

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 23-Sep-2009

Revision Date 09-Sep-2024

Revision Number 13

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

1.1. Product identifier

Product Description: Cat No. : Synonyms CAS No Molecular Formula REACH registration number Copper (II) nitrate trihydrate C/8080/53, C/8080/60, C/8080/50 Cupric nitrate 10031-43-3 Cu N2 O6 . 3 H2 O - (for the anhydrous form)

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company

UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name

Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Tel: 01509 231166 Chemtrec US: (800) 424-9300 Chemtrec EU: 001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Oxidizing solids

Health hazards

Category 2 (H272)

Skin Corrosion/Irritation	Category 1 B (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Environmental hazards	
Acute aquatic toxicity	Category 1 (H400)
Chronic aquatic toxicity	Category 2 (H411)

Full text of Hazard Statements: see section 16

2.2. Label elements

Copper (II) nitrate trihydrate



Signal Word

Danger

Hazard Statements

- H272 May intensify fire; oxidizer
- H314 Causes severe skin burns and eye damage
- H400 Very toxic to aquatic life
- H411 Toxic to aquatic life with long lasting effects

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P220 - Keep away from clothing and other combustible materials

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

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

P371 + P380 + P375 - In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion

2.3. Other hazards

Toxic to terrestrial vertebrates This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Copper(II) nitrate, trihydrate (1:2:3)	10031-43-3		<= 100	Ox. Sol. 2 (H272) Skin Cor. 1B (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400)

Copper (II) nitrate trihydrate

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				Aquatic Chronic 2 (H411)
Cupric nitrate	3251-23-8	221-838-5	-	Ox. Sol. 2 (H272) Skin Cor. 1B (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Copper(II) nitrate, trihydrate (1:2:3)	-	10 (acute)	-
		1 (Chronic)	
Cupric nitrate	-	10 (acute)	-
-		1 (Chronic)	

REACH registration number	 (for the anhydrous form)

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.	
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.	
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.	
Ingestion	Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.	
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.	
Self-Protection of the First Aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.	
4.2. Most important symptoms and	effects, both acute and delayed	
	Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation	
4.3. Indication of any immediate medical attention and special treatment needed		
Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.	

SECTION 5: FIREFIGHTING MEASURES

Copper (II) nitrate trihydrate

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Keep away from clothing and other combustible materials. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Do not store near combustible materials. Corrosives area.

Technical Rules for Hazardous Substances (TRGS) 510Class 5.1BStorage Class (LGK) (Germany)

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s):

Component	The United Kingdom	European Union	Ireland
Copper(II) nitrate, trihydrate (1:2:3)	STEL: 2 mg/m ³ 15 min		
	TWA: 1 mg/m ³ 8 hr		
Cupric nitrate	STEL: 2 mg/m ³ 15 min		
	TWA: 1 mg/m ³ 8 hr		

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective eq Eye Protection		(European standard	I - EN 166)	
Hand Protection	Protectiv	ve gloves		
Glove material Natural rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations	Glove thickness	EU standard EN 374	Glove comments (minimum requirement)
Skin and body prot	tection Long sle	eved clothing.		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted
Environmental exposure controls	Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Blue Odorless No data available 114 °C / 237.2 °F No data available No information available Not applicable No information available No data available	Solid
Flash Point Autoignition Temperature Decomposition Temperature pH Viscosity	No information available No data available No data available 4.0 Not applicable	Method - No information available 2M aq.sol Solid
Water Solubility Solubility in other solvents Partition Coefficient (n-octanol/wat Vapor Pressure	267 g/100ml No information available er) No data available	
Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	No data available No data available Not applicable No data available	Solid
9.2. Other information		
Molecular Formula Molecular Weight	Cu N2 O6 . 3 H2 O 241.6	

Copper (II) nitrate trihydrate

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Oxidizing Properties Evaporation Rate Oxidizer Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

Moisture sensitive. Oxidizer: Contact with combustible/organic material may cause fire.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

10.4. Conditions to avoid

Excess heat. Incompatible products. Exposure to moisture. Exposure to air or moisture over prolonged periods. Combustible material.

10.5. Incompatible materials

Ammonia. Cyanides. Acid anhydrides. Strong reducing agents. Combustible material.

