

SAFETY DATA SHEET

[Prepared in accordance with Regulation EC 1907/2006 (REACH) as amended]

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

1.1 Product identifier

Trade name: **NANO SILVER aerosol SANITIZER**

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

Identified uses: disinfection of surfaces, materials, equipment and furniture that do not come into contact with food or animal feed.

Uses Advised Against: not specified.

1.3 Details of the supplier of the safety data sheet

Supplier: **Nanoskala Sp. z o.o.**

Address: ul. Gliwicka 134, 42-600 Tarnowskie Góry, Poland

Telephone: +48 883883427

E-mail address for a competent person responsible for the SDS: info@nanoskala.com

1.4 Emergency telephone number

112 (general emergency telephone), 998 (fire brigade), 999 (medical emergency)

Toxicological Information Centres:

+58 682 04 04 (Gdańsk), +12 411 99 99 (Kraków), +61 847 69 46 (Poznań), + 48 607 218 174 (Warsaw)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Aerosol 1 H222-H229

Extremely flammable aerosol. Pressurised container: Heating may cause an explosion.

2.2 Label elements

Hazard pictograms and signal words.



DANGER

Names of substances which have affected the classification

None.

Hazard statements

H222 Extremely flammable aerosol.

H229 Pressurised container: Heating may cause an explosion.

Precautionary statements

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

P501 Dispose of contents / container to an authorized company in accordance with national regulations.

2.3 Other hazards

The product does not contain components meeting the PBT or vPvB criteria in accordance with Annex XIII of the REACH Regulation.

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Section 3: Composition/information on ingredients

3.2 Mixtures

CAS number: 64-17-5 EC number: 200-578-6 Index number: 603-002-00-5 REACH registration number: 01-2119457610-43-XXXX	ethanol ¹⁾ Flam. Liq. 2 H225	≤ 80 %
CAS Number: 7440-22-4 EC number: 231-131-3 Index number: - REACH registration number: 01-2119555669-21-XXXX	silver ¹⁾ the substance is not classified as hazardous	0.001 %

⁽¹⁾ Substance with a defined maximum permissible occupational exposure limit at the national level.

The full text of the H-phrases is quoted in Section 16 of the Safety Data Sheet.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: Take off dirty clothes. Wash contaminated skin with plenty of water. Consult a doctor if disturbing symptoms appear.

Eye contact: Consult an ophthalmologist if disturbing symptoms appear. Protect the non-irritated eye, remove contact lenses. Wash the contaminated eyes with water for at least 15 minutes. Avoid strong stream of water – risk of damage to the cornea.

Ingestion: exposure by this route usually does not occur. If swallowed, rinse the mouth with water, then drink plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a doctor if disturbing symptoms appear.

Inhalation: Move victim to fresh air, keep the victim warm and calm. Consult a doctor if disturbing symptoms appear.

4.2 Most important symptoms and effects, both acute and delayed

Eye contact: possible redness, tearing, burning sensation.

After inhalation: possible coughing, respiratory problems, dizziness and central nervous system disorders.

After swallowing: possible irritation of mouth, throat and stomach.

4.3 Indication of any immediate medical attention and special treatment needed

The decision on the method of rescue proceedings is made by the doctor after a thorough assessment of the condition of the injured party. Treat symptomatically.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: carbon dioxide, extinguishing powder, alcohol-resistant foam, water spray,

Unsuitable extinguishing media: strong stream of water – danger of fire spreading.

5.2 Special hazards arising from the substance or mixture

Harmful gases can be formed during combustion that contain carbon oxides and other unidentified pyrolysis products. Avoid inhalation of combustion products and may pose a health hazard.

