

Referenzmaterial BAM N008

Safety Data Sheet

according to Regulation (EU) 2020/878

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Revision date: -

Version/Replaced version: 1.0/-



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

1.1. Product identifier

Product form : Mixtures
Product name : Referenzmaterial BAM N008

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

1.2.1. Relevant identified uses

Main use category : Industrial use. Professional use.
Use of the substance/mixture : Certified reference material for the use in the chemical laboratory

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier / Producer

Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87
12205 Berlin – Germany

Contact person:

Division 6.5 Synthesis and Scattering of Nanostructures
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Safety Data Sheet: DLAC Dienstleistungsagentur Chemie GmbH, E-mail: sds@dlac-gmbh.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number
Germany	Giftnotruf der Charité Universitätsmedizin Berlin	Oranienburger Straße 285 13437 Berlin	+49 30 30686700 (German, English) only in Germany; in all other cases use the information below

Information on national poison control centres within the EU can be found under the member states information on their national helpdesks:
<https://echa.europa.eu/de/support/helpdesks>

Global information on poison centres can be found at the WHO homepage: <https://www.euro.who.int/en/home>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazardous to the aquatic environment — Acute Hazard, Category 1 H400

Hazardous to the aquatic environment — Chronic Hazard, Category 1 H410

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS09

Signal word (CLP) : Warning
Hazard statements (CLP) : H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statements (CLP) : P273 - Avoid release to the environment.
P391 - Collect spillage.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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Labelling according to: exemption for packages of a capacity of 125ml or less

Hazard pictograms (CLP)

:



GHS09

Signal word (CLP)

: Warning

2.3. Other hazards

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Silver (nano form, diameter of 6 nm)	CAS-No.: 7440-22-4 EC-No.: 231-131-3	< 0.5	Aquatic Acute 1, H400 (M=1000) Aquatic Chronic 1, H410 (M=100)

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Get medical advice/attention if you feel unwell. If possible show him this sheet. Failing this, show him the packaging or label. Never give anything by mouth to an unconscious person. Place the affected person in the recovery position.
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Rinse mouth. Drink plenty of water as a precaution.

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

Symptoms/injuries	: Not expected to present a significant hazard under anticipated conditions of normal use.
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4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Adapt extinguishing agents to the environment. Carbon dioxide. Dry extinguishing powder. Water spray. For a significant fire: Alcohol resistant foam.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released. Silver oxides. Sodium oxides.
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5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Provide adequate ventilation.
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6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate the danger area.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.
Dispose of in accordance with relevant local regulations.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original container. Store tightly closed in a dry and cool place. Protect from light and direct sunlight
Prohibitions on mixed storage : Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Silver (7440-22-4)		
Ireland	Local name	Silver (metallic)
Ireland	OEL (8 hours ref) (mg/m³)	0.1 mg/m³ metallic
Malta	Local name	Silver, metallic # Fidda, metalliku
Malta	OEL TWA	0.1 mg/m³ metallic
United Kingdom	Local name	Silver
United Kingdom	WEL TWA (mg/m³)	0.1 mg/m³ metallic

Silver (7440-22-4)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, inhalation	0.1 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	1.2 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0.04 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0.04 µg/l
PNEC aqua (marine water)	0.86 µg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	438.13 mg/kg dwt
PNEC sediment (marine water)	438.13 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.41 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.025 mg/l

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.
Hand protection : Not required. If required, wear suitable gloves (EN 374). Nitrile rubber. ≥ 0.35 mm. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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Eye protection	: Wear safety glasses (EN 166)
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: No respiratory protection needed under normal use conditions. If the occupational exposure limit is exceeded or dust production: dust mask with filter type P1.
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	: Liquid
Colour	: Reddish brown.
Odour	: Odourless
Melting point/freezing point	: Not available
Boiling point or initial boiling point and boiling range	: No data available
Flammability	: No data available
Lower and upper explosion limit	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
pH	: 10
Kinematic viscosity	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (log value)	: Not applicable
Vapour pressure	: No data available
Density and/or relative density	: No data available
Relative vapour density	: No data available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Explosive properties	: Not explosive
Oxidising properties	: No oxidising properties

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7. Light sensitive.

10.3. Possibility of hazardous reactions

None under normal use.

10.4. Conditions to avoid

Light/Direct sunlight

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Silver oxides. Sodium oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
	Based on available data, the classification criteria are not met

Silver (7440-22-4)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat	> 5.16 mg/l

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Skin corrosion/irritation	: Not classified Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Not classified Based on available data, the classification criteria are not met
Respiratory or skin sensitisation	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met

11.2. Information on other hazards

Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met
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SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: Very toxic to aquatic life.
Chronic aquatic toxicity	: Very toxic to aquatic life with long lasting effects.

Silver (7440-22-4)	
LC50 fish	1.2 µg/l 96h, Pimephales promelas
EC50 crustacea	0.22 µg/l 48 h, Daphnia magna
EC10 algae	0.54 mg/l µg/l 24 h, Chlamydomonas reinhardtii
NOEC chronic fish	0.351 µg/l 32 d, Pimephales promelas
EC10 chronic crustacea	2.14 µg/l 21 d, Daphnia magna

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

This product does not meet the PBT- or vPvB criteria of REACH regulation, annex XIII.

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Dispose in a safe manner in accordance with local/national regulations.
Waste treatment methods	: Do not empty into drains.
Waste code	: The waste code number according to the Ordinance on the European Waste Catalogue (AVV) depends on the waste producer and can therefore vary for any given product. The waste code number is therefore to be gleaned separately from each waste producer.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

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14.1. UN number

UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not applicable
UN-No. (IATA) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Changes compared to the previous version : -

Abbreviations and acronyms:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	The effective concentration of substance that causes 50% of the maximum response (Median Effective Concentration)
IATA	International Air Transport Association
IMDG	"International Maritime Dangerous Goods Code" for the transport of dangerous goods by sea
LC50	Lethal Concentration to 50 % of a test population (Median Lethal Concentration)
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
NOEC/L	No Observed Effect Concentration/Level
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic substance
PNEC	Predicted No-Effect Concentration
REACH	Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SDS	Safety Data Sheet
STP	Sewage Treatment Plant
vPvB	Very Persistent and Very Bioaccumulative

Full text of H- and EUH-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), EU

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.