

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Silbernitrat 5 % ig nach Fontana Masson

Revision date: 16.07.2014

Product code: 11377.xxxxx

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

1.1. Product identifier

Silbernitrat 5 % ig nach Fontana Masson

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

Use of the substance/mixture

Gebrauchsfertige Lösung Silbernitrat 5 %ig nach Fontana Masson zur Imprägnierung

Uses advised against

none

1.3. Details of the supplier of the safety data sheet

Company name:	MORPHISTO GmbH	
Street:	Weismüllerstr. 45	
Place:	D-60314 Frankfurt am Main	
Telephone:	+49 (0) 69 / 400 3019-60	Telefax: +49 (0) 69 / 400 3019-64
e-mail:	info@morphisto.de	
Internet:	http://www.morphisto.de	

1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Substance or mixture corrosive to metals: Met. Corr. 1

Skin corrosion/irritation: Skin Corr. 1B

Hazardous to the aquatic environment: Aquatic Chronic 1

Hazard Statements:

May be corrosive to metals.

Causes severe skin burns and eye damage.

Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

silver nitrate

ammonia ... %

potassium hydroxide; caustic potash

Signal word: Danger

Pictograms:



Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients
3.2. Mixtures
Chemical characterization

aqueous solution

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7761-88-8	silver nitrate			1 - < 5 %
	231-853-9	047-001-00-2		
	Ox. Sol. 2, Skin Corr. 1B, Aquatic Acute 1, Aquatic Chronic 1; H272 H314 H400 H410			
1336-21-6	ammonia ... %			1 - < 5 %
	215-647-6	007-001-01-2		
	Skin Corr. 1B, Aquatic Acute 1; H314 H400			
1310-58-3	potassium hydroxide; caustic potash			< 1 %
	215-181-3	019-002-00-8		
	Acute Tox. 4, Skin Corr. 1A; H302 H314			

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

Further Information

Für gewerblichen Anwender.

SECTION 4: First aid measures
4.1. Description of first aid measures
General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of inhaling spray mist, consult a doctor immediately and show him packing or label. Provide fresh air. In case of breathing difficulties administer oxygen.

After contact with skin

Remove contaminated, saturated clothing immediately. After contact with skin, wash immediately with: Water. In case of skin irritation, seek medical treatment.

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Call a physician immediately. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting.

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

No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray.
alcohol resistant foam.
dry extinguishing powder.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Nitrogen oxides (NO_x).
The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation.
Avoid contact with skin, eyes and clothes. @1501.B015718
Wear personal protection equipment. (See section 8.)

6.2. Environmental precautions

Discharge into the environment must be avoided. Cover drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Inform competent authorities in case of accidental release. (Larger quantities)

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the recovered material as prescribed in the section on waste disposal.
Rinse with water.
Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear suitable protective clothing. (See section 8.)
Use extractor hood (laboratory).

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

Avoid contact with skin, eyes and clothes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep only in the original container in a cool, well-ventilated place.

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Hints on joint storage

Do not store together with: Food and fodder. Oxidizing substances. Peroxides.

Further information on storage conditions

Keep container tightly closed in a cool, well-ventilated place. Protect against: UV-radiation/sunlight.

@1501.B015825

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7664-41-7	Ammonia, anhydrous	25	18		TWA (8 h)	WEL
		35	25		STEL (15 min)	WEL
1310-58-3	Potassium hydroxide	-	2		STEL (15 min)	WEL

8.2. Exposure controls



Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations. Use extractor hood (laboratory).

Protective and hygiene measures

Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Take off contaminated clothing.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses. DIN EN 166

Hand protection

Pull-over gloves of rubber. EN ISO 374

Butyl rubber. (0,5 mm)

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Laborkittel tragen

Respiratory protection

Respiratory protection necessary at:
generation/formation of aerosols

Generation/formation of mist

Suitable respiratory protective equipment:

Combination filtering device (EN 14387) Type : K / P2/P3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	flüssig	
Colour:	farblos	
Odour:	geruchlos	
pH-Value:		12

Changes in the physical state

Explosive properties

none

Oxidizing properties

none

Density (at 20 °C): 1,03-1,05 g/cm³

Solvent content: No information available.

9.2. Other information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable under normal storage and handling conditions.

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

Lösung nicht eintrocknen lassen. Behälter nach Gebrauch verschliessen.

Nicht über 28 °C lagern.

10.5. Incompatible materials

starke Reduktionsmittel, Azide, Nitride und Fulmate, starke Basen , flüssiger Ammoniak

10.6. Hazardous decomposition products

Stickoxide, Silbernitrit

Further information

Produkte die feste Niederschläge ausgebildet haben nicht mehr verwenden , ansäuern und entsorgen lassen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

Silbernitrat:

reizende bis ätzende Wirkung auf Schleimhäute und Haut; bei oraler Aufnahme hoher Dosen:

Magen-Darm-Beschwerden, Störung des Herz-Kreislauf-Systems und ZNS-Störungen

chronisch: Silbereinlagerung in die Gewebe (Argyrie/Argyrose)

Acute toxicity

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

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1336-21-6	ammonia ... %				
	oral	LD50 (350) mg/kg	Rat.	GESTIS	
	inhalation (4 h) vapour	LC50 (1,4) mg/l	Rat.	RTECS	
1310-58-3	potassium hydroxide; caustic potash				
	oral	LD50 273 mg/kg	Rat	RTECS	

Irritation and corrosivity

Causes severe skin burns and eye damage.
 5 - 50 %ige Silbernitratlösungen verursachen schwere Augenschädigungen
 Ätzende Wirkung auf Schleimhäute und Haut

Sensitising effects

Based on available data, the classification criteria are not met.
 Keine Hinweise auf sensibilisierenden Eigenschaften.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.
 Keine Hinweise auf kanzerogene Eigenschaften.

