

According to directive 1907/2006/EC, 2020/878
Version 3.0 Revision date: 20-01-2025
Trade name: Patina Black on Iron

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

1.1 Product identification:

Product name: Patina Black on Iron
UFI-code: OCQF-ERYU-PPOU-SU27

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

Usage: Metal surface treatment products.
Recommended limitations for use: Do not use for injecting or spraying.

1.3 Details of the supplier of the safety data sheet:

Responsible distributor : 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 Tox. 4 Oral Acute toxicity (oral) - Category 4
Skin Corr. 1B Skin corrosion, Category 1B
Eye Dam. 1 Serious eye damage, Category 1
Resp. Sens. 1 Sensitisation — Respiratory, category 1
Skin Sens. 1 Skin sensitization - Category 1
Muta. 2 Germ cell mutagenicity - Category 2
STOT RE 1 STOT-repeated exposure - Category 1
Aquatic Chronic 2 Hazardous to the aquatic environment - Aquatic Chronic 2
Carc. 1Ai Carcinogenicity - Category 1Ai
Repr. 1B (H360D) Reproductive toxicity - Category 1B (H360D)
For the full text of H phrases referred to in this section, see section 16.

2.2 Labelling elements:

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



Hazard pictograms:

Signal word

Danger.

Hazardous ingredients to be declared on the label:

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- ✓ selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex (CAS No.:
- ✓ nickel sulphate (CAS No.: 7786-81-4)
- ✓ copper sulphate (CAS No.: 7758-98-7)
- ✓ phosphoric acid ... %, orthophosphoric acid ... % (CAS No.: 7664-38-2)

Hazard statements:

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 Suspected of causing genetic defects
H350i May cause cancer by inhalation
H360D May damage the unborn child
H372 Causes damage to organs through prolonged or repeated exposure
H411 Toxic to aquatic life with long lasting effects

Precautions

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/mist/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection.
P284 [In case of inadequate ventilation] wear respiratory protection.

Action:

P301+P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of water.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P310 Immediately call a POISON CENTER.
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see information on this label).
P322 Specific measures (see information on this label).
P330 Rinse mouth.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER.
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P501 Dispose of contents/container to an appropriate recycling or disposal facility in accordance with national regulation.

Additional labelling:

EUH208 Contains Nickel Sulphate. May produce an allergic reaction

2.3 Other hazards:

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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 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 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 (%) |
|--|--|--|----------------------|
| nickel sulphate | CAS No. : 7786-81-4 Index No. : 028-009-00-5 EC No. : 232-104-9 REACH No. :01-2119439361-44 | Acute Tox. 4 Inhalation -H332 Acute Tox. 4 Oral - H302 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Carc. 1A - H350 Muta. 2 - H341 Repr. 1B - H360 Resp. Sens. 1 - H334 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 STOT RE 1 - H372 Specific concentration limit STOT RE 1 - H372 : 1<=%<=100 STOT RE 2 - H373 : 0.1<=%<1 Skin Irrit. 2 - H315 : 20<=%<=100 Skin Sens. 1 - H317 : 0.01<=%<=100 Aquatic Acute 1 - H400 M-factor: 1 | <1.25 |
| copper sulphate | CAS No. : 7758-98-7 Index No. : 029-004-00-0 EC No. : 231-847-6 REACH No. :01-2119520566-40 | Acute Tox. 4 Oral - H302 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Eye Irrit. 2 - H319 Skin Irrit. 2 - H315 Specific concentration limit Aquatic Acute 1 - H400 M-factor: 10 Aquatic Chronic 1 – H410 M-factor: 1 ATE 482 mg/kg, oraal | <1.25 |
| phosphoric acid ... %, orthophosphoric acid ... % | CAS No. : 7664-38-2 Index No. : 015-011-00-6 EC No. : 231-633-2 REACH No. :01-2119485924-24 | Met. Corr. 1 - H290; Acute Tox. 4 – H302; Skin Corr. 1B – H314 ; Eye Dam. 1- H318 Specific concentration limit: Met. Corr. 1, H290; >= 1 % | <1.25 |

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| | | | |
|---|--|---|-------|
| | | Skin Corr. 1B - H314 : 25<=%<=100 Skin Irrit. 2 - H315 : 10<=%<25 Eye Irrit. 2 - H319 : 10<=%<25 | |
| selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex | CAS No. : 7446-08-4 Index No. : 034-002-00-8 EC No. : 231-194-7 REACH No. :01-2120089867-33 | Acute Tox. 3 Inhalation - H331 Acute Tox. 3 Oral - H301 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 STOT RE 2 - H373 Specific concentration limit Aquatic Acute 1 - H400 M-factor: 10 Aquatic Chronic 1 – H410 M-factor: 10 | <1.25 |

For explanation of abbreviations, see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures:

Following inhalation:

In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

Provide fresh air.

