

SAFETY DATA SHEET

according to Regulation (EU) No 453/2010
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agpure® W10
Release date: 31/07/2020

RAS AG, D-93055 Regensburg

Replaces the release of 07/09/2017

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1. Product identifier:
agpure® W10
- 1.2. Relevant identified uses of the mixture and uses advised against:
Additive for the antimicrobial functionalization of film-forming substrates such as paints, varnishes, resins, polymers and other dispersions.
- 1.3. Details of the supplier of the safety data sheet:
RAS AG
An der Irlrer Höhe 3a
93055 Regensburg, Deutschland
E-mail: office@ras-ag.com
- 1.4. Emergency telephone number: +49 (0) 89 19240
(Giftnotruf München – permanently manned)

SECTION 2: HAZARDS IDENTIFICATION

- 2.1. Classification of the mixture:

Classification according to Regulation 1272/2008/EC (CLP):
Hazardous to the aquatic environment, Acute 1 – H400
Hazardous to the aquatic environment, Chronic 1 – H410

Warning **H statements:**
H400 – Very toxic to aquatic life.
H410 – Very toxic to aquatic life with long lasting effects.
- 2.2. Label elements:

GHS09



WARNING

Warning **H statements:**
H400 – Very toxic to aquatic life.
H410 – Very toxic to aquatic life with long lasting effects.

Precautionary **P statements:**
P273 – Avoid release to the environment.
P391 – Collect spillage.
P501 – Disposal of contents/container in accordance with local/regional/national/international regulations.

Note:
The label shall contain the following information clearly legible and indelible:
This product contains a nanomaterial: silver (nano).

- 2.3. Other hazards:
Mixture not intended for general public use.
Dried product can be self-igniting, especially when in contact with combustible materials.
Results of PBT and vPvB assessment: no data available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1. Substance:
Not applicable.

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3.2. Mixture:

Description: the mixture is an aqueous dispersion and contains nanosilver (spherical, <100nm). Mechanical treatment like grinding or polishing does not release free nanosilver particles from cured films.

Hazardous components:

Description	CAS number	EU number	REACH reg. nr.	Conc. (%)	Classification: 1272/2008/EC (CLP)		
					Hazard pict.	Hazard cat.	H phrase
Ammonium nitrate*	6484-52-2	229-347-8	-	< 8	GHS03 GHS07 Warning	Ox. Sol. 3 Skin Irrit. 2 Eye Irrit. 2 STOT SE 3	H272 H315 H319 H335
Silver, metallic**	7440-22-4	231-131-3	-	5 – 15	GHS09 Warning	Aquatic Acute 1 M-factor=10 Aquatic Chronic 1 M-factor=10	H400 H410

*: Substance classified by the manufacturer or substance which has no obligatory classification according to EU regulations.

** : Substance with workplace exposure limits

For the full text of H phrases: see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

General information:

Consult a physician.

Show this safety data sheet to the attending physician.

IN CASE OF INGESTION:

Measures:

- Wash out mouth.
- Do not induce vomiting.
- Do not give the victim anything orally if the victim is unconscious.
- In case of complaints, obtain medical help.

IN CASE OF INHALATION:

Measures:

- Remove the victim into fresh air.
- In case of complaints, obtain medical help.

IN CASE OF SKIN CONTACT:

Measures:

- Remove contaminated clothes.
- Wash skin surface with plenty of water.
- In case of complaints, obtain medical help.

IN CASE OF EYE CONTACT:

Measures:

- In case of contact with eyes flush with water holding eyelids apart and moving the eyeballs.
- Contact an ophthalmologist.

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

No data available.

4.3. Indication of any immediate medical attention and special treatment needed:

No data available.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media:

5.1.1. Suitable extinguishing media:

Product does not burn when using evaporating water.

5.1.2. Unsuitable extinguishing media:

None known.

5.2. Special hazards arising from the substance or mixture:

In case of fire ammonia, carbon monoxide, oxides of nitrogen and organic fission products may be formed. The inhalation of such combustion products can have serious adverse effects on health.

5.3. Advise for fire fighters:

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Wear full protective clothing and self-contained breathing apparatus.
Dry residue has a fire-promoting effect, so keep flammable substances away.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment and emergency procedures:
6.1.1 For non-emergency personnel:
Keep unprotected people away, allow only well trained experts wearing suitable protective clothing to abide in the field of accident.
6.1.2. For emergency responders:
See section 8.
6.2. Environmental precautions:
Dispose the spillage and the resulting waste according to the applicable environmental regulations. Do not allow the product and the resulting waste to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.
6.3. Methods and material for containment and cleaning up:
Collect the spilled product with inert, non-combustible absorbent, then place into a suitable, closed, properly labelled chemical waste container for removal/disposal.
6.4. Reference to other sections:
For further and detailed information see section 8 and 13.

