

According to directive 1907/2006/EC, 2020/878
Version 4.0 Revision date: 21-01-2025
Trade name: Patina 111 for copper, bronze and brass

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

1.1 Product identification:

Product name: Patina 111 for copper, bronze and brass
UFI code: YJ90-A056-500H-8C55
Product form: Mixture
Product type: Paint
Product group: Commercial product

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

Main use category: Industrial use, Professional use
Specific industrial/professional use: Patina for bronze, brass and copper.
Use of the substance or mixture: Industrial
Uses advised against: Not to be used for private purposes (household).
Food, drinks and animal feed.

1.3 Details of the supplier of the safety data sheet:

Manufacturer : ASSYST bvba / A.S.O.W. bvba
Hellegatstraat 13a
2590 Berlaar
Belgium
Tel: +32 495 50 61 14 / +32 496 83 70 27
Website: www.assyst.org / www.artsuppliesonweb.com
Email: ao@assyst.org / vera.opsommer@assyst.org

1.4 Emergency phone number:

For Belgium: Call the **Poison Control Centre (070 245 245 - free)**, if not available: **02 264 96 30** (normal rate) or your doctor. In life-threatening situations, always call the European emergency number **112**.
NHS 24 Direct For help from a GP, visit your GP surgery's website, use an online service to contact your GP, or call the surgery. **For urgent medical help**, use the NHS 111 online service, or **call 111** if you are unable to get help online. **For life-threatening emergencies, call 999** for an ambulance. There is more information about getting medical help on the NHS website.

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture:

Classification according to directive (EC) No 1272/2008 and its amendments.

The product is classified according to current legislation.

Classification in accordance with Regulation (EC) No 1272/2008 as amended.

Health hazards

Acute oral toxicity 4 Acute Tox. 4 H302
Skin corrosion/irritation 2 Skin Irrit. 2 H315
Serious eye damage/eye irritation 2 Eye Irrit. 2 H319

Adverse physicochemical, health and environmental effects

Human health : See section 11 for toxicological information.
Physical and chemical hazards: See section 9/10 for physicochemical information.
Potential environmental effects : See section 12 for information on the environment.

2.2 Labelling elements:

Labelling according to regulation (EC) No 1272/2008 [CLP/GHS]:

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Hazard pictograms:

Signal word

Warning.

Hazardous ingredients to be declared on the label:

- ✓ ammonium carbamate
- ✓ ammonium hydrogen carbonate

Hazard statements:

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes severe eye irritation.

Precautions

Prevention:

P264 After working with this product, wash contaminated skin thoroughly with plenty of soap and water.
P280 Wear eye protection and face protection.
P270 Do not eat, drink or smoke while using this product.

Action:

P301 + P312 IF INHALED: If you feel unwell, call a POISON CENTER/doctor ... consult.
P330 Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes; remove contact lenses, if possible; continue rinsing.
P337 + P313 In case of persistent eye irritation: consult a doctor.
P501 Dispose of contents/container to special or hazardous waste collection point.

2.3 Other hazards:

If spilled, the floor may be slippery.

This substance/mixture does not contain any components that can be considered persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information

The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.

Toxicological information:

The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.

SECTION 3: Composition and information on ingredients

3.2 Mixtures:

Chemical Name	CAS No. EC No. Index no. Registration number	Classification (Regulation (EC) No 1272/008)	Concentration (%)
ammonium chloride	(CAS No) 12125-02-9 (EC No) 235-186-4 (EU Identification-No) 017-014-00-8 (REACH No) 01-2119489385-24	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 ATE 1,410 mg/kg (oral)	≥ 1 ≤ 5 %
sodium carbonate	(CAS No) 497-19-8 (EC No) 207-838-8 (EU Identification-No) 011-005-00-2 (REACH No) 01-2119485498-19	Eye Irrit. 2, H319 Acute toxicity estimates: Acute oral toxicity: 2800 mg/kg Acute dermal toxicity: 2000.01 mg/kg	≥ 1 ≤ 5 %
Ammonium carbonate	(CAS No) 10361-29-2 (EC No) 233-786-0	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318	≥ 1 ≤ 5 %

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	(REACH No) 01-2119472429-29	ATE Component Ammonium hydrogen carbonate (CAS 1066-33-7): 1,576 mg/kg (oral) Component: Ammonium carbamate (CAS 1111-78-0): >681 mg/kg (oral)	
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For explanation of abbreviations, see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures:

General advice:

Remove contaminated clothing immediately.

By inhalation:

Transfer to fresh air.

If symptoms persist, consult a doctor.

On contact with skin:

Immediately wash with soap and plenty of water.

In case of persistent skin irritation, consult a doctor.

On contact with eyes:

Rinse immediately with plenty of water, including under the eyelids, for at least 5 minutes.

Immediately consult an ophthalmologist.

Go to an eye hospital if possible.

If swallowed:

Clean mouth with water and then drink lots of water.