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	No data available
Inhalation	No data available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Copper(II) nitrate, trihydrate (1:2:3)	-	-	-
Cupric nitrate	-	-	-

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation;Category 1(d) respiratory or skin sensitization;
Respiratory
SkinNo data available
No data available
No data available(e) germ cell mutagenicity;No data available
Thore are no known carcinogenic chemicals in this product

(g) reproductive toxicity;	No data available
(h) STOT-single exposure;	No data available
(i) STOT-repeated exposure; Target Organs	No data available No information available.
(j) aspiration hazard;	Not applicable Solid
Other Adverse Effects	
Symptoms / effects,both acute and delayed	Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.
11.2. Information on other hazards	_

SECTION 12: ECOLOGICAL INFORMATION

known or suspected endocrine disruptors.

12.1. Toxicity Ecotoxicity effects

Endocrine Disrupting Properties

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Assess endocrine disrupting properties for human health. This product does not contain any

Component	Freshwater Fish	Water Flea	Freshwater Algae
Cupric nitrate	LC50: 0.29 mg/l/96 H	EC50: 0.026 mg/l/48H (M=10)	

Component	Microtox	M-Factor
Copper(II) nitrate, trihydrate (1:2:3)		10 (acute)
		1 (Chronic)
Cupric nitrate		10 (acute)
		1 (Chronic)

12.2. Persistence and degradability
Persistence
Degradability
treatment plantProduct contains heavy metals. Discharge into the environment must be avoided. Special
pre-treatment is necessary
May persist, based on information available.
Not relevant for inorganic substances.
Contains substances known to be hazardous to the environment or not degradable in waste
water treatment plants.12.3. Bioaccumulative potentialMay have some potential to bioaccumulate12.4. Mobility in soilThe product is water soluble, and may spread in water systems Will likely be mobile in the
environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB No data available for assessment.

Copper (II) nitrate trihydrate

assessment

<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products	Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Do not reuse empty containers. Dispose of this container to hazardous or special waste collection point.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN3085
14.2. UN proper shipping name	Oxidizing solid, corrosive, n.o.s.
Technical Shipping Name	Copper (II) nitrate
14.3. Transport hazard class(es)	5.1
Subsidiary Hazard Class	8
14.4. Packing group	Π

<u>ADR</u>

14.1. UN number	UN3085
14.2. UN proper shipping name	Oxidizing solid, corrosive, n.o.s.
Technical Shipping Name	Copper (II) nitrate
14.3. Transport hazard class(es)	5.1
Subsidiary Hazard Class	8
14.4. Packing group	II

<u>IATA</u>

<u>14.1. UN number</u>	UN3085
14.2. UN proper shipping name	Oxidizing solid, corrosive, n.o.s.
Technical Shipping Name	Copper (II) nitrate
14.3. Transport hazard class(es)	5.1

Copper (II) nitrate trihydrate

Subsidiary Hazard Class 14.4. Packing group	8 II
14.5. Environmental hazards	Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Copper(II) nitrate, trihydrate (1:2:3)	10031-43-3	-	-	-	Х	Х	-	Х	Х
Cupric nitrate	3251-23-8	221-838-5	-	-	Х	Х	KE-08929	Х	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Copper(II) nitrate, trihydrate (1:2:3)	10031-43-3	-	-	-	-	Х	Х	Х
Cupric nitrate	3251-23-8	Х	ACTIVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Copper(II) nitrate, trihydrate (1:2:3)	10031-43-3	-	-	-
Cupric nitrate	3251-23-8	-	-	-

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Copper(II) nitrate, trihydrate (1:2:3)	10031-43-3	Not applicable	Not applicable
Cupric nitrate	3251-23-8	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Copper (II) nitrate trihydrate

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

See table for values

Com	ponent	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Cupri	c nitrate	WGK 3	

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

- H314 Causes severe skin burns and eye damage
- H318 Causes serious eye damage
- H400 Very toxic to aquatic life
- H411 Toxic to aquatic life with long lasting effects
- H272 May intensify fire; oxidizer

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b)
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances NZIOC - New Zealand Inventory of Chemicals
WEL - Workplace Exposure Limit ACGIH - American Conference of Governmental Industrial Hygienists DNEL - Derived No Effect Level RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic	 TWA - Time Weighted Average IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC) LD50 - Lethal Dose 50% EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code OECD - Organisation for Economic Co-operation and Development BCF - Bioconcentration factor

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Training Advice

Chemical incident response training.

Creation Date
Revision Date
Revision Summary

23-Sep-2009 09-Sep-2024 Not applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet