

**HAZARDOUS PRODUCT SAFETY DATA SHEET****Nanosilver - antifog**

Prepared on 01.02.2007

rev. 01.02.2007

Made in accordance with the Ordinance of Health Minister of 14.12.2004 (published in Journal of Laws No.2, Item 8) and Directive 91/155/EEC

**1. PRODUCT AND COMPANY IDENTIFICATION****Trade name**

NANO ANTI FOG

**Application**

Product is used for prevention of window panes, mirrors, etc. from fogging up.

**Manufacturer:****Amtra Sp. z o. o.**

tel. 32 294 41 00 fax 32 294 41 39

Ul. Schonów 3, 41-200 Sosnowiec

[www.amtra.pl](http://www.amtra.pl)**2. COMPOSITION / INFORMATION ON INGREDIENTS***Synonyms:* mixture of alcohols, auxiliary agents and nano-components.*CAS No.:* not applicable*Molecular weight:* not applicable*Chemical formula:* not applicable*EINECS No.:* not applicable

Hazardous ingredients:

Ingredients	CAS No.	EINECS No.	%	Risk symbols & R-Phrases *
Ethanol	64-17-5	200-578-6	>20%	F, R11
Isopropanol	67-63-0	200-661-7	>20%	F, Xi, R:11, 36, 67

\* explanations – see Sec.16

**3. HAZARD IDENTIFICATION**

Product has been classified as hazardous according to *The Ordinance Of Health Minister Of Sep 2, 2003 On Criteria And Way Of Classification Of Chemical Substances And Preparations* ( Published in Journal of Laws No.171, Item 1666).

Highly inflammable (F), Irritating (Xi).

*Hazards when not properly handled:* State of drunkenness, dry skin, eye irritation, dizziness, drowsiness.

*Health hazards:* Product may cause eye irritation, skin dryness and infections.

*Environment hazards:* Product does not constitute any serious risk to environment.

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**4. FIRST AID MEASURES**

*Inhalation:* Remove the victim from exposure site to fresh air and keep at rest. If the symptoms persist, seek medical advice. In case of breathing interruption, resuscitate the victim.

*Eye Exposure:* Remove immediately contact lenses if used by the victim. Flush eyes with plenty of water, keeping eyelids open. Seek advice of ophthalmologist .

*Skin Exposure:* Remove contaminated clothes. Wash affected skin area with hot water.

*Ingestion:* Rinse mouth with water. Make the victim drink approx.1-2 l water and eat activated carbon. Do not provoke vomiting. Consult the case with physician, showing him the product label. Do not give anything to drink if the victim is unconscious.

**5. FIRE-FIGHTING MEASURES**

*Fire hazard:* Product is highly flammable.

*Fire fighting:* If possible, remove (isolate) containers with product from exposure site. Cool down containers with product using strong water stream. Use extinguishing media recommended below for fire extinguishing. Dispose post-fire residuals along with extinguishing water in compliance with local regulations.

*Recommended extinguishing media:* Alcohol-resistant foam, CO2 aggregates, powders or water spray

*Inappropriate extinguishing media:* Concentrated waterjet.

*Hazardous decomposition products:* Hazardous decomposition products may form during product combustion

*Personal Protective Equipment:* Use of protective clothes and self-contained breathing apparatus is recommended.

**6. ACCIDENTAL RELEASE MEASURES**

*General:* In case of major spillage, isolate contaminated area and evacuate strangers to outside. First of all, isolate and secure source of environment contamination. Remove all possible ignition sources. Collect spilled product and transfer it for disposal. Call rescue brigade, if necessary.

*Individual precautions:* Avoid contact of eyes and skin with product. Do not inhale vapours. Wear protective clothes, gloves, and respiratory way protection.

*Environment Precautions:* Limit or remove spillage. Embank stains of spilled product. Do not allow for entry of the product into drains, water reservoirs or surface waters. If possible, return the product for re-use. Absorb residual contamination by sand or diatomite, put into appropriate containers and incinerate in appropriate conditions or dispose to designated disposal yards. Observe local regulations.

Further information of waste disposal – see Sec. 8 and 13

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**7. HANDLING AND STORAGE**

*Handling:* Do not drink, eat or use any drugs while handling. Avoid contact with liquid, do not inhale nor ingest the product. Respect good personal hygiene and safety-at-work regulations. Wear protective clothes. Provide proper ventilation of working area. Remove contaminated clothes.