Never let an unconscious person drink (or eat).

If symptoms persist, consult a doctor.

4.2 Main acute and delayed symptoms and effects:

Symptoms: The main known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

4.3 Indication of immediate medical attention and special treatment required:

Treatment of symptoms (removal of contaminant, monitoring of vital signs), no specific antidote known.

Ensure suitable ventilation, especially in enclosed areas.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media:

Suitable extinguishing agents:

Dry powder. Carbon dioxide. Foam. Alcohol-resistant foam.

Unsuitable extinguishing media:

Do not use a strong water jet.

5.2 Special hazards arising from the substance or mixture:

Fire hazard:

Possible formation of hazardous fumes.

Explosion hazard:

Heat can cause pressure and the bursting of closed vessels, spreading the fire and increasing the risk of burns and injuries.

Reactivity in case of fire:

Smoking/fogging.

Possible formation of toxic gases.

Hazardous decomposition products in case of fire:

When heated: formation of harmful gases/vapours.

Carbon oxides (CO, CO₂).

5.3 Advice for firefighters:

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Fire precautions:

Approaching with the wind.
Wear self-contained breathing apparatus.
Evacuate.

Extinguishing instructions:

Cool exposed vessels with a water spray or mist.
If possible, cool the containers/tanks/reservoirs by spraying water.
Consideration of environmentally contaminated firewater.

Protection during firefighting:

Approaching against the wind.
Autonomous breathing apparatus.
Full respirator.
Fully protective clothing.
Do not enter fire zone without suitable safety equipment, including respiratory protection.

Other information:

In case of fire and/or explosion, avoid breathing fumes.
Larger quantities of extinguishing water with dissolved product should be collected.
Contaminated extinguishing water must be disposed of in accordance with local authority regulations.

SECTION 6: Measures in case of accidental release of the substance or mixture

6.1 Personal precautions, protective equipment and emergency procedures:

Evacuate personnel to a safe place.
Avoid contact with eyes and skin and do not inhale vapour or mist.
Ensure adequate ventilation.
Wear personal protective equipment.
Keeping upwind.
Use only after you have read and understood all safety instructions.
Plug the leak if it can be done safely.
See chapter 8.
Contaminated work clothes must not leave the work area.

6.2 Environmental precautions:

Do not discharge into groundwater, surface water or the sewerage system.
For further information, see paragraph 13.

6.3 Methods and materials for containment and cleaning:

For containment:

Collect and dispose of all waste in suitable and labelled containers in accordance with locally applicable regulations.

Absorb in an absorbent product (e.g. sand, sawdust, universal binder, silica gel).

Cleaning methods:

Vacuum up large spills with a pump or Hoover.
Absorb spill liquid in absorbent including: sand, earth, vermiculite or lime.
Clean contaminated surfaces with plenty of water.

Other information:

The spilled product may be dangerously slippery.
Do not inhale the vapours.

6.4 Reference to other sections:

Information on exposure control, personal protection and handling conditions can be found in sections 8 and 13.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling of the substance or mixture:

Additional hazards in processing:

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Electrostatic charges can build up during handling.

Precautions for safe handling of the substance or mixture:

Avoid contact with eyes and skin and do not inhale vapour or mist.

Use only in well-ventilated areas.

Before using, consult the special instructions.

Use only after you have read and understood all safety instructions.

Avoid vapour formation.

Emergency eye showers and safety showers should be installed in close proximity to any place of potential exposure.

Provide a local exhaust or general ventilation of the room.

Wear personal protective equipment.

See chapter 8.

Wear respiratory protection in case of inadequate ventilation.

Hygiene measures:

Wash hands and other exposed parts with mild soap and water before eating, drinking, smoking or leaving work.

Do not eat, drink or smoke while using this product.

Remove and wash contaminated clothing immediately before reuse.

Contaminated work clothes must not leave the work area.

Handle in accordance with good industrial hygiene and safety practices.

7.2 Conditions for safe storage, including incompatibilities:

Technical measures:

Provide a local exhaust or general ventilation of the room.

Ensure adequate ventilation, especially in enclosed areas.

Emergency eye showers and safety showers should be installed in close proximity to any place of potential exposure.

Storage conditions:

Keep behind lock.

Store in a dry place.

Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition.

No smoking.

All packaging should have a label warning against exposure.

Store in a safe manner in accordance with local/national regulations.

Non-combinable fabrics:

Keep away from: strong acids, strong bases and oxidising agents, water, reducing agents.

Incompatible materials:

Keep away from strong acids and strong oxidising agents.

Heat and ignition sources:

Protect from heat and direct sunlight.

No flames, no sparks.

Remove all ignition sources.

Information on mixed storage:

Separation of food and combustible materials.

Storage:

Protect from direct sun rays.

Store in a well-ventilated place.

Special packaging requirements:

Keep only in the original packaging.

Correctly labelled.

