

1- Product and Company Identification

1.1 Product identification

Trade name:	Zetamix Alumina ; Zetamix White Zirconia ; Zetamix Black Zirconia
Chemical Name:	3D printing filament based on alumina or zirconia
Chemical formula:	Al ₂ O ₃ and/or ZrO ₂
CAS number:	-
REACH number	-

1.2 Identified use

Fabrication of industrial ceramic

1.3 Manufacturer/Supplier

Nanoe SAS
6 rue des Frênes
91160 Ballainvilliers
France
+ 33 9 81 98 33 64

1.4 Emergency Number:

+33 1 45 42 59 59 (24/24h)

2- Hazards identification

2.1 Classification

Regulation CLP EC 1272/2008: Not classified

2.2 Label elements

Not necessary according CLP EC 1272/2008

2.3 Other hazards

No other hazards known

3- Composition/Data on components

CAS number	EC number	REACH number	Substances	Classification 1272/2008	%
1344-28-1	215-691-6	01-2119529248-35-0348	Aluminium Oxide	Non classified	0-90
64417-98-7	215-227-2	01-2119486976-14-0083	Zirconium Oxide	Non classified	0-90
-	-	-	Organic additives	Non classified	10-30
-	-	-	Loss of ignition	-	-

4- First aid measures

4.1 Description of first aid measures

- After inhalation** Supply fresh air.
If required, provide artificial respiration.
Call a doctor if some symptoms develop.
- After skin contact** Wash hands and face before eating, drinking or smoking.
- After swallowing** Unlikely. Consult a doctor in case of swallowing.
- After eye contact** Rinse opened eye for at least 15 minutes under running water.
Call a doctor in case of irritation.

4.2 Principal symptoms

- After inhalation** At concentrations above the legal exposure limits, inhalation may cause irritation of the nose, throat and lungs.
- After skin contact** No significant effects or known hazards
- After swallowing** No hazards that require special first aid measures.
- After eye contact** At concentrations above the legal exposure limits, exposure may result in eye irritation

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

5- Fire Fighting Measures

5.1 Suitable extinguishing agents

Use an appropriate extinguishing agent to quench the surrounding fire

5.2 Special hazards arising from the substance or mixture

No specific risk of fire, explosion or decomposition products

5.3 Advice for firefighters

In the presence of fire, quickly circumnavigate the site by evacuating any person who is near the scene of the accident. No attempt should be made that involves an individual risk or in the absence of appropriate training. Firefighters must wear appropriate protective equipment.

6- Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid inhaling the gases produced during the printing of the filament. Provide adequate ventilation.

6.2 Environmental precautions

Try to prevent the penetration of material into waterways or sewers.

6.3 Methods and materials for containment and cleaning up

Recycle, if possible. The waste must be disposed of in accordance with the regulations in force.

6.4 Reference to other sections

See section 1 for emergency contact information

See section 8 for information on suitable personal protective equipment

See section 13 for additional information on waste treatment

7- Handling and storage

7.1 Handling precautions

Avoid breathing vapors when printing. Use in a well-ventilated area.

Staff are advised to wash their hands and face before eating, drinking or smoking.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

7.3 Specific end use(s)

Except for the uses mentioned in section 1.2, there are no other recommended uses

8- Exposure controls and personal protection

8.1 Control parameters

Component	CAS number	Type	Value	Basis
Aluminium compounds	1344-28-1	TWA	10 mg/m ³	France. Exposure Limit Value for 8h
Zirconium compounds	7440-67-7	TWA	5 mg/m ³	France. Exposure Limit Value for 8h
Magnésium oxides	1309-48-4	VME	10 mg/m ³	France. Exposure Limit Value

It may be necessary to conduct a follow-up examination of people, workplace atmosphere to determine the effectiveness of ventilation or other respiratory protection.

Component	CAS number	Type	Exposition	Value
Aluminium oxide	1344-28-1	DNEL	Short term oral	6,2 mg/kg
Aluminium oxide	1344-28-1	DNEL	Short term inhalation	15,6 mg/m ³

8.2 Exposure controls

Appropriate technical controls

Handle in accordance with good hygiene and industrial safety practices. Use suction at source and / or good general ventilation should be sufficient. Wash hands before each break and end of workday.

Individual protection measures

Eye and face protection

Safety glasses according to EN166 for prolonged use.

Skin protection

Minimize contact with the skin. When equipment is heated, wear gloves to protect against burns.

Body protection

No special protective clothing is required.

Respiratory protection

Breathing ways protection is not required.

Environmental exposure control

Try to prevent the penetration of material into waterways or sewers.

9- Properties of the product

Physical state	Ceramic filament
Color	White / Black
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Melting point	50-100°
Boiling point	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability	No data available
Upper/lower flammability or explosive limits	No data available
Vapor pressure	Not applicable
Vapor density	No data available
Theoretical Density	2.5-5
Water solubility	Insoluble in water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	Not applicable
Viscosity	Not applicable
Explosive properties	No data available
Oxidizing properties	No data available

10- Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

During drying, cleaning and molding of gaseous releases may occur and may cause irritation of the eyes, throat and respiratory tract.

10.4 Conditions to avoid

Avoid a temperature rise above the recommended maximum temperature.

10.5 Incompatible materials

Strong acids and strong oxidants

10.6 Hazardous decomposition products

Under normal conditions of storage and use, no hazardous decomposition products

11- Toxicological information

Acute toxicity	No toxicity
Inhalation	No significant effect
Dermal	No significant effect
Skin and eyes corrosion/irritation	No significant irritation
Respiratory or skin sensitization	No significant sensitization
Germ cell mutagenicity	No mutagenic effects
Carcinogenicity	Non-carcinogenic
Reproductive toxicity	Not considered toxic to the reproductive system
Specific target organ toxicity- single exposure	No data available
Specific target organ toxicity- repeated exposure	No data available
Risk of aspiration	No data available

12- Ecological information

Toxicity	CE50 > 100 mg/l for Selenastrum capricornutum for an exposure of 72h CE50 > 100 mg/l for Daphnia magna for an exposure of 48H CE50 > 100 mg/l for Salmo trutta for an exposure of 96h
Persistence and degradability	No data available
Bio accumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	Not applicable
Other adverse effects	No hazard known

13- Disposal considerations

Waste treatment methods

Product: Dispose of excess and non-recyclable products to an approved disposal company.

Contaminated packaging: Dispose of it as an unused product.

14- Transportation information

DOT (US)/IMDG/IATA/ADR/RID: not dangerous goods

15- Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

Not applicable

15.2 Chemical Safety Assessment

This product contains substances that still need a chemical risk assessment

16- Other informations

Full text of H-statements referred to under sections 2 and 3. Not applicable

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Nanoe shall not be held liable for any damage resulting from handling or from contact with the above product.