*Storage:* Store the product in labelled, tightly closed original containers in well ventilated, shadowed area away from direct sunlight and fire sources. Recommended storage temperature: 5-35°C. Do not store in vicinity of foodstuffs, animal food or sources of drinking water.

**8. EXPOSURE CONTROL AND PERSONAL PROTECTION**

Product contains ingredients hazardous to human health when present in working place (in accordance with the *Regulation On Maximum Admissible Concentrations Depending On Exposure Time During Working Shift* as amended (published in Journals of Laws No.217 of 29.11.2002, Item 1833 and No.212 of 10.10.2005, Item 1769).

Specific control parameter

<b>Name</b>	<b>CAS No.</b>	<b>MAC ( mg/m<sup>3</sup> )</b>	<b>MACCh ( mg/m<sup>3</sup> )</b>
Isopropanol	67-63-0	900	1200
Ethanol	64-17-5	1900	----

*General:* Eye flushing and Personal Protective Equipment should be available at working place.

*Respiratory way protection* Product is not hazardous when normally used. Use protection of respiratory ways with filter in case of high product concentration and/or improper ventilation or when aerosol has been formed.

*Eye protection:* Wear protective goggles.

*Hand protection:* Wear protective gloves.

*Skin protection:* Wear working clothes and footwear.

*Safety-at-work:* Provide eye flushing equipment in hazardous areas.

*Technical solutions:* When handling the product, use appropriate protective measures for minimizing contact with the product and for improvement of safety-at-work conditions.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Liquid
Colour:	colourless
Odour:	alcohol
pH:	not applicable
Freezing point:	-114 °C
Boiling point:	78-84 °C
Flash point:	12 °C
Autoignition point:	422 °C
Flammability:	highly flammable
Explosion limits:	
upper:	19%
lower:	2,8%
Oxidizing properties:	not applicable
Density at 20°C:	0,78 g/cm <sup>3</sup>
Relative density vs. air:	1,59

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Solubility:  
 In water: soluble  
 In organic solvents: soluble in most organic solvents,

**10. STABILITY AND REACTIVITY**

*Stability:* Product is stable in normal conditions  
*Conditions to avoid:* Potential ignition sources  
*Materials to avoid:* Strong oxidizers, strong acids, open fire  
*Hazardous decomposition products:* Carbon monoxide may form during combustion. Vapours may form explosive mixture with air.

**11. TOXICOLOGICAL INFORMATION**

Toxicological information pursuant to ESIS:

<b>Ingredients</b>	<b>CAS - no</b>	<b>Dose</b>	<b>Value</b>	<b>Measurement unit</b>
Isopropanol	67-63-0	Ingestion LD <sub>50</sub> for rat	5045	mg/kg
		Inhalation LD <sub>50</sub> for rat	16000	Ppm/8h
		Skin LD <sub>50</sub> for rabbit	1200	mg/kg
		Ingestion LDL <sub>0</sub> for human	3571	mg/kg
Ethanol	64-17-5	Ingestion LD <sub>50</sub> for rat	6200	mg/kg
		Inhalation LD <sub>50</sub> for rat	>8000	mg/l/4h
		Skin LD <sub>50</sub> for rabbit	>20000	mg/kg

*Acute toxicity:* None  
*Inhalation exposure:* Product may cause irritation  
*Skin exposure:* Product may cause skin irritation, redness and itching.  
*Eye exposure:* Product may irritate eyes and cause cornea infection.  
*Ingestion:* Stomach-ache, nausea and vomiting. Product may irritate mouth, oesophagus and alimentary canal. Larger amounts of the product may cause coma.  
*Chronic exposure consequences:* Irritation of mucous membranes of eyes and respiratory ways, lacrimation, exhaustion, drowsiness, nausea and headache, stomach-ache.  
*Allergic effects:* None  
*Irritating effects:* Product may irritate skin, eyes and respiratory ways  
*Mutagenic effects:* None  
*Carcinogenic effects:* None  
*Reproduction effects:* None

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**12. ECOLOGICAL INFORMATION**

Impact on reference species – information after ESIS

<b>Ingredients</b>	<b>CAS - no</b>	<b>Dose</b>	<b>Value</b>	<b>Measurement unit</b>
Ethanol 1	64-17-5	LC <sub>50</sub> – fish	8140	mg/l (48h)
		EC <sub>50</sub> – invertebrates	9266-14221	mg/l (48h)
		EC <sub>5</sub> – algae	5000	mg/l (7d)
Isopropanol	67-63-0	LC <sub>50</sub> – fish	9640	mg/l (96h)
		EC <sub>50</sub> – invertebrates	13299	mg/l (48h)
		IC <sub>50</sub> – algae	>1000	mg/l (72h)