7.3 Specific end use:

For the relevant identified use(s) in section 1, the advice in section 7 should be taken into account.

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SECTION 8: Exposure controls/personal protection measures**8.1 Control parameters:****National limits****Occupational exposure limits (occupational exposure limits)****Component Ammonium carbonate CAS 10361-29-2**

Country	Substance name	CAS No.	Identification	TGG 8h [mg/m ³]	TGG 15 min [mg/m ³]	CW [mg/m ³]	Notation	Source
BE	particles not elsewhere classified		VLEP/GWBB	10			i	Belgian Official Journal
BE	particles not elsewhere classified		VLEP/GWBB	3			r	Belgian Official Journal

Notation

CW:	Ceiling value is a limit value that must not be exceeded (ceiling value)
i	Inhalable fraction
r	Respirable fraction
TGG 15 min:	Short-time value (short-term exposure limit): limit that may not be exceeded and which applies, for a period of 15 minutes (unless otherwise stated)
TGG 8 hours:	Time-weighted average (long-term exposure limit): measured or calculated from an eight-hour reference period (unless otherwise stated)

Human health values

Relevant DNEL and other thresholds				
End point	Threshold	Protection objective, route of exposure	Used in	Exposure time
DNEL	369 mg/m ³	human, via inhalation	(industrial) employees	chronic - systemic effects
DNEL	2,214 mg/m ³	human, via inhalation	(industrial) employees	acute - systemic effects
DNEL	4.19 mg/kg bw/day	human, through the skin	(industrial) employees	chronic - systemic effects
DNEL	25.12 mg/kg bw/day	human, through the skin	(industrial) employees	acute - systemic effects

Relevant DNEL and other thresholds - Component Ammonium hydrogen carbonate CAS 1066-33-7				
End point	Threshold	Protection objective, route of exposure	Used in	Exposure time
DNEL	62.5 mg/m ³	human, via inhalation	(industrial) employees	chronic - systemic effects
DNEL	160.7 mg/m ³	human, via inhalation	(industrial) employees	acute - systemic effects
DNEL	62.5 mg/m ³	human, via inhalation	(industrial) employees	chronic - local effects
DNEL	160.7 mg/m ³	human, via inhalation	(industrial) employees	acute - local effects
DNEL	57 mg/kg bw/day	human, through the skin	(industrial) employees	chronic - systemic effects

Relevant DNEL and other thresholds - Component Ammonium carbamate CAS 1111-78-0				
End point	Threshold	Protection objective, route of exposure	Used in	Exposure time
DNEL	49.8 mg/m ³	human, via inhalation	(industrial) employees	chronic - systemic effects
DNEL	14.1 mg/kg bw/day	human, through the skin	(industrial) employees	chronic - systemic effects

Environmental values

Relevant PNEC and other thresholds				
End point	Threshold	Organism	Environmental compartment	Exposure time
PNEC	2.38 mg/l	aquatic organisms	fresh water	short-term (one-off)
PNEC	0.238 mg/l	aquatic organisms	seawater	short-term (one-off)
PNEC	2.5 mg/kg	aquatic organisms	freshwater sediment	short-term (one-off)
PNEC	0.25 mg/kg	aquatic organisms	seawater sediment	short-term (one-off)
PNEC	0.7 mg/kg	terrestrial organisms	soil	short-term (one-off)

Relevant PNEC and other thresholds- Component Ammonium hydrogen carbonate CAS 1066-33-7				
End point	Threshold	Organism	Environmental compartment	Exposure time
PNEC	0.37 mg/l	aquatic organisms	fresh water	short-term (one-off)
PNEC	0.037 mg/l	aquatic organisms	seawater	short-term (one-off)
PNEC	1,347 mg/l	aquatic organisms	Sewage treatment plants (STP)	short-term (one-off)
PNEC	0.133 mg/kg	aquatic organisms	freshwater sediment	short-term (one-off)
PNEC	0.013 mg/kg	aquatic organisms	seawater sediment	short-term (one-off)
PNEC	74.9 mg/kg	terrestrial organisms	soil	short-term (one-off)

Relevant PNEC and other thresholds- Component Ammonium carbamate CAS 1111-78-0				
End point	Threshold	Organism	Environmental compartment	Exposure time
PNEC	0.37 mg/l	aquatic organisms	water	intermittent delivery

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PNEC	0.418 mg/l	aquatic organisms	fresh water	short-term (one-off)
PNEC	0.042 mg/l	aquatic organisms	seawater	short-term (one-off)
PNEC	10 mg/l	aquatic organisms	Sewage treatment plants (STP)	short-term (one-off)
PNEC	1.89 mg/kg	aquatic organisms	freshwater sediment	short-term (one-off)
PNEC	0.189 mg/kg	aquatic organisms	seawater sediment	short-term (one-off)
PNEC	0.133 mg/kg	terrestrial organisms	soil	short-term (one-off)

8.2 Exposure control measures:

Individual protection measures (personal protective equipment)

Eye/face protection

Wear safety goggles with side protection.