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5.3 Advice for firefighters

Extremely flammable aerosol. Pressurised container, heating may cause an explosion. Wear general protective equipment typical in case of fire. Do not stay in a fire-endangered area without proper chemical-resistant clothing and self-contained breathing apparatus. Vapours may accumulate near the surface of the ground and move over long distances, creating the danger of fire or explosion. Cooldown fire-endangered container at a safe distance with a water spray. Pressurised container – danger of leakage or even explosion at high temperature. Collect used extinguishing media. Do not allow fire extinguishing water to leak into drains, surface water or groundwater.

Section 6: Accidental release measure

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Ensure that the recovery of the failure and its effects are performed by trained personnel only. In the case of large releases, isolate the exposed area. Avoid contact with skin and eyes. Ensure adequate ventilation. Do not breathe vapours. Impose a ban on smoking and on use of open flame and sparking tools. Wear personal protective equipment.

6.2 Environmental precautions

In case of a release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify the appropriate emergency services.

6.3 Methods and material for containment and cleaning up

Collect the damaged packaging mechanically. Embank the larger leakage and pump it out, collect the smaller leakage with non-flammable liquid-absorbing materials (e.g. sand, soil, vermiculite) and place it in properly labelled containers. Dispose of the collected material as waste. Clean the contaminated place. Do not use sparking tools.

6.4 Reference to other sections

For disposal of product waste, see section 13. Personal protective equipment, see section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Observe the safety and security regulations. Wash your hands thoroughly before breaks and after handling the product. Do not eat, drink or smoke when using the product. Avoid contact with eyes and skin. Wear personal protective equipment. Avoid inhalation of aerosol. Ensure adequate general and/or local ventilation. Eliminate ignition sources – do not use open fire, do not smoke, do not use sparking tools and clothing made of fabrics susceptible to static cling; protect containers from heat. Do not spray over an open flame or glowing material. Prevent accumulation of electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry and cool place only. Keep away from sources of ignition and heat. On the premises of the warehouse, observe the ban on smoking and on use of open flame and sparking tools. Avoid direct sunlight. Do not pierce or burn containers, even after use. Keep away from food, foodstuffs and animal feeds and incompatible materials (see subsection 10.5). Keep out of the reach of children and pets.

7.3 Specific end use(s)

No information available on applications other than those listed in Section 1.2.

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Section 8: Exposure controls/personal protection

8.1 Control parameters

Specification	MAC	STEL	STEL-C	PCB
ethanol [CAS 64-17-5]	1900 mg/m ³	—	—	—
silver [CAS 7440-22-4] – inhalable fraction	0.05 mg/m ³	—	—	—

Legal basis: Journal of Laws 2018, item 1286.

Recommended monitoring procedures

Procedures should be in place to monitor the air concentrations of hazardous components and, where available and justified at the workplace, to control the cleanliness of the air in the workplace in accordance with relevant Polish or European Standards, taking into account the conditions at the exposure site and the appropriate measurement methodology adapted to the working conditions. The mode, type and frequency of tests and measurements should meet the requirements of the Regulation of the Minister of Health of 2 February 2011 (Journal of Laws of 2011 No. 33, item 166, as amended).

DNEL values

ethanol [CAS 64-17-5]

inhalation route: 950 mg/m³
 dermal route: 343 mg/kg/day

silver [CAS 7440-22-4]

inhalation route, long-term exposure, worker: 0.1 mg/m³
 inhalation route, long-term exposure, consumer: 0.04 mg/m³
 ingestion route, long-term exposure, consumer: 1.2 mg/kg

PNEC values

ethanol [CAS 64-17-5]

freshwater: 0.96 mg/l
 seawater: 0.79 mg/l
 seawater sediment: 3.6 mg/kg
 soil: 0.63 mg/kg
 sewage treatment plant: 580 mg/l

silver [CAS 7440-22-4]

freshwater: 0.04 mg/l
 seawater: 0.86 mg/l
 seawater sediment: 438.13 mg/kg
 freshwater sediment: 438.13 mg/kg
 soil: 1.41 mg/kg
 sewage treatment plant: 0.025 mg/l

8.2 Exposure controls

Observe the general safety and hygiene regulations. Avoid contact with eyes and skin. Remove contaminated clothing immediately. In the workplace, general and/or local ventilation must be provided to keep the concentration of the harmful agents in the air below the set limit value. Do not eat, drink or smoke while working. Before break and after work, wash hands carefully. If during operations, there is a risk of the employees' clothes igniting, no more than 20 m in the horizontal line from the workstations where these operations are carried out, rescue showers (safety showers) for washing the whole body and separate showers for washing the eyes should be installed.

