

**SECTION 1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND COMPANY / UNDERTAKING**

<b>Product name:</b>	AEROS-N Aerogel
<b>Synonyms:</b>	Synthetic Amorphous Silica
<b>Relevant identified uses of the substance or mixture and uses advised against:</b>	Material, High performance insulation material, Industrial Products, Absorbant
<b>Manufacturer :</b>	Thilium Co.,ltd 49/12 Moo.5 Katumbane, SamutSakorn Tel: +669-4941-5404
<b>E-mail address:</b>	thilium.k@gmail.com
<b>EMERGENCY TELEPHONE NUMBER:</b>	+669-4941-5404

**SECTION 2. HAZARDS IDENTIFICATION**

<b>Classification:</b>	Product is not classified as a hazardous material according to Regulation (EC) 1272/2008
<b>Hazard pictograms:</b>	None
<b>Signal word:</b>	None
<b>Precautionary statements:</b>	None
<b>Other hazards:</b>	Dust form the product may cause mechanical irritation to the respiratory tract, eyes and skin.
<b>Principle Routes of Exposure:</b>	Inhalation, Skin Contact, Eye contact <sup>[SEP]</sup>
<b>Eye Contact:</b> <sup>[SEP]</sup>	May cause mechanical irritation. Avoid contact with eyes.
<b>Skin Contact:</b>	May cause mechanical irritation and skin drying. Avoid contact with skin.
<b>Inhalation:</b>	Dust may be irritating to respiratory tract. Use only outdoors or in a well-ventilated aera.
<b>Ingestion:</b>	Adverse health effects are not expected. See Section 11.

NFPA HAZARD CLASSIFICATION		HMIS HAZARD CLASSIFICATION	
Health	1	Health	1
Flammability	1	Flammability	1
Reactivity	0	Reactivity	0
Other	Not applicable	Protection	Please refer to Section 8.

### SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	EC Number	Weight (%)
Silica, [(trimethylsilyl)oxy]-modified	102262-30-6	Not applicable	>98
Water	7732-18-5	231-791-2	<2

### SECTION 4. FIRST AID MEASURES

**Description of first and measures**

**Inhalation:**

If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures.

**Skin contact:**

Wash thoroughly with soap and water. Seek medical attention if symptoms develop.

**Eye contact:**

Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if symptoms develop.

**Ingestion:**

Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

### SECTION 5. FIRE FIGHTING MEASURES

<b>Suitable extinguishing media:</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use foam, carbon dioxide (CO <sub>2</sub> ), dry chemical or water spray. A fog is recommended if water is used.
<b>Unsuitable extinguishing media:</b>	DO NOT USE high pressure media or water stream which could cause formation of a potentially explosible dust-air mixture.
<b>Hazardous combustion products:</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Formaldehyde. Organic products of decomposition.
<b>Specific hazards arising from the chemical:</b>	May release formaldehyde when heated to high temperatures in the presence of air. Formaldehyde is a known skin and lung sensitizer and is regulated as a carcinogen.
<i>Advice for fire-fighters</i> <b>Special protective equipment for fire-fighters</b>	Wear self-contained breathing apparatus.
<b>Risk of Dust Explosion:</b>	Dust may form explosive mixture in air. Take precautionary measures against static discharges.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

*Personal precautions, protective equipment and emergency procedures*

<b>Personal precautions:</b>	Avoid dust formation. Ensure adequate ventilation. Use personal protective equipment. See also Section 8.
<b>Environmental precautions:</b>	The product is insoluble and floats on water. If possible, try to contain floating material. Contain spilled product on land.
<b>Methods for cleaning up</b>	Contain and collect released material for proper disposal. Explosion-proof vacuums is the preferred method of cleaning up. Use of a vacuum with high efficiency particulate air (HEPA) filtration is recommended.
<i>Reference to other sections</i> <b>Additional information:</b>	See section 8 and section 13 for more information

## SECTION 7. HANDLING AND STORAGE

<b>Precautions for safe handling:</b>	<p>Dust may be harmful if inhaled. Avoid dust formation. Avoid contact with skin and eyes. Do not breathe dust. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Dust may form explosive mixture in air.</p> <p>Take precautionary measures against static discharges.</p> <p><b>All metal parts of the mixing and processing equipment must be earthed/grounded.</b></p> <p>Ensure all equipment is electrically earthed/grounded before beginning transfer operations. Fine dust is capable of penetrating electrical equipment and may cause electrical shorts.</p>
<b>Advice on general occupational hygiene:</b>	<p>Handle in accordance with good industrial hygiene and safety practice.</p>
<b>Storage conditions:</b>	<p>Keep containers tightly closed in a dry and well-ventilated place. Store at ambient conditions. Keep away from heat and sources of ignition. Keep in properly labeled containers. Do not store together with volatile chemicals as they may be adsorbed onto product.</p>

<b>SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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**Exposure limits:** There are no exposure limits identified for this specific product.