Skin protection

Hand protection

Wear suitable gloves.

Suitable are EN 374-tested gloves against chemicals.

It is recommended that, in case of special applications, the chemical resistance of the safety gloves mentioned above be checked together with the supplier of the gloves.

Times are estimated values from measurements at 22°C and permanent contact.

Increased temperatures due to heated fabrics, body heat, etc.

And a reduction in effective layer thickness due to stretching can lead to a significant reduction in breakthrough time.

If in doubt, contact the manufacturer.

For a layer thickness approximately 1.5 times larger / smaller, the respective breakthrough time is doubled / halved.

The data applies only to the pure substance.

When transferred to mixtures of substances, they should only be considered as guidelines.

Type of material

Nitrile rubber

Material thickness

>0.11 mm

Breakthrough time of glove material

>480 minutes (permeation level: 6)

Other protective equipment

Insert rest periods for skin regeneration.

Preventive skin protection (skin-protective creams) is recommended.

Protection of respiratory organs

Respiratory protection is necessary in case of: Dust generation.

Particle filter (EN 143). P2 (filters at least 94% of air particles, colour code: white).

Managing environmental exposure

Avoid getting the product into drains, surface water or groundwater.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical state:	Liquid
Colour:	Colourless.
Odour:	Odourless.
Odour threshold value:	Not determined due to respiratory sensitising properties.

Other physical and chemical parameters

pH:	8.2 (100 g/l, 20°C)
Melting point/Freezing point:	Not applicable
Initial boiling point and boiling range:	not determined
Flash point:	Not applicable
Relative evaporation rate (butyl acetate=1):	not determined

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Flammability (solid, gas):	not determined Non-flammable.
Explosion limits:	
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Vapour pressure:	not determined
Density:	not determined
Vapour pressure at 50°C:	not determined
Relative vapour density at 20°C:	not determined
Relative density:	not determined
Solubility:	
Water:	not established
Partition coefficient n-octanol/water (Log Pow):	not determined
Self-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	not determined
Explosive properties:	Based on its structure, this product is classified as non-explosive.
Oxidising properties:	Due to its structure, the product is classified as non-oxidising.
Explosion limits:	not established
<u>9.2 Other information</u>	
SADT:	not established
VOC content:	not determined
Other properties:	Where necessary, information on other physical and chemical parameters is given in this section.
Additional information:	No further information available.

SECTION 10: Stability and reactivity

10.1 Reactivity:

No hazardous reaction, if storage and use instructions are observed.

10.2 Chemical Stability:

The material is stable under normal atmospheric conditions and expected temperature and pressure during storage and handling.

10.3 Potential Hazardous Reactions:

May decompose on exposure to high temperature, releasing toxic fumes.

Reacts with: Strong acid.

Reacts violently with alkalis, water.

10.4 Conditions to avoid:

Keep away from heat sources and direct sunlight.

No flames, no sparks.

Remove all ignition sources.

10.5 Chemically Interacting Materials:

Acids and bases.

Strong oxidising agents.

10.6 Hazardous Decomposition Products:

No hazardous decomposition products, if regulations/indication are observed during storage and handling.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

Acute toxicity:

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Not classified (Based on available data; classification criteria not met).

Components

Ammonium carbonate CAS 10361-29-2

Acute toxicity :

Harmful if swallowed.

Acute toxicity					
Route of exposure	End point	Value	Species	Method	Source
Dermal	LD50	>2,000 mg/kg	rat		ECHA
Oral	LD50	1,800 mg/kg	rat		ECHA

Acute toxicity estimate (ATE) of ingredient: Ammonium hydrogen carbonate CAS 1066-33-7

Route of exposure	Value	Species	Method	Source
Oral	1,576 mg/kg	rat		ECHA

Acute toxicity estimate (ATE) of ingredient: Ammonium carbamate CAS 1111-78-0

Route of exposure	Value	Species	Method	Source
Oral	>681 mg/kg	rat		ECHA

Acute toxicity of component: Ammonium hydrogen carbonate CAS 1066-33-7

Route of exposure	End point	Value	Species	Method	Source
Oral	LD50	1,576 mg/kg	rat		ECHA
Dermal	LD50	>2,000 mg/kg	rat		ECHA

Acute toxicity of component: Ammonium carbamate CAS 1111-78-0

Route of exposure	End point	Value	Species	Method	Source
Oral	LD50	>681 - <1,470 mg/kg	rat		ECHA
Dermal	LD50	>5,000 mg/kg	rat		ECHA

Ammonium chloride CAS 12125-02-9

Acute toxicity

Harmful if swallowed.

Route of exposure	End point	Value	Species	Method	Source
Oral	LD50	1,410 mg/kg	Rat		ECHA
Dermal	LD50	>2,000 mg/kg	Rat		ECHA

Sodium carbonate CAS 497-19-8

Acute toxicity

Cannot be classified as acutely toxic.

