

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 1 of 12

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

UV-Plus Purifier

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

Professional use.

The UV Plus Purifier is a gas cleaning system for exclusive use in OES SPECTRO products.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: SPECTRO Analytical Instruments GmbH

Street: Boschstr. 10

Place: D-47533 Kleve

Telephone: +49 2821892-0

Responsible Department: spectro.info@ametek.com

1.4. Emergency telephone

International: +44 1865407333 Spectro 29003-NEC

number:

North America: 011441865407333

Further Information

Safety Data Sheet according to UK-REACH Regulation

The product is classified as an article. Providing the Safety Data Sheet takes place on a voluntary basis for information purposes.

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Self-heat. 1; H251

Aquatic Acute 1; H400

Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation**

Signal word: Danger

Pictograms:

**Hazard statements**

H251

Self-heating: may catch fire.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statements

P235

Keep cool.

P273

Avoid release to the environment.

P391

Collect spillage.

P407

Maintain air gap between stacks or pallets.

P420

Store separately.

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 2 of 12

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional advice on labelling

Not required because hazardous substances are incorporated in the material/article and there is no risk in case of skin contact, inhalation or ingestion as long as the material is properly handled and stored. (EC 1272/2008 I 1.3.4.1)

There is no requirement for the product to be specially labelled according to EC directives or the corresponding national laws.

2.3. Other hazards

This article doesn't contain dangerous substances or preparations intended to be released under normal or reasonably foreseeable conditions of use. Under normal conditions, the product is hermetically sealed.

The substances in the mixture (> 0.1%) do not meet the PBT/vPvB criteria according to UK REACH.

This product does not contain a substance (> 0,1%) that has endocrine disrupting properties with respect to humans as no components meets the criteria. This product does not contain a substance (> 0,1 %) that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

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

Catalyst.

The UV Plus Purifier is a gas cleaning system for exclusive use in OES SPECTRO products. Dispose of only deactivated catalyst residues.

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
-	activated Copper Oxide			< 50 %
	-			
	Self-heat. 1; H251			
1317-38-0	copper(II) oxide			< 50 %
	215-269-1	029-016-00-6	01-2119502447-44	
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			
14808-60-7	Quartz			< 5 %
	238-878-4			
1304-28-5	Bariumoxide			< 3 %
	Acute Tox. 4, Acute Tox. 4; H332 H302			
1314-13-2	zinc oxide			< 1 %
	215-222-5	030-013-00-7		
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
1317-38-0	215-269-1	copper(II) oxide	< 50 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2500 mg/kg Aquatic Acute 1; H400: M=100 Aquatic Chronic 1; H410: M=10		

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 3 of 12

1304-28-5		Bariumoxide	< 3 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg		
1314-13-2	215-222-5	zinc oxide	< 1 %
	oral: LD50 = > 5000 mg/kg		

Further Information

Product does not contain listed SVHC substances > 0.1 % according to UK REACH.

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

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

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin

In the event of a damaged container. If material escapes:

After contact with skin, wash immediately with: Water. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes

In the event of a damaged container. If material escapes:

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

In the event of a damaged container. If material escapes:

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

The product itself does not burn.

In the event of a damaged container. If material escapes:

D powder. Dry sand.

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Gas/vapours, harmful.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. In case of fire: Wear self-contained breathing apparatus.

Additional information

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

Co-ordinate fire-fighting measures to the fire surroundings.

Use water spray jet to protect personnel and to cool endangered containers.

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 4 of 12

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Warning: May cause fire.

In case of fire, use fire extinguisher class D.

For non-emergency personnel

Wear personal protection equipment (refer to section 8).

For emergency responders

No special measures are necessary.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Eliminate leaks immediately. Prevent spread over a wide area (e.g. by containment or oil barriers). Do not allow to enter into soil/subsoil. If required, notify relevant authorities according to all applicable regulations.

6.3. Methods and material for containment and cleaning up**For containment**

Dispose of only deactivated catalyst residues.

Take up carefully when dry. Avoid contact with water.

Treat the recovered material as prescribed in the section on waste disposal.

For cleaning up

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Protect containers against damage.

Under normal conditions, the product is hermetically sealed.

Advice on protection against fire and explosion

Protect containers against damage.

Under normal conditions, the product is hermetically sealed.

Usual measures for fire prevention.

Advice on general occupational hygiene

No special measures are necessary.

Further information on handling

General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

not relevant

Under normal conditions, the product is hermetically sealed.

Hints on joint storage

not relevant

Under normal conditions, the product is hermetically sealed.

Further information on storage conditions

not relevant

Under normal conditions, the product is hermetically sealed.