Remove victim out of the danger area.

Transport affected person in lying position, in case of shortness of breath in half-sitting position.

Following skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

Change contaminated, saturated clothing.

In case of skin reactions, consult a physician.

After eye contact:

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

After ingestion

Seek medical advice immediately (poison centre).

Rinse mouth thoroughly with water.

When in doubt or if symptoms are observed, get medical advice.

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

Do NOT induce vomiting.

4.2 Main acute and delayed symptoms and effects:

Symptoms and effects - Following inhalation:

The following symptoms may occur:

Asthmatic complaints

Respiratory complaints

Allergic reactions

Cough

Symptoms and effects - Following skin contact:

Causes severe skin burns and eye damage.

The following symptoms may occur:

Allergic reactions

Symptoms and effects - After eye contact:

Causes serious eye damage.

Symptoms and effects - After ingestion:

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Abdominal pain

4.3 Indication of immediate medical attention and special treatment required:

Treatment:

No information available.

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media:

Suitable extinguishing agents:

ABC-powder

Water mist

Carbon dioxide (CO₂)

Unsuitable extinguishing media:

Strong water jet

5.2 Special hazards arising from the substance or mixture:

Special hazards arising from the substance or mixture:

No data available.

May form hazardous decomposition products when exposed to high temperatures.

Hazardous decomposition products:

No data available.

5.3 Advice for firefighters:

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

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

Do not allow run-off from fire-fighting to enter drains

or water courses.

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

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Use personal protection equipment.

Spectacles with side protection.

Wear protective gloves.

Provide adequate ventilation.

For emergency responders:

Avoid generation of dust.

Use personal protection equipment.

Remove persons to safety.

Use appropriate respiratory protection.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.2 Environmental precautions:

No information available.

Do not allow to enter into surface water or drains.

Ensure waste is collected and contained.

6.3 Methods and materials for containment and cleaning:

Methods and material for containment:

No information available.

Methods and material for cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Shafts and sewers must be protected from entry of the product.

Inappropriate techniques:

No information available.

6.4 Reference to other sections:

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Disposal: see section 13
Personal protection equipment: see section 8
Safe handling: see section 7

SECTION 7: Handling and storage:

7.1 Precautions for safe handling of the substance or mixture:

Safe handling advice:

Wear personal protective clothing (see section 8).
Put lids on containers immediately after use.
Do not put any product-impregnated cleaning rags into your trouser pockets.
Avoid exposure - obtain special instructions before use.
Keep only in original packaging.

Advices on general occupational hygiene:

Avoid contact with skin, eyes and clothes.
Provide eye shower and label its location conspicuously
Wash contaminated clothing prior to re-use.
Remove contaminated, saturated clothing immediately.
When using do not smoke.
Wash hands before breaks and after work.

7.2 Conditions for safe storage, including incompatibilities:

Restrict general access to the store.
Keep container tightly closed.
Ensure adequate ventilation of the storage area.
Keep container tightly closed in a cool, well-ventilated place.
Storage class : Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

7.3 Specific end use:

Specific use:

Before using this substance/mixture, refer to the technical guidelines.

SECTION 8: Exposure controls/personal protection measures

8.1 Control parameters:

The product contains no ingredients for which exposure values have been established.

Components with workplace limits

| Component | CAS N° | Workplace limits | Value | Base |
|------------------|-----------|---|---------------------------------|---|
| nickel sulphate | 7786-81-4 | TWA | 0.01 mg/m3 Respirable dust | Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work |
| | Remark | Skin and respiratory sensitisation Carcinogenic or mutagenic agents | | |
| | | TWA | 0.1 mg/m3 inhalable fraction | Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work |
| | | Skin and respiratory sensitisation Carcinogenic or mutagenic agents | | |
| | | TGG 8 hr | 0.1 mg/m3 inhalable fraction | Occupational exposure limits |
| | | The substance in question falls within the scope of the Royal Decree of 2 December 1993 on the protection of workers from the risks related to exposure to carcinogenic and mutagenic agents at work. | | |
| Selenium dioxide | 7446-08-4 | ELV 8 hr | 0,2 mg/m3 | Occupational exposure limits |

8.2 Exposure control measures:

Appropriate engineering controls:

Provide adequate ventilation.
Provide eye shower and label its location conspicuously.