Route of exposure	End point	Value	Species	Method	Source
Oral	LD50	2,800 mg/kg	Rat		ECHA
Dermal	LD50	>2,000 mg/kg	Rabbit		ECHA

Skin corrosion/irritation:

Causes skin irritation.

Serious eye damage/eye irritation:

Causes serious eye damage.

Respiratory/skin sensitisation:

Is not classifiable as inhalant or skin allergenic.

Mutagenicity in gametes

Is not classifiable as mutagenic in germ cells (mutagenic).

Carcinogenicity

Is not classifiable as carcinogenic.

Reproductive toxicity

Is not classifiable as a reproductive toxicant.

Specific target organ toxicity at single exposure

Cannot be classified as toxic to specific target organs (single exposure).

Specific target organ toxicity on repeated exposure

Cannot be classified as toxic to specific target organs (repeated exposure).

Inhalation hazard

Is not classifiable as dangerous in aspiration.

Potential adverse effects on human health and possible symptoms:

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Causes severe burns and eye damage.

Other information:

The product has not been tested.

The statement is derived from substance/products with similar structure or composition.

No experimental research on the product is available.

The information provided is based on our knowledge of the ingredients and the classification of the product is determined by calculations.

11.2. Information on other hazards

Endocrine-disrupting properties

The substance has not been identified as having endocrine-disrupting properties in with Regulation (EU) 2017/2100 or Regulation 2018/605, nor is it included in the candidate list of substances of very high concern under EU REACH Article 59 due to this property.

SECTION 12: Ecological information

12.1 Toxicity:

Cannot be classified as hazardous to the aquatic environment.

Components

Ammonium carbonate CAS 10361-29-2

Aquatic toxicity (acute)					
Product name	CAS No.	End point	Value	Species	Exposure time
Ammonium carbonate		ErC50	252.9 mg/l	Alg	72 h
Ammonium carbonate		EC50	122.5 mg/l	alg	48 h

Aquatic toxicity (acute) of component Ammonium hydrogen carbonate CAS 1066-33-7					
Name of substance	CAS No.	End point	Value	Species	Exposure time
Ammonium hydrogen carbonate	1066-33-7	LC50	63.4 mg/l	Fish	96 h
Ammonium hydrogen carbonate	1066-33-7	EC50	145.6 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (acute) of component Ammonium carbamate CAS 1111-78-0					
Name of substance	CAS No.	End point	Value	Species	Exposure time
Ammonium carbamate	1111-78-0	LC50	37 mg/l	Fish	96 h
Ammonium carbamate	1111-78-0	EC50	63.7 mg/l	aquatic invertebrates	48 h
Ammonium carbamate	1111-78-0	ErC50	129.1 mg/l	Alg	72 h

Aquatic toxicity (chronic)					
Product name	CAS No.	End point	Value	Species	Exposure time
Ammonium carbonate		ErC50	530 mg/l	micro-organisms	3 h

Aquatic toxicity (chronic) of component Ammonium hydrogen carbonate CAS 1066-33-7					
Name of substance	CAS No.	End point	Value	Species	Exposure time
Ammonium hydrogen carbonate	1066-33-7	ErC50	1,921 mg/l	Alg	5 d
Ammonium hydrogen carbonate	1066-33-7	EC50	3,231 mg/l	Alg	18 d

Ammonium chloride CAS 12125-02-9

Aquatic toxicity (acute)

End point	Value	Species	Source	Exposure time
LC50	42.91 mg/l	Fish	ECHA	96 h
EC50	101 mg/l	aquatic invertebrates	ECHA	48 h

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Aquatic toxicity (chronic)

End point	Value	Species	Source	Exposure time
ErC50	1,300 mg/l	Alg	ECHA	5 d
EC50	2,700 mg/l	Alg	ECHA	18 d

Sodium carbonate CAS 497-19-8

Aquatic toxicity (acute)

End point	Value	Species	Source	Exposure time
LC50	300 mg/l	Fish	ECHA	96 h
EC50	227 mg/l	aquatic invertebrates	ECHA	48 h

12.2 Persistence and Degradability:**Metal patina 111****Persistence and degradability**

Not established.

Components**Ammonium carbonate CAS 10361-29-2**

Theoretical oxygen demand (without nitrification): 0 mg/mg.

Theoretical oxygen demand (with nitrification): 0.8402 mg/mg.

Degradability of ingredients						
Name substance	CAS No.	Process	Degradation rate	Time	Method	Source
Ammonium carbamate	1111-78-0	Carbon dioxide evolution	>80 %	28 d		

Sodium carbonate CAS 497-19-8

Theoretical oxygen demand (without nitrification): -0.1132 mg/mg.

Theoretical oxygen demand (with nitrification): -0.1132 mg/mg.