SECTION 7: HANDLING AND STORAGE

- 7.1. Precautions for safe handling:
Observe conventional hygiene precautions.
Avoid contact with eyes and skin.
Avoid aerosol formation.
Technical measures:
Ensure adequate ventilation.
Keep container tightly closed.
Precautions against fire and explosion:
Dried product can ignite spontaneously, treat endangered areas with water spray.
7.2. Conditions for safe storage, including any incompatibilities:
Technical measures and storage condition:
Store containers between 10 and 30 °C.
Packing material: no special requirements.
Storage class according to TRGS 510: LGK 5.1C: Ammonium nitrate and ammonium nitrate containing preparations
Incompatible materials: flammable substances, concentrated sulfuric acid and alkaline salts or solutions.
7.3. Specific end use(s):
No specific instructions available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1. Control parameters:

Occupational exposure limit values (Directive 2000/39/EC):
Silver, metallic (CAS: 7440-22-4): long term (8 hours): 0,1 mg/m³

DNEL		Routes of exposure	Exposure frequency:	Remarks:
Worker	Consumer			
no data available	no data available	Dermal	Short term (acute) Long term (repeated)	no data available
no data available	no data available	Inhalative	Short term (acute) Long term (repeated)	no data available
no data available	no data available	Oral	Short term (acute) Long term (repeated)	no data available

PNEC			Exposure frequency:	Remarks:
Water	Soil	Air		
no data available	no data available	no data available	Short term (single use) Long term (continuous)	no data available
no data available	no data available	no data available	Short term (single use) Long term (continuous)	no data available
no data available	no data available	no data available	Short term (single use) Long term (continuous)	no data available

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8.2. Exposure controls:

In case of a hazardous material with no controlled concentration limit it is the employer's duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.

8.2.1 Appropriate engineering controls:

In pursuance of work is proper foresight needed to avoid leaking onto clothes and floors and to avoid contact with eyes and skin.

Do not eat, drink or smoke during work.

Preventive skin protection.

8.2.2. Individual protection measures, such as personal protective equipment:

1. Eye/face protection: use appropriate protective glasses (EN 166).

2. Skin protection:

a. Hand protection: use appropriate nitrile rubber protective gloves (EN 374).

b. Other: use appropriate fireproof protective clothes.

3. Respiratory protection: in case of aerosol formation, use appropriate respiratory protective device (BekGS527).

4. Thermal hazard: none known.

8.2.3. Environmental exposure controls:

No specific prescription.

The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate applications. If conditions differ from normal or work is carried out under extreme conditions an expert's advice should be sought out before deciding upon further protective measures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Nanomaterials: Silver (spherical, <100nm)

Parameter

1. Appearance:	orange-brown liquid @20°C
2. Odour:	low
3. Odour threshold:	no data available
4. pH value:	7.2 ± 0.3
5. Melting point/ freezing point:	no data available
6. Initial boiling point/boiling range:	102 ± 2 °C
7. Flash point:	not applicable
8. Evaporation rate:	no data available
9. Flammability:	not applicable
10. Upper/lower flammability or explosive limits:	not applicable
11. Vapour pressure:	no data available
12. Vapour density:	no data available
13. Relative density:	no data available
14. Solubility(ies):	soluble in pure water in any proportion
15. Partition coefficient: n-octanol/water:	no data available
16. Self-ignition temperature:	not applicable
17. Degradation temperature:	no data available
18. Viscosity:	no data available
19. Explosive properties:	no data available
20. Oxidizing properties:	no data available

9.2. Other information:

Included nanomaterials: Silver (spherical, <100 nm)

Ignition temperature: not applicable.

Fire-promoting properties: applies to dry residue.

Explosive properties: not applicable.

Density (20 ° C): 1.2 ± 0.1 g / ml

Solvent separation test: not applicable.

Solvent content: not applicable.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Do not allow product to dry, dry residue may ignite spontaneously and has a fire-promoting effect.

Alkaline solutions release ammonia. Nitrous gases are formed with concentrated sulfuric acid.

10.2. Chemical stability:

Product is stable.