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Individual protection measures, such as personal protective equipment:

Eye protection:

Do not wear contact lenses.
Safety glasses with side shields according to EN 166.
Provide eyewash facilities and safety showers close to the workplace.

Hand protection

Material:

Protective gloves according to EN 374.

Material: butyl rubber

Breakthrough time: > 480 min

Glove thickness: 0.35 mm

Material: Neoprene

Breakthrough time: > 480 min

Glove thickness: 0.35 mm

Material: Nitrile rubber

Breakthrough time: > 480 min

Glove thickness: 0.35 mm

Notes:

In case of persistent or repeated contact, wear gloves.

Observe regulations on permeability and soak time, as supplied by the glove supplier. Also consider specific local conditions of use, such as risk of cuts, abrasion and contact time.

The soaking time depends on the material, thickness and glove type, among other things, and must therefore be determined separately for each application.

Suitability for a specific workplace should be discussed with the manufacturer of the protective gloves.

Skin and body protection:

Protective clothing

Respiratory protection:

Unless adequate local exhaust ventilation is provided, or exposure assessment shows that exposures are within recommended exposure guidelines, use respiratory protection.

In case of vapour formation, use a respirator with an approved filter type.

The equipment must comply with EN 14387.

Apply engineering measures to comply with occupational exposure limits.

This can be achieved by good general extraction or, where practical, local exhaust ventilation.

Protective measures:

Avoid contact with skin.

Wear suitable personal protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

| | |
|---|-------------------|
| Occurrence: | liquid |
| Colour: | Blue |
| Smell: | Acidic |
| Odour threshold: | No data available |
| Melting/freezing point: | No data available |
| Boiling point/boiling range: | > 90 °C |
| Upper explosion limit / Upper flammability limit: | No data available |
| Lower explosion limit / Lower flammability limit: | No data available |
| Flash point: | > 93 °C |
| | Open cup |
| Auto-ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| pH: | 3 < V < 3.5 |

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Viscosity

Viscosity, dynamic: No data available

Viscosity, kinematic: No data available

Solubility

Solubility in water: 100 %

Solubility in other solvents: No data available

Partition coefficient: n-octanol/water: No data available

Vapour pressure: No data available

Density: $1.16 < \rho < 1.2$

Bulk specific gravity: No data available

Relative vapour density: Not performed

Particle characteristics

Particle size: Not applicable

9.2 Other information

VOC content: No data available

Minimum ignition energy: No data available

Conductivity: Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity:

This material is considered to be non-reactive under normal use conditions.

10.2 Chemical Stability:

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Potential Hazardous Reactions:

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid:

Stable under recommended storage and handling conditions.

Incompatible materials.

10.5 Chemically Interacting Materials:

Oxidizing agent

Strong acid.

10.6 Hazardous Decomposition Products:

No data available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

Acute Toxicity

Acute oral toxicity:

Product:

Acute toxicity (oral) - Category 4 - Harmful if swallowed

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

Acute toxicity:

LD50 Oral(e) - Rat - 68,1 mg/kg

Remarks:

Behavioural effect: Drowsiness (decreased general activity)

Behavioural effect: Convulsions or action on seizure threshold

LC50 Inhalation - 4 h - 0,51 mg/l - dust/mist

Dermal:

No data available

copper sulphate – CAS 7758-98-7

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Acute toxicity:

LD50 Oral - Rat - male and female - 481 mg/kg
(OECD Test Guideline 401)
Acute toxicity estimate Oral - 481 mg/kg
(Acute toxicity estimate according to Regulation (EC) No. 1272/2008)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 2.000 mg/kg
(OECD Test Guideline 402)
phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Acute toxicity:

Oral: No data available
Acute toxicity estimate Oral - 1.471 mg/kg
(Calculation method)
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
Dermal: No data available
nickel sulphate – CAS 7786-81-4

Acute toxicity:

LD50 Oral - Rat - female - 361.9 mg/kg (Guideline test OECD 425)
Notes: Information given based on data obtained from equivalent substances.
Acute toxicity estimates
Oral - 361.9 mg/kg (ATE value (acute toxicity estimate) derived from LD50/LC50 value)
LC50 Inhalation - Rat - male and female - 4 h - 2.48 mg/l - dust/mist (Guideline test OECD 403)
Notes: Information given based on data obtained from equivalent substances.
Acute toxicity estimates Inhalation - 2.48 mg/l - dust/mist (ATE (acute toxicity estimate) value derived from LD50/LC50 value)
Skin: No data available
LD50 Intraperitoneal - Mouse - 20.894 mg/kg

Skin corrosion/irritation

Product:

Skin corrosion, Category 1B - Causes severe skin burns and eye damage
Causes severe skin burns and eye damage.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

Remarks: Data not available

copper sulphate – CAS 7758-98-7

Remarks: Causes skin irritation

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Mixture causes burns.

nickel sulphate – CAS 7786-81-4

Skin - Rabbit Result: irritant (Guideline test OECD 404)

Comments: Information given based on data obtained from equivalent substances.

Serious eye damage/eye irritation

Product:

Serious eye damage, Category 1

Causes serious eye damage.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

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Remarks: Data not available

copper sulphate – CAS 7758-98-7

Remarks : causes serious eye irritation.

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Mixture causes serious eye damage.

Risk of blindness!

nickel sulphate – CAS 7786-81-4

No data available

Respiratory/skin sensitisation

Product:

Sensitisation — Respiratory, category 1 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Skin sensitization - Category 1 - May cause an allergic skin reaction

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

Remarks: Data not available

copper sulphate – CAS 7758-98-7

Freund's complete adjuvant test - Guinea pig

Result: negative

(OECD Test Guideline 406)

The value is given in analogy to the following substances: Copper sulphate pentahydrate

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

No data available

nickel sulphate – CAS 7786-81-4

Maximisation test - Guinea pig Result: positive (Maximisation test)

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Category 2 - Suspected of causing genetic defects.

No data available.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

Remarks: Data not available

copper sulphate – CAS 7758-98-7

Test Type: Ames test. Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative

Test Type: unscheduled DNA synthesis assay Species: Rat Cell type: Liver cells Application Route: Oral Method: OECD Test Guideline 486 Result: negative

Test Type: Micronucleus test Species: Mouse Cell type: Red blood cells (erythrocytes) Application Route: Oral Method: Mutagenicity (micronucleus test) Result: negative

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

No data available

nickel sulphate – CAS 7786-81-4

Suspected of causing genetic damage.

Suspected of causing genetic damage.

Test type: microbial mutagenesis test (Ames test)

Test system: Escherichia coli/Salmonella typhimurium metabolic activation: without metabolic activation

Method: see user's free text

Result: negative

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Test type: In vitro test for chromosomal aberrations
Test system: other cell types metabolic activation: without metabolic activation
Method: see user's free text
Result: positive

Comments: (analogous to similar compounds)
Test type: Mutagenicity (mammalian cell test): chromosome abberation.
Species: Rat

Cell type: Bone marrow
Method of application: Oral
Method: Guideline test OECD 474 Result: negative
Test type: Mutagenicity (mammalian cell test):

Species: Rat
Method of application: Inhalation
Method: See user's free text

Result: positive
Species: Rat
Result: positive

Carcinogenicity

Product:
Carcinogenicity - Category 1Ai - May cause cancer by inhalation
No data available.

Components:
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex:

Remarks: Data not available
copper sulphate – CAS 7758-98-7
Remarks: Data not available
phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available
nickel sulphate – CAS 7786-81-4
Positive evidence from epidemiological studies (inhalation)

Reproductive toxicity

Product:
Reproductive toxicity - Category 1B (H360D) - May damage the unborn child
No data available.

Components:
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex:

Remarks: Data not available
copper sulphate – CAS 7758-98-7
Possible risk of congenital malformation in the fetus.
Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available
nickel sulphate – CAS 7786-81-4
May harm the unborn child.

STOT from single exposure

Product:
Comments: No data available

STOT on repeated exposure

Product:
Not classified

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No data available.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

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Remarks: Data not available

copper sulphate – CAS 7758-98-7

Remarks: Data not available

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available

nickel sulphate – CAS 7786-81-4

Remarks: Data not available

Repeated-dose toxicity

Product:

STOT-repeated exposure - Category 1 - Causes damage to organs

No data available.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

Remarks: Data not available

copper sulphate – CAS 7758-98-7

Remarks: Data not available

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available

nickel sulphate – CAS 7786-81-4

inhalation (dust/mist/smoke)

- Causes damage to organs with prolonged or repeated exposure.