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 5 of 12

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
-	Silica, respirable crystalline (respirable fraction)	-	0.1		TWA (8 h)	WEL

PNEC values

CAS No	Substance	
Environmental compartment		Value
1317-38-0	copper(II) oxide	
Freshwater		0,0078 mg/l
Marine water		0,0052 mg/l
Freshwater sediment		87 mg/kg
Marine sediment		676 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,23 mg/l
Soil		65 mg/kg

Additional advice on limit values

Under normal conditions, the product is hermetically sealed.

8.2. Exposure controls**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Provide adequate ventilation.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Eye protection: not required.

Under normal conditions, the product is hermetically sealed.

Hand protection

Hand protection: not required.

Under normal conditions, the product is hermetically sealed.

Skin protection

Suitable protective clothing: Lab apron.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 6 of 12

Environmental exposure controls

No special precautionary measures are necessary.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	solid
Colour:	not determined
Odour:	characteristic
Odour threshold:	not determined

Changes in the physical state

Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	not applicable
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
Flash point:	not applicable

Flammability

Solid/liquid:	not determined
---------------	----------------

Explosive properties

not applicable

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Auto-ignition temperature:	not applicable

Self-ignition temperature

Solid:	not determined
Gas:	not determined

Decomposition temperature:	not determined
----------------------------	----------------

pH-Value:	not applicable
-----------	----------------

Viscosity / dynamic:	not applicable
----------------------	----------------

Viscosity / kinematic:	not determined
------------------------	----------------

Flow time:	not determined
------------	----------------

Water solubility:	not applicable
-------------------	----------------

Solubility in other solvents

not determined

Dissolution rate:	not relevant
-------------------	--------------

Partition coefficient n-octanol/water:	SECTION 12: Ecological information
--	------------------------------------

Dispersion stability:	not relevant
-----------------------	--------------

Vapour pressure:	not applicable
------------------	----------------

Density:	not determined
----------	----------------

Bulk density:	not determined
---------------	----------------

Relative vapour density:	not determined
--------------------------	----------------

Particle characteristics:	not relevant
---------------------------	--------------

9.2. Other information**Information with regard to physical hazard classes**

Sustaining combustion:	No data available
------------------------	-------------------

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 7 of 12

Oxidizing properties

In the event of a damaged container. If material escapes: Self-heating substances and mixtures May cause fire.

Other safety characteristics

Solvent separation test:

not determined

Solvent content:

0%

Solid content:

not applicable

Evaporation rate:

not determined

Further Information

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Protect against: UV-radiation/sunlight. heat.

10.5. Incompatible materials

Substances and mixtures which, in contact with water, emit flammable gases. Combustible substance.

Oxidizing agents. Emission of air/oxygen.

10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution**

No data available.

Acute toxicity

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1317-38-0	copper(II) oxide				
	oral	LD50 mg/kg > 2500	Rat	REACH Dossier	OECD Guideline 423
	dermal	LD50 mg/kg > 2000	Rat	REACH Dossier	OECD Guideline 402
1304-28-5	Bariumoxide				
	oral	ATE mg/kg 500			
	inhalation vapour	ATE 11 mg/l			

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 8 of 12

	inhalation dust/mist	ATE	1,5 mg/l			
1314-13-2	zinc oxide					
	oral	LD50 mg/kg	> 5000	Rat	IUCLID	

Irritation and corrosivity

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

Sensitising effects

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

copper(II) oxide: no danger of sensitization. literature information: ECHA Dossier

Carcinogenic/mutagenic/toxic effects for reproduction

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

copper(II) oxide: Ames test negative. Literature information: ECHA dossier

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Information on likely routes of exposure

Under normal conditions, the product is hermetically sealed.

In the event of a damaged container. If material escapes: Ingestion: May be harmful. Inhalation: May be harmful. Skin contact: May cause mild irritation. Eye contact: May cause irritation. May cause fire.

Specific effects in experiment on an animal

No data available.

11.2. Information on other hazards**Endocrine disrupting properties**

This product does not contain a substance (> 0,1%) that has endocrine disrupting properties with respect to humans as no components meets the criteria.

Other information

No data available.