Theoretical amount of carbon dioxide: 0.4152 mg/mg.

12.3 Bioaccumulation:**Metal patina 111****Partition coefficient n-octanol/water (Log Pow):**

not established

Bioaccumulation:

This product has not been tested for environmental impact.

Components**Ammonium carbonate CAS 10361-29-2**

Bioaccumulation of components				
Name substance	CAS No.	BCF	Log KOW	BZV5/CZV
Ammonium carbamate	1111-78-0		-0,47 (25 °C)	

Ammonium chloride CAS 12125-02-9

Does not concentrate significantly in organisms.

n-octanol/water (log KOW)	-4.37 (Lit.)
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12.4 Mobility in soil:**Metal patina 111****Ecology - soil**

No specific data.

12.5 Results of PBT and vPvB assessment:**Metal patina 111**

This substance/mixture does not meet the PBT criteria of the REACH Regulation, Annex XIII.

This substance/mixture does not meet the vPvB criteria of the REACH regulation, annex XIII.

12.6 Endocrine disrupting properties

Product:

The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.

12.7 Other Harmful Effects:

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Other adverse effects:

No further information available.

Additional information:

Avoid discharge into the environment.

No experimental research on the product is available.

The information provided is based on our knowledge of the ingredients and the classification of the product was determined by calculations

SECTION 13: Disposal instructions

13.1 Waste treatment methods:

Waste product:

Dispose of this substance and its packaging as hazardous waste.

Dispose of contents/packaging in accordance with local/regional/national/international regulations.

Information regarding wastewater discharge

Do not throw waste into the sink.

Waste treatment of containers/packaging

It is hazardous waste; only approved packaging (e.g. in accordance with ADR) may be used.

Contaminated packaging can be treated like the substance itself.

Fully emptied containers can be recycled.

Relevant provisions on waste prevention

The allocation of waste key numbers/waste markings should be industry- and process-specific in accordance with AVV.

Hazardous properties of waste

HP 4 irritant - skin irritation and eye damage

HP 6 acute toxicity

Comments

Waste is separated into the categories that can be treated separately by local or national waste management services.

Please note the relevant national or regional provisions.

Uncontaminated and completely empty containers can be used again.

SECTION 14: Information relating to transport

14.1 UN number

Not applicable

14.2 Proper cargo name according to UN model regulations

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for the user

Not applicable

14.7 Transport in bulk in accordance with Annex II to MARPOL 73/78 and the IBC Code

Not applicable for product, as delivered.

SECTION 15: Statutory information

15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture:

Relevant European Union (EU) provisions

Restrictions in accordance with REACH, Annex XVII

Restricted hazardous substances (REACH, Annex XVII)

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Name of substance	Name according to inventory	CAS No.	Restriction	No.
Ammonium carbonate	inorganic ammonium salts		R65	65
Ammonium chloride	inorganic ammonium salts		R65	65
Ammonium chloride	substances in ink for tattoo or permanent make-up		R75	75
Soda ash	substances in ink for tattoo or permanent make-up		R75	75

Legend

R65

1. Shall not be placed on the market or used in insulating blends of cellulose or insulating articles of cellulose after 14 July 2018, unless the ammonia emission from these blends or articles results in a concentration of less than 3 ppm, expressed on a basis (2.12 mg/m³), under the test conditions specified in point 4. A supplier of an inorganic ammonium salt-containing cellulose insulating mixture shall inform the recipient or consumer of the maximum allowable load of the cellulose insulating mixture, in thickness and density. A downstream user of an inorganic ammonium salt-containing cellulose insulating blend must ensure that the maximum allowable load notified by the supplier is not exceeded.
2. By way of derogation, point 1 shall not apply to the placing on the market of insulating blends of cellulose intended solely for the manufacture of insulating articles of cellulose, or to the use of such blends in the manufacture of insulating articles of cellulose.
3. In the case of a Member State which has, on 14 July 2016, provisional national measures approved by the Commission under Article 129(2)(a), the provisions of paragraphs 1 and 2 shall apply from that date.
4. Compliance with the emission limit value specified in the first subparagraph of point 1 shall be demonstrated in accordance technical specification CEN/TS 16516 with the following adaptations:
 - a) the duration of the test is at least 14 days, instead of 28 days;
 - b) during the test, ammonia gas emissions must be measured at least once a day;
 - c) the emission limit value shall not be reached or exceeded for each measurement made during the test;
 - d) the relative humidity is 90%, instead of 50%;
 - e) a suitable method for measuring ammonia gas emissions must be used;
 - f) the load, expressed in thickness and density, is recorded during the sampling of the cellulose insulating mixtures or articles to be tested.