- irritation of the respiratory tract

Aspiration toxicity

Product:

Not classified

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

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Remarks: Data not available

copper sulphate – CAS 7758-98-7

Remarks: Data not available

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available

nickel sulphate – CAS 7786-81-4

Remarks: Data not available

11.2 Information on other hazards

Endocrine-disrupting properties

Product:

Assessment:

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.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

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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.

The product is extremely destructive to the tissues of the mucous membranes, upper respiratory tract, eyes and skin, coughing, respiratory insufficiency, migraine, nausea, etc.

copper sulphate – CAS 7758-98-7

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.

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

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.

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

nickel sulphate – CAS 7786-81-4

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.

To our knowledge, its chemical, physical and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity:

Product:

Toxicity to fish:

Comments: No data available

Toxicity to daphnia and other aquatic invertebrates:

Comments: No data available

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

Toxicity to fish

LC50 - Pimephales promelas (Large-headed minnow) - 2.9 mg/l - 96.0 h

Toxicity to algae

Growth inhibition EC50 - Scenedesmus acutus - 0.1 mg/l - 3 dr

Growth inhibition LOEC - Pseudokirchneriella subcapitata - 24,63 mg/l - 6 dr

copper sulphate – CAS 7758-98-7

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0,032 mg/l- 96 h

Remarks: (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates

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static test EC50 - Daphnia magna (Water flea) - 0,092 mg/l - 48 h
(OECD Test Guideline 202)

Remarks: (anhydrous substance)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)

semi-static test NOEC - Daphnia magna (Water flea) - 0,028 mg/l -
21 d

(OECD Test Guideline 211)

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available

nickel sulphate – CAS 7786-81-4

Toxicity to fish

flow-through test LC50 - Pimephales promelas (American fathead) - 2.9 - 17.6 mg/l - 96 h
(Guideline test OECD 203)

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (large water flea) - 2 mg/l - 48 h

Toxicity to fish

NOEC - Pimephales promelas (American tadpole) - 0.10 mg/l - 30 d

12.2 Persistence and Degradability:

Product:

Biodegradability:

Comments: No data available

Physicochemical removability:

Comments: No data available

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex:

Remarks: Data not available

copper sulphate – CAS 7758-98-7

The methods for determining biodegradability are not applicable to inorganic substances.

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available

nickel sulphate – CAS 7786-81-4

Remarks: Data not available

12.3 Bioaccumulation:

Product:

Bioaccumulation:

Comments: No data available

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex:

Remarks: Data not available

copper sulphate – CAS 7758-98-7

Remarks: Data not available

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

Remarks: Data not available

nickel sulphate – CAS 7786-81-4

Bioaccumulation : Cyprinus carpio (Carp) - 46.5 h - 3200 µg/l(nickel sulphate)

Bioconcentration factor (BCF): 11,3

12.4 Mobility in soil:

No data available

12.5 Results of PBT and vPvB assessment:

Product:

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Assessment:

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.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

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.

copper sulphate – CAS 7758-98-7

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.

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

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.

nickel sulphate – CAS 7786-81-4

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.

12.6 Endocrine disrupting properties

Product:

Assessment:

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.

Components:

selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this

Annex:

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.

copper sulphate – CAS 7758-98-7

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.

phosphoric acid ... % | orthophosphoric acid ... % - CAS 7664-98-7

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.

nickel sulphate – CAS 7786-81-4

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:

Product:

No data available.

SECTION 13: Disposal instructions

13.1 Waste treatment methods:

Product:

According to local and national regulations.

Container dangerous when empty.

Do not dispose together with household waste.

Do not mix streams during waste collection.

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Contaminated packaging:

Empty containers should be disposed of at an authorised waste treatment facility for reuse or disposal.