Hand protection

Wear protective gloves resistant to the product in accordance with EN 374. Recommended material: nitrile, neoprene, butyl rubber > 0.5 mm thick and breakthrough time > 480 minutes. In case of splashing, use polychloroprene gloves > 0.65 mm thick and a breakthrough time > 120 minutes.

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When using protective gloves in contact with chemical products, it should be borne in mind that the stated performance levels and corresponding breakthrough times do not indicate the actual protection time at the workplace, as this protection is influenced by many factors, such as temperature, other substances, etc. It is recommended to replace the gloves immediately if there are any signs of wear, damage or changes in appearance (colour, flexibility, shape). The manufacturer's instructions must be observed not only for the use of the gloves but also for their cleaning, maintenance and storage. It is also important to remove the gloves correctly to avoid contaminating your hands when doing so.

Body protection

Wear protective clothing and non-slip safety footwear.

Eye protection

EN 166 certified tight safety glasses are recommended.

Inhalation protection

It is not required under normal conditions of use. In case of high gas/vapour concentrations, use respiratory protective equipment with type A filter. Where the oxygen concentration is $\leq 19\%$ and/or the maximum concentration of the toxic substance in the air is $\geq 1,0\%$ by volume, use insulating equipment.

The personal protective equipment used must meet the requirements of Regulation (EU) 2016/425. The employer is obliged to provide protective equipment appropriate to the activities performed and meeting all quality requirements, including their maintenance and cleaning.

Environmental exposure controls

Avoid release to the environment, do not discharge into drains, soil, sewage or watercourses. Possible emissions from ventilation systems and process equipment should be checked to determine their compliance with the requirements of environmental laws.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

state of aggregation/formality:	liquid in an aerosol container
colour :	light yellow
odour:	distinctive, alcoholic
odour threshold:	not determined
pH-value:	around 7
meltingpoint/freezingpoint:	not determined
initial boiling point	
and boiling range:	> 35 °C
ignition temperature:	< 21 °C
evaporation rate:	not determined
inflammability (solid, gaseous):	extremely flammable
upper/lower explosive limits:	not determined
vapour pressure:	not determined
vapour density:	not determined
relative density:	0.81 ± 0.01 kg/m ³ (20 °C; for ethanol)
solubility:	789 kg/l (for ethanol)
n-octanol/water partition coefficient:	not determined
autoignition temperature:	not determined
decomposition temperature:	not determined
explosive properties:	product vapours may form explosive mixtures with air
oxidizing properties:	no evidence
viscosity :	not determined

9.2 Other information

No additional test results.

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Section 10: Stability and reactivity

10.1 Reactivity

Product is reactive. Product vapours may form explosive mixtures with air. More information in subsections: 10.3-10.5.

10.2 Chemical stability

When used and stored correctly, the product is stable.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Avoid heat and fire sources, direct sunlight, temperatures above 50 °C, static electricity, sparks, hot surfaces.

10.5 Incompatible materials

Strong oxidants, reducing agents, strong acids, strong bases, acid chlorides, ammonia.

10.6 Hazardous decomposition products

Unknown.

