

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

Creation Date 10-Feb-2015

Revision Date 28-Feb-2025

Revision Number 7

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

1.1. Product identifier

Product Description:	Tungstosilicic acid hydrate
Cat No. :	39651
Synonyms	None
CAS No	12027-43-9
Molecular Formula	H4-O4O-Si-W12
REACH registration number	-

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

Recommended Use	Laboratory chemicals.
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific) Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**: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

Based on available data, the classification criteria are not met

Health hazards

Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation

Environmental hazards

Chronic aquatic toxicity

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H314 - Causes severe skin burns and eye damage

H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

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

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

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

P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

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
Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O':O':O':O':O': O'':O'':O''':O ''')]tetracosamuoxododecaoxododeca-, tetrahydrogen, hydrate	12027-43-9		100	Skin Corr. 1C (H314) Eye Dam. 1 (H318) Aquatic Chronic 3 (H412)
Tungstate(4-), [.mu.12-[orthosilicato(4-)-O:O:O':O':O':O':O' :O'':O'':O''':O''']tetracosamuoxododec aoxododeca-, tetrahydrogen		EEC No. 234-719-8	0	Skin Corr. 1C (H314) Eye Dam. 1 (H318) Aquatic Chronic 3 (H412)

Category 3 (H412)

REACH registration number

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. Get medical attention.			
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.			
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.			
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.			
Self-Protection of the First Aider	No special precautions required.			
4.2. Most important symptoms and effects, both acute and delayed				

None reasonably foreseeable. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: 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

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

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.

Hazardous Combustion Products

Silicon dioxide, Tungsten oxides.

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

6.2. Environmental precautions

Should not be released into the environment.

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. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

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

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Class 8B Storage 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): UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

Component	The United Kingdom	European Union	Ireland
Tungstate(4-),	STEL: 10 mg/m ³ 15 min		
[.mu.12-(orthosilicato(4-)-0:0:0':0':0':0':0':0'':0'':0''':0''':	TWA: 5 mg/m ³ 8 hr		
O "')]tetracosamuoxododecaoxododeca-,	-		

Tungstosilicic acid hydrate

tetrahydrogen, hydrate		
Tungstate(4-),	STEL: 10 mg/m ³ 15 min	
[.mu.12-[orthosilicato(4-)-O:O:O':O':O':O'':O'':O'':O'':O''':O''	TWA: 5 mg/m ³ 8 hr	
O""]]tetracosamuoxododecaoxododeca-, tetrahydrogen	-	

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.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Tungstate(4-),	PNEC = 1.4µg/L		PNEC = 14µg/L	PNEC = 1mg/L	
[.mu.12-[orthosilicato(4-)-O				-	
:0:0:0':0':0':0":0":0":0":0"					
:O''':O''']]tetracosamuox					
ododecaoxododeca-,					
tetrahydrogen					
12027-38-2 (0)					

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Tungstate(4-),	$PNEC = 0.14 \mu g/L$				
[.mu.12-[orthosilicato(4-)-O					
:0:0:0':0':0':0":0":0":0":0"					
:O''':O''']]tetracosamuox					
ododecaoxododeca-,					
tetrahydrogen					
12027-38-2 (0)					

8.2. Exposure controls

Engineering Measures

None under normal use conditions.

Personal protective equipment **Eye Protection**

Goggles (European standard - EN 166)

Hand Protection

Protective gloves

Natural rubber Se	eakthrough time e manufacturers commendations	Glove thickness -	EU standard EN 374	Glove comments (minimum requirement)
Skin and body protectio	n 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.

Tungstosilicic acid hydrate

(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	No protective equipment is needed under normal use conditions.
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: Particle filter
Small scale/Laboratory use	Maintain adequate ventilation Recommended half mask:- Particle filtering: EN149:2001

Environmental exposure controls Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance	Light yellow	
Odor	Odorless	
Odor Threshold	No data available	
Melting Point/Range	25 °C / 77 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	Not applicable	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
рН	1.98	Acidic
Viscosity	Not applicable	Solid
Water Solubility	Soluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/wat	er)	
Vapor Pressure	No information available	
Density / Specific Gravity	4.5	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	
9.2. Other information		

Molecular Formula	H4-O4O-Si-W12
Molecular Weight	2878.2895
Evaporation Rate	Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

Tungstosilicic acid hydrate		Revision
10.1. Reactivity	None known, based on information available	
10.2. Chemical stability	Stable under normal conditions.	
10.3. Possibility of hazardous rea	ctions	
Hazardous Polymerization Hazardous Reactions	No information available. None under normal processing.	
10.4. Conditions to avoid	Incompatible products. Excess heat.	
10.5. Incompatible materials	Strong bases.	