SECTION 14: Information relating to transport

14.1 UN number

ADR/RID/ADN: UN 3264
IMDG: Not applicable
IATA: Not applicable

14.2 Proper cargo name according to UN model regulations

ADR/RID/ADN: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(phosphoric acid ... %, orthophosphoric acid ... %)

14.3 Transport hazard class(es)

ADR/RID/ADN: 8
Classification code: C1

14.4 Packing group

ADR/RID/ADN
Packing group: III
Labels: 9

14.5 Environmental hazards

ADR/RID/AND

Environmental hazard: yes

14.6 Special precautions for the user

ADR Classification code: : C1
ADR Special provisions : 274
ADR Limited quantity (LQ) : 5L
ADR Excepted quantities : E1
ADR Packing instructions : P001 IBC03 LPO1 R001
ADR Special packing provisions : -
ADR Mixed packing provisions : MP19
Instructions for portable tanks and bulk containers : T7
Special provisions for portable tanks and bulk containers : TPI TP28
ADR tank code : L4BN
ADR tanks special provisions : -
Vehicle for tank carriage : AT
ADR Transport category : 3
ADR Tunnel restriction code : E
ADR Special provisions loading, unloading and handling : V12
Special provisions - Packages : V12
Special provisions - Bulk : -
Special provisions - Operation : -
ADR Hazard identification number (Kemler No.) : 80

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:

Substances REACH candidates:

None

Substances Annex XIV:

None

Substances Annex XVII:

None

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VOC content:

No data available

Contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH:

Not listed

Regulation (EC) No. 1907/2006 (REACH), Annex XVII (restrictions):

- ✓ Nickel sulphate (7786-81-4)
- ✓ phosphoric acid (7664-38-2)
- ✓ selenium dioxide (7446-08-4)
- ✓ copper sulphate (7758-98-7)

CoRAP:

Not listed

Regulation (EC) 2019/1021 [POP Regulation]:

Not listed

Regulation (EC) No. 1005/2009 on substances that lead to the depletion of the ozone layer [Ozone Layer Regulation]:

Not listed

Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals:

Not listed

Water hazard class:

WGK2

15.2 Chemical safety assessment:

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information**Full text of the H statements**

| | |
|-------|---|
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H319 | Causes serious eye irritation |
| H331 | Toxic if inhaled |
| H332 | Harmful if inhaled |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled |
| H341 | Suspected of causing genetic defects < [FTB=1] >< [EXP= state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard] > |
| H350i | May cause cancer by inhalation |
| H360D | May damage the unborn child |
| H372 | Causes damage to organs through prolonged or repeated exposure |
| H373 | May cause damage to organs or state all organs affected, if known through prolonged or repeated exposure - state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard |
| H410 | Very toxic to aquatic life with long lasting effects |
| H411 | Toxic to aquatic life with long lasting effects |

Full text of other abbreviations

| | |
|--------------------------|--|
| Acute Tox. 3 Inhalation: | Acute toxicity (inhalative) - Category 3 |
| Acute Tox. 3 Oral: | Acute toxicity (oral) - Category 3 |
| Acute Tox. 4 Inhalation: | Acute toxicity (inhalative) - Category 4 |
| Acute Tox. 4 Oral: | Acute toxicity (oral) - Category 4 |

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| | |
|--------------------|--|
| Aquatic Acute 1: | Hazardous to the aquatic environment - Aquatic Acute 1 |
| Aquatic Chronic 1: | Hazardous to the aquatic environment - Aquatic Chronic 1 |
| Aquatic Chronic 2: | Hazardous to the aquatic environment - Aquatic Chronic 2 |
| Carc. 1°: | Carcinogenicity - Category 1A |
| Carc. 1Ai: | Carcinogenicity - Category 1Ai |
| Eye Dam. 1: | Serious eye damage, Category 1 |
| Eye Irrit. 2: | Eye irritation - Category 2 |
| Muta. 2: | Germ cell mutagenicity - Category 2 |
| Repr. 1B: | Reproductive toxicity - Category 1B |
| Repr. 1B (H360D): | Reproductive toxicity - Category 1B (H360D) |
| Resp. Sens. 1: | Sensitisation — Respiratory, category 1 |
| Skin Corr. 1B: | Skin corrosion, Category 1B |
| Skin Irrit. 2: | Irritation, Category 2 |
| Skin Sens. 1: | Skin sensitization - Category 1 |
| STOT RE 1: | STOT-repeated exposure - Category 1 |
| STOT RE 2: | STOT-repeated exposure - Category 2 |

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 cargo 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

Further information

Training advice:

Provide proper information, instruction and training for users.

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The information in this safety data sheet is correct to the best of our knowledge at the date of issue indicated. This information is intended only as guidance for safe handling, use, processing, storage, transportation, disposal, and release, and should not be considered a guarantee or indication of quality.