*Exposure limit for Amorphous Silica, CAS No. 7631-86-9*

<b>Australia:</b>	2 mg/m <sup>3</sup> , TWA, Respirable
<b>Finland:</b>	5 mg/m <sup>3</sup>
<b>Germany TRGS 900:</b>	4 mg/m <sup>3</sup> , TWA, Inhalable fraction
<b>India:</b>	10 mg/m <sup>3</sup> , TWA
<b>Ireland:</b>	2.4 mg/m <sup>3</sup> , TWA, Respirable dust
<b>Switzerland:</b>	4 mg/m <sup>3</sup> , TWA
<b>UK WEL:</b>	6 mg/m <sup>3</sup> , TWA, Inhalable fraction 2.4 mg/m <sup>3</sup> , TWA, Respirable fraction

\*TRGS: Technische Regeln für Gefahrstoffe (Technical Rule for Hazardous Materials)

\*WEL: Workplace Exposure Limit

**Exposure controls:**

**Engineering Controls:** Provide appropriate local exhaust ventilation at machinery and at places where dust can be generated. Ensure adequate ventilation to maintain exposures below occupational limits.

**Respiratory Protection:** 

Approved respirator may be necessary if local exhaust ventilation is not adequate.

**Hand Protection:**

Wear protective gloves to prevent skin drying. Use protective barrier cream before handling the product. Wash hands and other exposed skin with mild soap and water.

<b>Eye/face Protection:</b> <sup>[SEP]</sup>	Wear eye/face protection. Wear safety glasses with side shields (or goggles).
<b>Skin and Body Protection:</b>	Wear suitable protective clothing. Wash clothing daily. Work clothing should not be allowed out of the workplace.
<b>Environmental exposure controls:</b>	In accordance with all local legislation and permit requirements as applicable for dusts.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Solid
<b>Appearance:</b>	White powder
<b>Odor:</b> <sup>[SEP]</sup>	None <sup>[SEP]</sup>
<b>pH:</b>	Not applicable
<b>Bulk Density:</b>	~ 100 kg/m <sup>3</sup>
<b>Melting point/Freezing point:</b>	1700 °C after partial decomposition <sup>[SEP]</sup>
<b>Solubility:</b>	Insoluble <sup>[SEP]</sup>
<b>Boiling point and boiling range:</b>	2230 °C after partial decomposition
<b>Flashing point:</b>	Not Applicable <sup>[SEP]</sup>
<b>Evaporation rate:</b>	Not Applicable <sup>[SEP]</sup>
<b>Flammability (solid, gas):</b>	Not flammable
<b>Vapor pressure:</b>	Not Applicable <sup>[SEP]</sup>
<b>Solubility:</b>	Insoluble <sup>[SEP]</sup>
<b>Auto-ignition temperature:</b>	400°C

## SECTION 10. STABILITY & REACTIVITY

<b>Reactivity:</b>	Not reactive
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<b>Chemical stability</b>	Stable under recommended handling and storage conditions. Thermally decomposes above 300°C
<b>Sensitivity to Static Discharge:</b>	Dust may form explosible mixture in air. Avoid dust formation. Do not create a dust cloud by using a brush or compressed air. Take precautionary measures against static discharges. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.
<b>Hazardous polymerization:</b>	Hazardous polymerization does not occur
<b>Possibility of hazardous reactions:</b>	None under normal processing
<b>Possibility of hazardous reactions:</b>	None under normal processing.
<b>Conditions to avoid:</b>	Keep away from heat and sources of ignition. Avoid dust formation. Heating above 300°C leads to decomposition of Aerogel surface treatment. Decomposition vapor should be ventilated. May release formaldehyde when heated to high temperatures in the presence of air. Formaldehyde is a known skin and lung sensitizer and is regulated as a carcinogen.
<b>Incompatible materials:</b>	None known
<b>Hazardous decomposition products:</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Formaldehyde, Organic products of decomposition