R75

1. Shall not be placed on the market in mixtures for tattooing purposes, and mixtures containing such substances shall not be used for tattooing purposes after 4 January 2022 if the substance(s) in question is/are present or if the following circumstances occur:
 - a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogenic category 1A, 1B or 2, or as germ cell mutagenic category 1A, 1B or 2, the concentration of that substance in the mixture is equal to or greater than 0.00005 % by weight;
 - b) in the case of a substance classified as toxic to reproduction category 1A, 1B or 2 in Part 3 of Annex VI to Regulation (EC) No 1272/2008, the concentration of that substance in the mixture is equal to or greater than 0.001 % by weight;
 - c) in the case of a substance classified as a category 1, 1A or 1B skin allergen in Part 3 of Annex VI to Regulation (EC) No 1272/2008, the concentration of that substance in the mixture is equal to or greater than 0.001 % by weight;
 - d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as corrosive to the skin, category 1, 1A, 1B or 1C, or irritant to the skin, category 2, or for serious eye damage, category 1 or irritant to the eyes, category 2, the concentration of that substance in the mixture is equal to or greater than:
 - i. 0.1 % by weight, if the substance is used solely as a pH regulator;
 - ii. 0.01% by weight, in all other cases;
 - e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), a concentration in the mixture equal to or greater than 0,00005 % by weight; in the case of a substance for which column g (Product type, body parts) of the table in Annex IV to Regulation (EC) No 1223/2009 indicates one or more of the following types of conditions, the concentration of the substance in the mixture equal to or greater than 0,00005 % by weight:
 - i. "Products washed off, out or away";
 - ii. "Do not use in products applied to mucous membranes";
 - iii. "Do not use in eye products";
 - f) in the case of a substance for which a condition is specified in column h (Maximum concentration in the product ready for use) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the concentration of the substance in the mixture does not meet the condition specified in that column, or the substance otherwise fails to meet it;
 - g) in the case of a substance listed in Appendix 13 to this Annex, the concentration of the substance in the mixture is equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry, the use of a mixture "for tattooing purposes" means the injection or insertion of the mixture into the skin, mucous membranes or eyeball of a person by means of a process or procedure (including procedures commonly referred to as "permanent make-up", cosmetic tattooing, "microblading" and "micropigmentation"), for the purpose of leaving a permanent mark(s) or drawing on that person's body.
3. Where a substance not listed in Appendix 13 falls under more than one of items (a) to (g) of paragraph 1, the most stringent of the concentration limits set out in those items shall apply to that substance. Where a substance listed in Appendix 13 also falls under one or more of items (a) to (g) of paragraph 1, the concentration limit set out in paragraph 1(h) shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
 - a. Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
 - b. Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).

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5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 and thereby classifies or reclassifies a substance in such a way that it falls under (a), (b), (c) or (d) of paragraph 1 of this entry, or under a different entry than before, and if the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall be treated, for the purposes of applying this entry to that substance, as applying on the date of application of that new or revised classification.

6. Where the entry of a substance in Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 such that the substance falls under (e), (f) or (g) of point 1 of this entry, or under a different point than before, and if the amendment takes effect after the date referred to in point 1 or, as the case may be, point 4 of this entry, that amendment shall be treated, for the purposes of applying this entry to that substance, as taking effect from the date falling 18 months after the entry into force of the act which adopted that amendment.

7. Suppliers placing a mixture on the market for tattooing purposes after 4 January 2022 shall ensure that the following information is indicated on the mixture:

- a) the text "Mixture for use in tattoos or permanent make-up";
- b) a unique batch identification reference number;
- c) the list of ingredients according to the nomenclature defined in the glossary of common ingredient names in accordance with Article 33 of Regulation (EC) No 1223/2009, or, in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC designation, the CAS and EC number. Ingredients shall be listed in descending order of weight or volume of ingredients at the time of formulation. Ingredient means any substance added during the formulation of the mixture for tattooing purposes and present therein. Impurities are not considered ingredients. Where the name of a substance used as an ingredient within the meaning of this entry must already be indicated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient need not be indicated in accordance with this Regulation;
- d) the additional entry "pH regulator" for substances covered by paragraph 1(d)(ii);
- e) the statement "Contains nickel. May cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
- f) the statement "Contains hexavalent chromium (VI). May cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
- g) safety precautions for use, if not already required to be indicated on the label in accordance with Regulation (EC) No 1272/2008. The information shall be clearly visible, easily legible and indelible. The information shall appear in the official language(s) of the Member State(s) where the mixture is marketed, unless otherwise specified by the Member State(s) concerned. If there is not enough space on the packaging for the information referred to in the first subparagraph, that information shall, except as regards point (a), be included in the instructions for use. The person administering the mixture shall provide the information specified on the packaging or in the instructions for use in accordance with this point to the person undergoing the procedure before the mixture is used for tattooing purposes.

8. Mixtures without the text "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes.

9. This entry does not apply to substances which are gases at a temperature of 20 °C and pressure of 101.3 kPa, or which generate a vapour pressure greater than 300 kPa at a temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market or use of mixtures for tattooing purposes that are placed on the market or used exclusively as medical devices or accessories to a medical device within the meaning of Regulation (EU) 2017/745. Where a mixture has not been placed on the market or cannot be used exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and the requirements of this Regulation apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

None of the ingredients are listed.