Section 11: Toxicological information

11.1 Information on toxicological effects

Toxicity of components

ethanol [CAS 64-17-5]

LC ₅₀ (inhalation route, rat):	20000 ppm/ 10h
LC ₅₀ (inhalation route, mouse):	39 mg/m ³
LD ₅₀ (oral route, rat):	7060 mg/kg
LD ₅₀ (oral route, mouse):	3450 mg/kg
LD ₅₀ (oral route, rabbit):	6300 mg/kg

silver [CAS 7440-22-4]

LD ₅₀ (oral route, rat):	3731 mg/kg
LD ₅₀ (oral route, mouse):	1027 mg/kg
LC ₅₀ (inhalation route, rat):	> 5.16 mg/l
LD ₅₀ (dermal route, rat):	> 2000 mg/kg
LD ₅₀ (dermal route, guinea pig):	< 348 mg/kg

Toxicity of the mixture

Acute toxicity

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

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STOT – Single Exposure

Based on available data, the classification criteria are not met.

STOT – Repeated Exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Section 12: Ecological information

12.1 Toxicity

Toxicity of components

ethanol [CAS 64-17-5]

LC ₅₀ (fish):	8140 mg/l/48 h/ <i>Leuciscus idus</i>
UE ₅₀ (daphnia):	9268 - 14221 mg/l/ 48 h/ <i>Daphnia magna</i>
IC ₅₀ (algae):	5000 mg/l/ 7 d/ <i>Scendesmus quadricauda</i>
UE ₅₀ (bacteria):	6500 mg/l/ 16h/ <i>Pseudomonas putida</i>

silver [CAS 7440-22-4]

LC ₅₀ (fish):	1.2 µg/l/96 h/ <i>Pimephales promelas</i>
	10.2 µg/l/96 h/ <i>Oncorhynchus mykiss</i>
	139 µg/l/96 h/ <i>Oryzias latipes</i>
NOEC (fish)	130 µg/l/28 d/ <i>Menidia berylline</i>
	0.351 µg/l/32 d/ <i>Pimephales promelas</i>
EC ₁₀ (fish)	0,44 µg/l/32 d/ <i>Pimephales promelas</i>
LC ₅₀ (invertebrate)	0.22 µg/l/48 h/ <i>Daphnia magna</i>
EC ₁₀ (invertebrate)	2.48 µg/l/7 d/ <i>Ceriodaphnia dubia</i>
EC ₁₀ (algae)	0.16 µg/l/15 d/ <i>Nostoc muscorum</i>
EC ₁₀ (algae)	0.41 µg/l/24 h/ <i>Pseudokirchneriella subcapitata</i>
EC ₁₀ (aquatic plants)	14.8 µg/l/3 weeks <i>Salvinia natans</i>

Toxicity of the mixture

The product is not classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Data for components:

ethanol [CAS 64-17-5]

The substance is easily biodegradable.

12.3 Bioaccumulative potential

Data for components:

ethanol [CAS 64-17-5]

Bioaccumulation is not to be expected.

silver [CAS 7440-22-4]

BCF: 4.59

12.4 Mobility in soil

Gaseous components spread rapidly in the air. Mobility of the mixture components depends on their hydrophilic and hydrophobic properties as well as the abiotic and biotic conditions of the soil, including its structure, climatic conditions, season and soil organisms.

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12.5 Results of PBT and vPvB assessment

The product does not contain components meeting the PBT or vPvB criteria in accordance with Annex XIII of the REACH Regulation.

12.6 Other adverse effects

The mixture is not classified as hazardous to the ozone layer. Other harmful effects of the mixture components on the environment (e.g. endocrine-disrupting properties, global warming potential) should be considered.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the mixture: do not put into the drains. Use the product up completely if possible. If impossible, dispose of in accordance with all applicable regulations. Send the product to an authorised waste disposal plant. The waste code should be assigned at the place of its production. Proposed waste code: 16 05 04* (Gases in pressure containers (including halons) containing hazardous substances).

Recommendations for used packaging: the classification of this waste meets the requirements for hazardous waste. Send the packaging to an authorised company. Do not mix with other waste. Do not burn or pierce an empty packaging. The waste code should be assigned at the place of its production.