**SECTION 11. TOXICOLOGICAL INFORMATION**

*Toxicological information is based on data obtained from similar substances. (CAS No. 7631-86-9)*

<b>Acute toxicity</b>	
<b>Oral LD50:</b>	> 5000 mg/kg. No deaths occurred and no signs of toxicity were seen during the observation periods after single oral administration of the substance. (OECD 423).
<b>Inhalation LC50:</b>	Due to the product's physical characteristics, no suitable testing procedure is available
<b>Dermal LD50:</b>	No data are available on the product itself

	Synthetic Amorphous Silica LD50/dermal/rabbit = > 2000 mg/kg Very slight transient erythema in one animal. No signs of systemic or organ toxicity (OECD 402)
<b>Skin corrosion/irritation:</b>	Primary irritation index = 0.0 @ 24 hr. Not classified as an irritant (OECD 404).
<b>Serious eye damage/eye irritation:</b>	Not classified as an irritant in rabbit studies (OECD 405). High dust concentrations may cause mechanical irritation
<b>Carcinogenicity:</b>	No data are available on the product itself.  Synthetic Amorphous Silica. No evidence of carcinogenicity was observed in multiple animal species following repeated oral or inhalation exposure to amorphous silica. Similarly, epidemiology studies show no evidence of carcinogenicity in workers who manufacture amorphous silica.
<b>Reproductive and Developmental Toxicity:</b>	No effects on reproductive organs or fetal development have been reported in animal toxicity studies.
<b>Specific target organ toxicity (single exposure):</b>	Not classified
<b>Specific target organ toxicity (repeated exposure):</b>	Not classified
<b>Aspiration Hazard:</b>	Based on industrial experience and available data, no aspiration hazard is expected.

**SECTION 12. ECOLOGICAL INFORMATION**

*Toxicological information is based on data obtained from similar substances. (CAS No. 7631-86-9)*

<b>Aquatic toxicity :</b>	No data are available on the product itself [SEP]
	Synthetic Amorphous Silica. Fish (Brachydanio rerio) LC50 (96 h): > 10,000 mg/l; (Method: OECD 203). No acute toxicity to Daphnia with EL and EL <sub>50</sub> ranging from >1000 to 10,000 mg/L (OECD 202).
<b>Persistence and degradability</b>	The methods for determining biodegradability are not applicable to inorganic substances

<b>Bioaccumulative potential</b>	Not expected due to physicochemical properties of the substance.
<b>Mobility in soil</b>	Not expected to migrate.
<b>Other adverse effects:</b>	No information available.

**SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods	Disposal should be in accordance with applicable regional, national and local laws and regulations.
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**SECTION 14. TRANSPORT INFORMATION**

Not classified as dangerous in the meaning of transport regulations.

**SECTION 15. REGULATORY INFORMATION**

<b>Indication of danger:</b>	Not a hazardous substance according to Regulation (EC) 1272/2008 (CLP), its various amendments and adaptations and Directive 67/548/EEC.
<b>EU Chemical Safety Assessment:</b>	No Chemical Safety Assessment has been carried out
<b>International Inventories:</b>	This material is listed on or exempt from the following inventories: Australian Inventory of Chemical Substances (AICS) / Canadian Domestic Substances List (DSL) / European Inventory of Existing Commercial Chemical Substances (EINECS) / New Zealand Hazardous Substances and New Organisms Act (HSNO) / United States Toxic Substances Control Act (TSCA) Inventory:

**SECTION 16. OTHER INFORMATION**

**Pharmaceutical Use:** Not permitted

**Food Additive Use:** Not permitted

**Information source and references**

ECB-ESIS (European chemical Substances Information System) (<http://ecb.jrc.it/esis>)

International Uniform Chemical Information Database (IUCLID) (<http://ecb.jrc.it/esis>)

International Program on Chemical Safety (IPCS INCHEM) (<http://www.inchem.org/>)

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008

United Nations Environmental Programme (UNEP)

Organization for Economic Co-operation and Development (OECD) Screening Information Data Set (SIDS) Initial Assessment Report, Synthetic Amorphous Silica, July 23, 2004

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