Seveso Directive

2012/18/EU (Seveso III)

No.	Hazardous substance/hazard categories	Thresholds (tonnes) for application of requirements for lower and upper-tier establishments	Nuts
	Not awarded		

Decopaint Directive

VOC content: 0 %

VOC content: 0 g/l

Directive on industrial emissions (IE Directive)

VOC content: 0 %

VOC content: 0 g/l

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed.

Water framework directive (WFD)

List of pollutants (WFD)

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Name of substance	Name according to inventory	CAS No.	Included in	Comments
Ammonium hydrogen carbonate	Substances contributing to eutrophication (especially nitrates and phosphates)		a)	
Ammonium carbamate	Substances contributing to eutrophication (especially nitrates and phosphates)		a)	
Ammonium chloride	Substances contributing to eutrophication (especially nitrates and phosphates)		a)	
Soda ash	Metals and metal compounds		a)	

Legend

(a) Indicative list of the main pollutants

Regulation on marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on ozone-depleting substances

None of the ingredients are listed.

Regulation on export and import of dangerous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POPs)

None of the ingredients are listed.

Other information

Directive 94/33/EC on the protection of young people at work. Observe work restrictions in accordance with the Pregnancy Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

Country	List	Status
AU	AIIC	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed (ACTIVE)
UN	NCI	all ingredients are listed

Legend

AIIC:	Australian Inventory of Chemical Substances
CICR:	Chemical Inventory and Control Regulation
CSCL-ENCS:	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL:	Domestic Substances List (DSL)
ECSI:	EC inventory (EINECS, ELINCS, NLP)
IECSC:	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ:	National Inventory of Chemical Substances
ISHA:	ENCS Inventory of Existing and New Chemical Substances (ISHA-ENCS).
KECI:	Korea Existing Chemicals Inventory
NCI:	National Chemical Inventory
NZIoC:	New Zealand Inventory of Chemicals
PICCS:	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg:	REACH registered substances
TCSI:	Taiwan Chemical Substance Inventory
TSCA:	Toxic Substance Control Act

15.2 Chemical safety assessment:

No chemical safety assessment has been carried out.

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SECTION 16: Other information

Indication of changes:

Adapted from European directive 1907/2006/EC, 2020/878.

List of relevant sentences (code and full text as mentioned in sections 2 and 3)

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes severe eye irritation.

Abbreviations classification:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2

Abbreviations and acronyms:

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road (ADR Agreement); AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Association for the Testing of Materials; bw - Body Weight; CLP - Regulation on Classification, Labelling and Packaging; Regulation (EC) No 1272/2008; CMR - Carcinogenic, mutagenic or toxic to reproduction; DIN - Standard of the German Institute for Standardisation; DSL - List of substances used indoors (Canada); ECHA - European Chemicals Agency; EC-Number - EINECS number; ECx - Concentration associated with x% response; ELx - Charge capacity associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemicals (Japan); ErCx - Concentration associated with x% growth response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk; IC50 - Half-Maximum Inhibitory Concentration; ICAO - International Civil Aviation Organisation; IECSC - Inventory List of Existing Chemicals in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korean Inventory of Existing Chemicals; LC50 - Lethal concentration for 50% of a test population; LD50 - Lethal dose for 50% of a test population (lethal dose median); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not otherwise specified; NO(A)EC - No discernible (negative) effect on concentration; NO(A)EL - No discernible (negative) effect on Level; NOELR - No discernible effect on loading capacity; NZIoC - New Zealand inventory of chemicals; OECD - Organisation for Economic Co-operation and Development OECD; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, bioaccumulative and toxic substance; PICCS - Philippine inventory of chemicals and chemical substances; (Q)SAR - (Quantitative) structure-activity relationships; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the registration, evaluation, authorisation and restriction of chemicals (REACH); RID - Regulations concerning the international carriage of dangerous goods by rail (RID); SADT - Self-accelerating decomposition temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwanese Inventory of Chemical Substances; TECI - Inventory of Chemical Substances Existing in Thailand; TRGS - Technical Regulation on Hazardous Substances; TSCA - Toxic Substances Control Act (USA); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Data sources:

Manufacturer/supplier:

Formatting: Quick.MSDS Sprl - Belgium info@quickmsds.de +32 (0) 479 469 465.

Training advice:

Normal use of this product implies only use as described on the product packaging.
Before using, consult the special instructions.

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Use only after you have read and understood all safety instructions.

Other information:

No additional information available.

This safety data sheet has been prepared in accordance with the applicable European Directives and is applicable in all countries that have transposed these directives into their own legislation.

MSDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the application of health, safety and environmental aspects.

It should therefore not be construed as a guarantee of any specific property of the product.