EU legislation: Directives of the European Parliament and of the Council: 2008/98/EC as amended, and 94/62/EC, as amended.

National legislation: (Journal of Laws of 2013, item 21, as amended), (Journal of Laws of 2013, item 888, as amended).

Section 14: Transport information

14.1 UN number

UN 1950

14.2 UN proper shipping name

AEROSOLS, flammable

14.3 Transport hazard class(es)

2 (label 2.1)

14.4 Packing group

Not applicable.

14.5 Environmental hazards

The mixture does not pose a risk to the environment according to the criteria of the transport regulations.

14.6 Special precautions for user

Avoid sources of ignition and fire. Items of the consignment should not be dropped or exposed to impacts. Dishes shall be placed on the vehicle or in the container in such a way that they cannot tip over or fall. If the pallets loaded with items have been stacked, each layer of pallets should be evenly distributed over the preceding layer and, if necessary, pads of sufficiently strong material should be used.

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

Not applicable.



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Section 15: Regulatory information

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

Act of 25 February 2011 on Chemical Substances and their Mixtures (Journal of Laws of 2011, No. 63, item 322, as amended).
 Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the working environment. (Journal of Laws 2018, item 1286).
 European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
 Act of 14 December 2012 on Waste (Journal of Laws 2013, item 21 as amended).
 Act of 13 June 2013 on the management of packaging and packaging waste (Journal of Laws of 2013, item 888, as amended).
 Regulation of the Minister of Climate of 2 January 2020 on the waste catalogue (Journal of Laws 2020, item 10)
 Regulation of the Minister of Health of 2 February 2011 on tests and measurements of factors harmful to health in the working environment (Journal of Laws 2011, No. 33, item 166, as amended).
REGULATION (EU) 2016/425 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.
REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (as amended).
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 (as amended).
COMMISSION REGULATION (EU) NO 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives (as amended).
EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE 94/62/EC of 20 December 1994 on packaging and packaging waste (as amended)
REGULATION (EU) No 528/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 May 2012 concerning the making available on the market and use of biocidal products
 Act of 9 October 2015 on biocidal products (Journal of Laws of 2015, item 1926).
 Regulation of the Minister of Economy of 5 March 2009 on detailed requirements for aerosol products (Journal of Laws No. 188, item 1460 as amended).

15.2 Chemical safety assessment

Chemical safety assessment for the mixture is not required.

Section 16: Other information

The full text of H-phrases from Section 3 of the Safety Data Sheet

H225 Highly flammable liquid and vapour.

Clarification of aberrations and acronyms

MAC	Maximum Admissible Concentration
STEL	Short-term Exposure Limits
STEL-C	Maximum Admissible Ceiling Concentration
PCB	Admissible Concentration in Biological Material
PBT	Persistent, Bioaccumulative and Toxic Substances
vPvB	Very persistent and very bioaccumulative substances
Flam. Liq. 2	Flammable liquid substance cat. 2
Aerosol 1	Aerosol product cat. 1

Training

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo proper workplace training. Persons involved in the transport of hazardous materials under the ADR Agreement should be adequately trained in their duties (general, workplace and safety training).

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References to key literature and data sources

The safety data sheet has been prepared on the basis of the safety data sheet provided by the supplier and the knowledge and experience available, taking into account current legal regulations.

Classification and procedures used to classify a mixture in accordance with EC Regulation 1272/2008

The classification was made on the basis of physicochemical data of the mixture and content of hazardous components using a calculation method based on the guidance of Regulation 1272/2008/EC (CLP), as amended.

Additional information

Update date: 28.01.2020
Version: 5.0/PL
Amendments: Sections 1-16

This Safety Data Sheet cancels and replaces all preceding SDS for this product.

The information above is based on currently available data concerning the product, but also on the experience and knowledge in this field of the manufacturer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as an aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.