SECTION 12: Ecological information**12.1. Toxicity**

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
1317-38-0	copper(II) oxide					
	Acute fish toxicity	LC50 [0,0105-9,15] mg/l	96 h	Fish	REACH Dossier	
	Acute algae toxicity	ErC50 [0,0165-0,897] mg/l	72 h	algae	REACH Dossier	
	Acute crustacea toxicity	EC50 [0,0085-1,21] mg/l	48 h	Crustacea	REACH Dossier	
	Fish toxicity	NOEC [0,0022-0,188] mg/l		Fish [7-330d]	REACH Dossier	
	Algae toxicity	NOEC [0,0102] mg/l	19 d	Macrocystis pyrifera	Mar. Ecol. Prog. Ser. 68: 147 - 156 (199)	
	Crustacea toxicity	NOEC [0,004-0,181] mg/l		Crustacea [2-240d]	REACH Dossier	

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 9 of 12

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

BCF

CAS No	Chemical name	BCF	Species	Source
1317-38-0	copper(II) oxide	0,02 - 20	Crangon crangon	

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

The aforementioned statement applies to substances contained in the product with a minimum content of 0.1 %.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

The aforementioned statement applies to substances contained in the product with a minimum content of 0.1 %.

12.7. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains.

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

Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Must not be disposed with household waste.

Refer to manufacturer/supplier for information on recovery/recycling.

Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:

List of Wastes Code - residues/unused products

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - used product

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID number: UN 3190

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 10 of 12

14.2. UN proper shipping name: SELF-HEATING SOLID, INORGANIC, N.O.S. (activated Copper Oxide)
14.3. Transport hazard class(es): 4.2
14.4. Packing group: II
Hazard label: 4.2



Classification code: S4
Special Provisions: 274
Limited quantity: 0
Excepted quantity: E2
Transport category: 2
Hazard No: 40
Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 3190
14.2. UN proper shipping name: SELF-HEATING SOLID, INORGANIC, N.O.S. (activated Copper Oxide)
14.3. Transport hazard class(es): 4.2
14.4. Packing group: II
Hazard label: 4.2



Classification code: S4
Special Provisions: 274
Limited quantity: 0
Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 3190
14.2. UN proper shipping name: SELF-HEATING SOLID, INORGANIC, N.O.S. (Activated copper oxide)
14.3. Transport hazard class(es): 4.2
14.4. Packing group: II
Hazard label: 4.2



Marine pollutant: YES
Special Provisions: 274
Limited quantity: 0
Excepted quantity: E2
EmS: F-A, S-J

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3190
14.2. UN proper shipping name: SELF-HEATING SOLID, INORGANIC, N.O.S. (Activated copper oxide)
14.3. Transport hazard class(es): 4.2
14.4. Packing group: II
Hazard label: 4.2



Special Provisions: A3 A803

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 11 of 12

Limited quantity Passenger:	Forbidden	
Passenger LQ:	Forbidden	
Excepted quantity:	E2	
IATA-packing instructions - Passenger:		467
IATA-max. quantity - Passenger:		15 kg
IATA-packing instructions - Cargo:		470
IATA-max. quantity - Cargo:		50 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes



Danger releasing substance: copper(II) oxide

14.6. Special precautions for user

Safe handling: see section 7

Personal protection equipment: see section 8

14.7. Maritime transport in bulk according to IMO instruments

not relevant

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

Restrictions on use (REACH, annex XVII):

Entry 3

2010/75/EU (VOC): 0%

2004/42/EC (VOC): 0 g/L

Information according to 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

Additional information

Safety Data Sheet according to UK-REACH Regulation

The mixture is classified as hazardous according to GHS (GB CLP).

UK REACH Appendix XVII, No (mixture): -

National regulatory information

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

Water hazard class (D): 3 - highly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

copper(II) oxide

SECTION 16: Other information**Changes**

Rev. 1,0 Initial release 23.04.2014

Rev. 1,1 Changes in chapter: 2, 7, 9, 10, 14, 15, 16

Rev. 2,0 15.05.2023, Changes in chapter: 1 - 16

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

CAS: Chemical Abstracts Service

CLP: Classification, Labelling and Packaging of substances and mixtures

Safety Data Sheet

according to UK REACH Regulation

UV-Plus Purifier

Revision date: 15.05.2023

Page 12 of 12

DNEL: Derived No Effect Level

d: day(s)

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

ECHA: European Chemicals Agency

EWC: European Waste Catalogue

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

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

ICAO: International Civil Aviation Organization

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

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

h: hour

LOAEL: Lowest observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level

NOAEC: No observed adverse effect concentration

NLP: No-Longer Polymers

N/A: not applicable

OECD: Organisation for Economic Co-operation and Development

PNEC: predicted no effect concentration

PBT: Persistent bioaccumulative toxic

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

REACH: Registration, Evaluation, Authorisation of Chemicals

SVHC: substance of very high concern

TRGS: Technische Regeln für Gefahrstoffe

UN: United Nations

VOC: Volatile Organic Compounds

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Self-heat. 1; H251	On basis of test data
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method

Relevant H and EUH statements (number and full text)

H251	Self-heating: may catch fire.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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