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- 10.3. Possibility of hazardous reactions:
None known.
- 10.4. Conditions to avoid:
Do not allow product to dry, dry residue may ignite spontaneously and has a fire-promoting effect.
- 10.5. Incompatible materials:
Alkaline solutions release ammonia. Nitrous gases are formed with concentrated sulfuric acid. See also section 7.
- 10.6. Hazardous decomposition products:
Only in case of fire, see section 5.2.

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. Information on toxicological effects:
Acute toxicity: none known.
Skin corrosion/irritation: none known.
Serious eye damage/eye irritation: none known.
Respiratory or skin sensitisation: none known.
Germ cell mutagenicity: none known.
Carcinogenicity: none known.
Reproductive toxicity: none known.
STOT-single exposure: none known.
STOT-repeated exposure: none known.
Aspiration hazard: none known.
- 11.1.1. For substances subject to registration, brief summaries of the information derived from the test conducted:
No data available.
- 11.1.2. Relevant toxicological properties of the hazardous substances:
Information about the ingredients:
Spherical nanosilver (CAS number: 7440-22-4):
LD50 Oral (rat): > 2000 mg/kg (OECD 423)
LD50 Dermal (Rat): > 2000 mg/kg (OECD 402)
Skin irritation - non-irritating (rabbit, OECD 404)
Eye irritation - non-irritating (rabbit, OECD 405)
- 11.1.3. Information on likely routes of exposure:
Ingestion, inhalation, skin contact, eye contact.
- 11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:
No data available.
- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure:
No data available.
- 11.1.6. Interactive effects:
No data available.
- 11.1.7. Absence of specific data:
No information.
- 11.1.8. Other information:
No data available.

SECTION 12: ECOLOGICAL INFORMATION

- 12.1. Toxicity:
Acute: Very toxic to aquatic life.
Chronic: Very toxic to aquatic life with long lasting effects.
- 12.2. Persistence and degradability:
Inorganic components are not biologically degradable.
- 12.3. Bioaccumulation potential:
No data available.
- 12.4. Mobility in soil:
No data available.
- 12.5. Results of PBT and vPvB assessment:
No data available.
- 12.6. Other adverse effects:
Water hazard class (WGK): 3 - extremely hazardous to the aquatic environment.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. Waste treatment methods:
Disposal according to the local regulations.
- 13.1.1. Information regarding the disposal of the product:
If recycling is not possible, waste must be disposed of in accordance with local regulations.
Do not empty into drains.

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European Waste Code:

16 10 03* aqueous concentrates containing dangerous substances

*: hazardous waste.

13.1.2. Information regarding the disposal of the packaging:

Dispose according to the relevant regulations.

European Waste Code:

15 01 02 plastic packaging

13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified:

None known.

13.1.4. Sewage disposal:

Do not allow product to reach ground water, water course or sewage system.

13.1.5. Special precautions for any recommended waste treatment:

No data available.

SECTION 14: TRANSPORT INFORMATION

14.1. UN Number:

3082

14.2. UN proper shipping name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver, metallic)

14.3. Transport hazard class(es):

9

Hazard identification number: 90

Tunnel Restriction Code: E

14.4. Packaging group:

III

14.5. Environmental hazard:

No relevant information available.

14.6. Special precautions for user:

Marine pollutant: yes.

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:

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

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

Commission Regulation (EU) 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)

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

Biocidal Regulation (EU) No 528/2012:

Registration numbers: N-73054

15.2. Chemical safety assessment: the mixture was not subject to a safety assessment.

SECTION 16: OTHER INFORMATION

Information regarding the revision of the safety data sheet: none.

Full text of the abbreviations in the safety data sheet:

DNEL: Derived no effect level.

PNEC: Predicted no effect concentration.

CMR effects: carcinogenicity, mutagenicity and toxicity for reproduction.

PBT: Persistent, bioaccumulative and toxic.

vPvB: Very Persistent, Very Bioaccumulative.

n.d.: not defined.

n.a.: not applicable.

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Methods used for the classification according to Regulation 1272/2008/EC:

Hazardous to the aquatic environment, Acute 1 – H400	Based on calculation method
Hazardous to the aquatic environment, Chronic 1 – H410	Based on calculation method

Relevant H-Phrases (number and full text) of Section 2 and 3:

H272 – May intensify fire; oxidiser.

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H335 – May cause respiratory irritation.

H400 – Very toxic to aquatic life.

H410 – Very toxic to aquatic life with long lasting effects.

Training advice: no data available.

This safety data sheet is developed on basis of the valid EU regulations and German regulations. It shows the present state of the knowledge and is no contractual warranty of quality properties of the product. These statements may not be changed or transferred to other products. Duplication in unchanged state is permitted.