10.6. Hazardous decomposition products

Silicon dioxide. Tungsten oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity; Oral Dermal Inhalation	Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met
(b) skin corrosion/irritation;	Based on available data, the classification criteria are not met
(c) serious eye damage/irritation;	Based on available data, the classification criteria are not met
(d) respiratory or skin sensitization Respiratory Skin	; Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met
(e) germ cell mutagenicity;	Based on available data, the classification criteria are not met
(f) carcinogenicity;	Based on available data, the classification criteria are not met There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	Based on available data, the classification criteria are not met
(h) STOT-single exposure;	Based on available data, the classification criteria are not met
(i) STOT-repeated exposure;	Based on available data, the classification criteria are not met
Target Organs	None known.

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Revision Date 28-Feb-2025

(j) aspiration hazard;	Based on available data, the classification criteria are not met			
Symptoms / effects,both acute and delayed	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.			

11.2. Information on other hazards

Tungstosilicic acid hydrate

Assess endocrine disrupting properties for human health.	This product does not contain any
known or suspected endocrine disruptors.	

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity	
Ecotoxicity effects	May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances
	which are hazardous for the environment.

12.2. Persistence and degradability Persistence Degradability Degradation in sewage treatment plant	Product 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 potential	May have some potential to bioaccumulate
<u>12.4. Mobility in soil</u>	The 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 assessment	No data available for assessment.
12.6. Endocrine disrupting properties Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
12.7. Other adverse effects	-

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
ProductsWaste 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	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	Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Solutions with low pH-value must be neutralized before discharge. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

Tungstosilicic acid hydrate

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN3260 Corrosive solid, acidic, inorganic, n.o.s. Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O':O':O':O':O':O'':O'':O''':O''':
ADR	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name	UN3260 Corrosive solid, acidic, inorganic, n.o.s. Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O':O':O':O':O':O'':O'':O''':O''':
<u>14.3. Transport hazard class(es)</u> 14.4. Packing group	8 III
IATA	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN3260 Corrosive solid, acidic, inorganic, n.o.s. Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O':O':O':O':O':O'':O'':O''':O''':
14.5. Environmental hazards	No hazards identified
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

X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Tungstosilicic acid hydrate

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O:O' :O':O':O':O'':O'':O''':O''':O ''')]tetracosamuoxododecaoxod odeca-, tetrahydrogen, hydrate	12027-43-9	-	-	-	-	Х	-	-	-
Tungstate(4-), [.mu.12-[orthosilicato(4-)-O:O:O:O' :O':O':O'':O'':O''':O''']]tetraco samuoxododecaoxododeca-, tetrahydrogen		234-719-8	_	_	Х	Х	KE-35415	Х	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O:O' :O':O':O':O'':O'':O''':O ''')]tetracosamuoxododecaoxod odeca-, tetrahydrogen, hydrate	12027-43-9	-	-	-	-	Х	-	-
Tungstate(4-), [.mu.12-[orthosilicato(4-)-O:O:O:O' :O':O':O'':O'':O'':O''':O''']]tetraco samuoxododecaoxododeca-, tetrahydrogen		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 (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Tungstate(4-), [.mu.12-(orthosilicato(4-)-O:O:O:O': O':O':O':O'':O'':O''':O''':O "'')]tetracosamuoxododecaoxodod eca-, tetrahydrogen, hydrate		-	-	-
Tungstate(4-), [.mu.12-[orthosilicato(4-)-O:O:O:O': O':O':O'':O'':O'':O''':O''']]tetracosa muoxododecaoxododeca-, tetrahydrogen		-	-	-

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
Tungstate(4-), [.mu.12-(orthosilicato(4-)-O: O:O:O':O':O':O':O'':O''':O'' ':O ''')]tetracosamuoxododeca oxododeca-, tetrahydrogen, hydrate	12027-43-9	Not applicable	Not applicable
Tungstate(4-), [.mu.12-[orthosilicato(4-)-O: O:O:O':O':O':O':O'':O'':O'':O'' ":O''']]tetracosamuoxodod ecaoxododeca-, tetrahydrogen	12027-38-2	Not applicable	Not applicable

Tungstosilicic acid hydrate

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

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

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Tungstate(4-),	WGK2	
[.mu.12-[orthosilicato(4-)-O:O:O:		
O':O':O':O'':O'':O''':O''':O''':O''']]tetr		
acosamuoxododecaoxododec		
a-, tetrahydrogen		

15.2. Chemical safety assessment

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

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

H412 - Harmful to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
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	y
WEL - Workplace Exposure Limit	TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level	Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipment	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%	EC50 - Effective Concentration 50%
NOEC - No Observed Effect Concentration	POW - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic	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 hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Prepared By	Health, Safety and Environmental Department
Creation Date	10-Feb-2015
Revision Date	28-Feb-2025
Revision Summary	Not applicable.

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

Disclaimer

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