-border)

ADR/RID class: 4.1 (F3) Flammable solids, self-reactive substances and solid desensitized explosives

Maritime transport IMDG:

IMDG Class: 4.1

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 4.1

Proper shipping name: Flammable solid, Inorganic, N.O.S. (Titanium carbide)

15 Regulations

- Product related hazard informations:

- Hazard symbols: F Highly flammable

- Risk phrases:
11 Highly flammable.

- Safety phrases:
7 keep container tightly closed.

33 Take precautionary measures against static discharges.

43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

- National regulations

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

All components of this product are listed on the Canadian Domestic Substances List (DSL).

- 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 judgement 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.