SAFETY DATA SHEET

Version 2.2
31 March 2020

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name:	Silicon nitride (Si_3N_4) with fibres > 10 vol%
Product codes:	F80 Silicon Nitride Fibres, F90 Silicon Nitride Fibres, P80 Silicon Nitride Particles
CAS#:	12033-89-5*

* No CAS# exists for silicon nitride fibre; this is the CAS# for silicon nitride

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	Additive for composite and coatings, laboratory chemicals, manufacture of substances
Advice against:	Food additives, public distribution

1.3. Details of the supplier of the safety data sheet

Company:	Nuenz Limited POBOX 2341 Christchurch 8140 NEW ZEALAND
Telephone:	NZ +64 3 3399300

1.4. Emergency telephone number

Emergency ph#: NZ +64 4 974 8558

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

HZNO 6.7B: Substances that are suspected human carcinogens

GHS: Carcinogenicity Category 2

IARC 2B: "Refractory ceramic fibres are possibly carcinogenic to humans"

2.2. Label elements

WARNING
SUSPECTED OF CAUSING CANCER BY INHALATION

2.3. Other hazards

None

SECTION 3: Composition/information on ingredients

3.1. Substances

Synonyms:	Silicon nitride fibres, silicon nitride fibers, silicon nitride whiskers silicon nitride nanowires, silicon nitride nanofibres, silicon nitride nanofibers
Formula:	N_4Si_3
Molecular Weight:	140.28 g/mol
CAS#:	12033-89-5

Hazardous ingredients:

Component	Classification (CLP)	Concentration
Silicon nitride	not classified	80-100%

SECTION 4: First aid measures

4.1. Description of first aid measures

General best practise for fine particulates:

If inhaled, move person to fresh air. If required, give artificial respiration. Seek immediate medical advice.

In case of skin contact, wash thoroughly with soapy water.

In case of eye contact, flush eyes with plenty of water. Seek medical advice.

If swallowed, rinse mouth with water. Consult a physician. Never give anything to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

See section 11

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Not flammable – use appropriate firefighting measures for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Fire can liberate fine particulates of with suspected toxicity.

5.3. Advice for firefighters

Wear full protective clothing and NIOSH approved self-contained breathing apparatus.

SECTION 6: Accidental release measure

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing particulates, vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection, see section 8.

6.2. Environmental precautions

Do not let product enter drains

6.3. Methods and material for containment and cleaning up

Wipe up material with wet cloths and dispose of in marked bags.

6.4. Reference to other sections

See section 13 for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use personal protective equipment. Avoid dust formation. Avoid breathing particulates, vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection, see section 8.

7.2. Conditions for safe storage, including any incompatibilities

Store in a well-sealed container. No incompatibilities.

7.3. Specific end use(s)

See section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit: 0.1 fibre/cc
-respirable fibres > 5µm, with an aspect ratio > 3 as determined by the membrane filter method at 400-450x magnification (4-mm objective), using phase-contrast illumination).

8.2. Exposure controls

Appropriate engineering controls

Use local exhaust. Handle in accordance with good hygiene practises.

Personal Protection

Eye protection

Safety glasses with side-shields conforming to local regulations such as EN166 or AS1337.1.2010.

Respiratory protection

NIOSH approved P2 type dust respirator.

Skin protection

Penetration resistant gloves compliant to local standards. Use proper glove removal technique (without touching glove outer surface). The type of protective clothing must be selected according to the concentration and volume being handled. Remove personal protective equipment before entering communal areas.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	grey powder
Odour:	none
Odour threshold:	n/a
pH:	no data available
Melting point:/freezing point:	>1900°C
Initial boiling point and boiling range:	>1900°C
Flash point:	>1900°C
Evaporation rate:	no data available
Flammability (solid, gas):	not flammable
Upper/lower flammability or explosive limits:	no data available
Vapour pressure:	no data available
Relative density:	3.1 g/cm^3
Water solubility:	insoluble
Partial coefficient n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	>1900°C
Viscosity:	no data available
Explosive properties:	no data available
Oxidising properties:	no data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/irritation
No data available

Respiratory or skin sensitisation
Respiratory hazard, inhalation.

Germ cell mutagenicity
No data available

Carcinogenicity
Suspected carcinogen – inhalation. This product contains a component that is classified as HSNO 6.7B.

Reproductive toxicity
No data available

Specific target organ toxicity – single exposure
No data available

Specific target organ toxicity – repeated exposure
No data available

Aspiration hazard
No data available

Additional information
Prolonged inhalation of refractory crystalline fibres may lead to pulmonary fibrosis n which scars are formed in the lung tissues. This causes the formation of scar tissue in the lungs and excessive fibrotic tissue, ultimately resulting in decreased lung function and perpetual shortness of breath.

To the best of our knowledge, the chemical, physical, and toxilogical properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1. Toxicity
No data available

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
No data available

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Use a specialist disposal company or return surplus product to the supplier.

SECTION 14: Transport information

14.1. UN number

ADR-RID: - IMDG: - IATA-DGR: -

14.2. UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA-DGR: Not dangerous goods

14.3. Transport hazard class(es)

ADR-RID: - IMDG: - IATA-DGR: -

14.4. Packing group

ADR-RID: - IMDG: - IATA-DGR: -

14.5. Environmental hazards

ADR-RID: no IMDG marine pollutant: no IATA-DGR: no

14.6. Special precautions for user

No data available

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available

SECTION 16: Other information

Further Information

This information provided in this SDS is the best information available at the date prepared and has been based on sources which we believe are reliable. However, the SDS is provided without express or implied warranty of the accuracy or correctness of the information. The SDS represents current best practise, minimum handling requirements. The conditions of handling, storage and disposal are beyond our control and possibly beyond our knowledge. For this and other reasons we do not assume responsibility and disclaim liability for loss, damage and expense arising in any way with the handling, storage, use or disposal of the product.