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.
 Verätzung der Schleimhäute und Atemwege

Aspiration hazard

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

Additional information on tests

Silbernitrat: NOAEL dermal Meerschwein: 137 mg/kg

Practical experience
Observations relevant to classification

Silbernitrat:
 Bei anhaltender Exposition gegenüber Aerosolen kann eine lokalisierte Argyrose durch Penetration und Einlagerung feiner Partikel in die kontaktierten Gewebe entstehen.
 Eine generalisierte Argyrose setzt die sukzessive Aufnahme hoher Dosen voraus.

SECTION 12: Ecological information
12.1. Toxicity

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
1336-21-6	ammonia ... %					
	Acute fish toxicity	LC50 mg/l	0,53	96 h	Onchorhynchus mykiss	
	Acute crustacea toxicity	EC50	24 mg/l	48 h	Daphnia magna	
	Fish toxicity	NOEC	1,2 mg/l	61 d	Onchorhynchus gorbuscha	
1310-58-3	potassium hydroxide; caustic potash					
	Acute fish toxicity	LC50	80 mg/l	96 h	Gambusia affinis	IUCLID

12.2. Persistence and degradability

Keine Daten vorhanden

12.3. Bioaccumulative potential
Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
1336-21-6	ammonia ... %	-1,38

12.4. Mobility in soil

Keine Daten vorhanden

12.5. Results of PBT and vPvB assessment

Keine Daten vorhanden

12.6. Other adverse effects

Keine Daten vorhanden

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Disposal recommendations

Reste müssen unbedingt vor der Entsorgung angesäuert werden. Danach Entsorgung gemäß den behördlichen Vorschriften.

List of Wastes Code - residues/unused products

060313 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions containing heavy metals; hazardous waste

List of Wastes Code - used product

060313 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions containing heavy metals; hazardous waste

List of Wastes Code - contaminated packaging

200139 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS; separately collected fractions (except 15 01); Plastics

Contaminated packaging

Delivery to an approved waste disposal company.

SECTION 14: Transport information
Land transport (ADR/RID)
14.1. UN number:

UN 1760

14.2. UN proper shipping name:

CORROSIVE LIQUID, N.O.S. (ammonia ... %; silver nitrate)

14.3. Transport hazard class(es):

8

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14.4. Packing group: III
 Hazard label: 8



Classification code: C9
 Special Provisions: 274
 Limited quantity: 5 L
 Transport category: 3
 Hazard No: 80
 Tunnel restriction code: E

Other applicable information (land transport)

Excepted quantity: E1

Inland waterways transport (ADN)

14.1. UN number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S. (ammonia ... %; silver nitrate)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Classification code: C9
 Special Provisions: 274
 Limited quantity: 5 L

Other applicable information (inland waterways transport)

Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S. (silver nitrate, ammonia)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Marine pollutant: YES
 Special Provisions: 223, 274
 Limited quantity: 5 L
 EmS: F-A, S-B

Other applicable information (marine transport)

Excepted quantity: E1

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S. (silver nitrate, ammonia)
14.3. Transport hazard class(es): 8
14.4. Packing group: III

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Hazard label:

8



Special Provisions:

A3 A803

Limited quantity Passenger:

1 L

IATA-packing instructions - Passenger:

852

IATA-max. quantity - Passenger:

5 L

IATA-packing instructions - Cargo:

856

IATA-max. quantity - Cargo:

60 L

Other applicable information (air transport)

Passenger-LQ: Y841

Excepted quantity: E1

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes



Danger releasing substance:

ammonia ... %; silver nitrate

14.6. Special precautions for user

Refer to section 6-8

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

not relevant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

2004/42/EC (VOC):

No information available.

Additional information

This substance is classified as hazardous according to Directive 67/548/EEC.

This substance is hazardous in the sense of regulation (EC) No 1272/2008 (CLP).

Directive 96/82/EC for danger control following severe accidents with dangerous substances: (Seveso II Directive): Annex I No. 9i

National regulatory information

Employment restrictions:

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Water contaminating class (D):

3 - highly water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

06.10.2011 Rev. 1,10 Umstellung auf EU VO 453 Anhang I , und GHS

15.07.2014; Rev 1.2 Revision

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the

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RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations

Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

OSHA: Occupational Safety and Health Administration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOEL: No observed effect level

NOAEL: No observed adverse effect level

LOAEL: Lowest observed adverse effect level

NOAEC: No observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

DNEL: Derived No Effect Level

PNEC: predicted no effect concentration

TSCA: Toxic Substances Control Act

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

NTP: National Toxicology Program

SARA: Superfund Amendments and Reauthorization Act

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

PBT: Persistent bioaccumulative toxic

SVHC: substance of very high concern

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Further Information

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)