*Mobility:* Biodegradable product  
*Bio-degradability:* Product is unlike to accumulate in the environment  
*Abiotic decomposition:* No data available  
*Bioaccumulation:* No data available  
*Toxicity for aquatic organisms:* No data available

**13. DISPOSAL CONSIDERATIONS**

*Waste code:* 14 06 03 - other solvents and solvent mixtures  
*Handling:* Wastes are classified as hazardous. Whenever possible they should be recycled and returned to a full-value product. Wastes shall be incinerated in licensed waste incineration plant or disposed on a designated disposal yard.  
*Contaminated packaging:* Whenever possible, use returnable containers. Flush containers with demineralised water. If required, incinerate in licensed waste incineration plant or disposed on a designated disposal yard.

Wastes should be disposed with observance of national and local regulations. Adhere to the regulations stipulated in the following acts published in: Journal of Laws No.62 Item 628 of 27.04.2001, Journal of Laws No. 63 Item 638 of 11.05.2001, Journal of Laws No. 6112 Item 1206 of 27.09.2001, Journal of Laws No. 7 Item 78 of 19.12.2003, Journal of Laws No. 11 Item 97 of 18.12.2003, Journal of Laws No. 116 Item 1208 of 20.04.2004, Journal of Laws No.25 Item 221 of 10.02.2004, Journal of Laws No.191 Item 1595 of 30.10.2002)

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**14. TRANSPORT INFORMATION**

Store away from foodstuffs.

ROAD TRANSPORTATION

ADR / RID

UN-No.: 1987 ADR Class: 3

Packaging Group: III Classification code: F1

Consignment name: ALKOHOLS (ETHANOL, ISO-PROPANOL)

Identification: 3 Hazard ID-code: 30

SEA TRANSPORTATION

IMDG / IMO

UN No.: 1987 Class: 3

Packaging Group: III EmS: F-E,S-D

Environmentally Hazardous Substance: Identification: 3

AIR TRANSPORTATION

IATA / ICAO

UN No: 1987 Class: 3

Packaging Group: III Packaging Instruction: 309(P&CA); 310(CAO)

Consignment name: ALKOHOLS (ETHANOL, ISO-PROPANOL)

