

NANOGRAFI NANOTECHNOLOGY

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifiers

Product Form	Substance
Trade Name	Aluminum (Al) Micron Powder, Purity: 99.9+ %, Size: 9 µm
Product Number	NG04CO0809
CAS Number	7429-90-5

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

Use of the substance/mixture	Research
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1.3 Details of the supplier of safety data sheet

Company	Nanografi Nanotechnology
Address	ODTÜ Teknokent İkiizler Binası B-1/H ODTÜ Teknokent 06531- ANKARA
Phone	+90 312 285 85 09
Fax	+90 312 210 13 09

1.4 Emergency Telephone Number

Emergency Telephone Number	+90 312 285 85 09
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SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label Elements

Hazard Pictograms	Not available
Signal Word	Not available

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Hazard Statements Not available

Precautionary Statements Not available

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other Hazards

None.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

Synonyms	Aluminum, Aluminium
Formula	Al
CAS Number	7429-90-5

3.2 Mixtures

Not applicable.

SECTION 4 FIRST AID MEASURES**4.1 Description of first aid measures**

First-aid measures after inhalation	Provide fresh air. If not breathing, give artificial respiration.
First-aid measures after skin contact	Wash off with plenty of water and soap.
First-aid measures after eye contact	Flush eyes with water as a precaution.
First-aid measures after ingestion	Clean mouth with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, including acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

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No data available.

4.4 Other Information

No data available.

SECTION 5 FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable Extinguishing Media Alcohol-resistant Foam, Dry Powder or Carbon Dioxide (CO₂).

Unsuitable Extinguishing Media Water, foam, halogenated extinguishing agents.

5.2 Special hazards arising from the substance or mixture

Particles in contact with water may generate flammable gases.

5.3 Advice for firefighters

Special protective equipment for firefighters Wear self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Personal Precautions Avoid dust formation. Avoid breathing vapours, mist or gas. For personal protection see section 8.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and material for containment and cleaning up

Use mechanical handling equipment. Avoid dust formation. Adequate disposal.

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6.4 Reference to other sections

For further information refer to section 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for Safe Handling	Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.
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7.2 Conditions for safe storage, including any incompatibilities

Storage Conditions	Product should be kept dry.
Incompatible materials	Protect from contamination.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredient	Authority	Type	Limit
Al	OSHA	PEL for total dust	15 mg/m ³
Al	OSHA	TWA respirable fraction	5 mg/m ³

8.2 Exposure controls

Appropriate Engineering Controls	Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing or polishing operations, in order to eliminate explosion hazards.
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Hand Protection	Wear regular work gloves.
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Eye Protection	Avoid eye contact. Use chemical safety goggles if necessary.
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Skin and Body Protection	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection	Self-contained breathing apparatus is required if concentration exceeds the exposure limit.
Environmental Exposure Controls	Avoid release to the environment.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State	Solid
Appearance	Powder
Odor	Odorless
Odor Threshold	No data available
pH	No data available
Relative Evaporation Rate	No data available
Melting Point	660,37 °C
Freezing Point	No data available
Boiling Point	2,460 °C
Flash Point	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Flammability (solid, gas)	No data available
Vapor Pressure	No data available
Relative vapor density at 20°C	No data available
Relative Density	2,700 g/cm ³ at 25 °C
Solubility in H ₂ O	insoluble
Log Pow	No data available
Viscosity, Kinematic	No data available
Viscosity, Dynamic	No data available
Explosive Properties	No data available
Oxidizing Properties	No data available

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9.2 Other information

No other information available.

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under normal conditions of use, storage, and transport.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Molten aluminum may react violently in contact with certain metal oxides and nitrates (rust etc.). Avoid melting wet or cold materials as molten metal may cause explosions in contact with water or wet surfaces. In areas with very high dust concentrations, aluminum dust may form an explosive atmosphere.

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

Not classified

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Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or Skin Sensitization	Not classified
Germ Cell Mutagenicity	Not classified
Carcinogenity	Not classified
Reproductive Toxicity	Not classified
STOT-Single Exposure	Not classified
STOT-Repeated Exposure	Not classified
Aspiration Hazard	Not classified

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology-general	No eco-toxicological effects.
Acute aquatic toxicity	Not classified.
Chronic aquatic toxicity	Not classified.

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

No data available.

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SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste treatment methods Dispose of container and unused contents in accordance with state and local requirements.

Contaminated Packaging Dispose of as unused product.

SECTION 14 TRANSPORT INFORMATION

Safe to carry by any means of transportation. Not restricted any mode of transportation.

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations

The product does not need to be labelled in accordance with Directive 1999/45/EC, or Annex VI to 67/548/EEC. Not a hazardous substance or preparation according to EC-directives 67/548/EEC or 1999/45/EC.

SECTION 16 OTHER INFORMATION

16.1 Abbreviation of acronyms

CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative

Disclaimer

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.