**15. REGULATORY INFORMATION**

*Warning symbols on product packaging labels:*



**Xi**

Irritant



**F**

Highly flammable product

*Warning advice on product packaging labels*

*Risk-phrases R*

R 11 Highly flammable

R36 Irritating to eyes

R67 Vapours may cause drowsiness and dizziness

*Safety phrases S*

S1/2 Keep locked up and out of the reach of children

S7 Keep container tightly closed

S 24/25 Avoid contact with skin and eyes

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

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#### *Legal basis*

- 1 Directive 91/155/EEC of March 5, 1991.
- 2 Ordinance of the Economy Minister of March 5, 2001 On Detailed Rules For Disposal, Use And  
Neutralization Of Hazardous Wastes. (Published in Journal of Laws No.22, Item 251)
- 3 Ordinance Of Environment Minister Of September 27, 2001 On Waste Catalogue (Published in  
Journal of Laws No.112, Item 1206)
- 4 Classification Of Hazardous Goods In Accordance With The European Agreement Concerning  
The International Carriage Of Dangerous Goods By Road (ADR) (effective 01.07. 2001).
- 5 Chemical Substance and Preparation Act of July 5, 2002 (Published in Journal of Laws  
No.142,Item 1187).
- 6 Ordinance of Health Minister of Sep 2, 2003 on Criteria and Way of Substance and Preparation  
Classification (Published in Journal of Laws No.171, Item 1666).
- 7 Ordinance of Health Minister of July 14, 2002 on Obligation to Provide Safety Data Sheets For  
Some Preparations Not Classified To Hazardous Goods. (Published in Journal of Laws No.142, Item  
1194).
- 8 Ordinance of Health Minister of July 3, 2002 on Hazardous Substance and Preparation Safety Data  
Sheets (Published in Journal of Laws No.140, Item 1171).
- 9 Ordinance of Labor and Social Policy Minister of Nov 29, 2002 on Maximum Admissible  
Concentrations and Intensities of Agents Hazardous to Health In Work Environment (Published in  
Journal of Laws No.217, Item 1833).
- 10 Ordinance of Labor and Social Policy Minister of Oct 10, 2005 amending the Ordinance of Labor  
and Social Policy Minister of Nov 29, 2002 on Maximum Admissible Concentrations and  
Intensities of Agents Hazardous to Human Health In Work Environment (Published in Journal of  
Laws No 212 Item 1769)
- 11 Ordinance of Health Minister of Sep 28, 2005 On List Of Hazardous Substances Along With Their  
Classification And Identification (Published in Journal of Laws No.201, Item 1674).
- 12 Ordinance of Health Minister of Jan 17, 2003 on Hazardous Preparations For Which Safety Data  
Sheets Are Not Required (Published in Journal of Laws No.19, Item 170)
- 13 Ordinance of Health Minister of Feb 18, 2003 On Details To Be Provided To Inspector Of Chemical  
Substances And Preparations By Producer Or Importer In Case Of Introduction Of Certain New  
Substances For Circulation In The Territory Of The Republic Of Poland (Published in Journal of  
Laws No.50, Item 436)
- 14 Ordinance of Health Minister of Feb 18, 2003 on details to be provided by the applicant in  
documentation for assessment of risk created by new substance to human health and environment  
(Published in Journal of Laws No.50, Item 437).
- 15 Ordinance of Health Minister of March 14, 2003 On The Way Of Identification Of Places, Pipelines,  
Containers And Tanks For Storage Of Or Containing Hazardous Substances Or Preparations  
(Published in Journal of Laws No.61, Item 552).
- 16 Ordinance of the Economy Minister of May 31, 2003 on Essential Requirements for Personal  
Protective Equipment (Published in Journal of Laws No.80, Item 725).
- 17 Ordinance of Health Minister of Feb 18, 2003 On Determination Of Limits For Entry Of New  
Substances Into Circulation And Scopes And Types Of Tests To Be Performed Once The Said  
Limits Have Been Exceeded (Published in Journal of Laws No.50, Item 438).
- 18 Ordinance of Health Minister of Dec 14, 2004 on Amendment of the Ordinance on Hazardous  
Substance And Preparation Safety Data Sheet (Published in Journal of Laws No.2, Item 8).
- 19 Ordinance of Health Minister of Jan 13, 2004 On Chemical Substances Comprised In Products Or  
Being In Circulation, Which Are Subject To Reporting. (Published in Journal of Laws No.12, Item  
111).
- 20 Ordinance of Health Minister of Apr 30, 2004 On Hazardous Substances And Preparations, Which  
Are To Be Kept In Packaging With Child Safety Lock And Bearing Hazard Warning Advice Made  
In Form Able For Sensing By Blind Persons (Published in Journal of Laws No.128, Item 1348).
- 21 Ordinance of Health Minister of Dec 1, 2004 On Substances, Preparations And Technological  
Processes Of Carcinogenic Or Mutagenic Effects Present In Work Environment (Published in

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- Journal of Laws No.280, Item 2771).  
Ordinance of Health Minister of Jan 12, 2005 On The Way Of Assessment Of Risk Created By New  
22 Substances To Human Health And Natural Environment (Published in Journal of Laws No.16, Item  
138).  
Ordinance of Labor and Social Policy Minister of Feb 21, 2005 On Restrictions Of , Prohibition Of  
23 Or Specific Conditions For Production, Circulation Or Application Of Hazardous Substances And  
Preparations And Products Containing Such Hazardous Substances And Preparations (Published in  
Journal of Laws No.39, Item 372).

**16. OTHER INFORMATION**

***Explanation of symbols used in this document:***

Xi Irritant  
F Highly flammable  
R11 Highly flammable  
R36 Irritating to eyes  
R67 Vapours may cause drowsiness and dizziness

***For further information – please contact:***

Amtra Sp. z o.o.  
tel. 32 294 41 00 fax 32 294 41 39  
Ul. Schonów 3, 41-200 Sosnowiec  
www.amtra.pl

***Additional Information***

All data provided in this Safety Data Sheet are based on our current knowledge of the product and have been given as an aid for safe handling, transportation and storage of the product and for taking proper measures in case of its accidental release or fire.

This information shall not be deemed as any product guarantee or specification and may not be used as the basis for any legal liability nor for guarantee of the product properties.

Use of the data comprised herein and the manner by which the product is used are beyond the control of the manufacturer. The User is solely obliged to take proper actions to get compliance with provisions of applicable national laws.