

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

Revision Date 20-Feb-2024 Revision Number 3

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

1.1. Product identifier

Product Description: <u>Aluminum rod, alloy 6061</u>

Cat No. : 42055

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

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

CLP 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

Based on available data, the classification criteria are not met

Environmental hazards

Based on available data, the classification criteria are not met

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Full text of Hazard Statements: see section 16

2.2. Label elements

None required

EUH210 - Safety data sheet available on request

2.3. Other hazards

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Aluminum	7429-90-5	EEC No. 231-072-3	97.9	-
Magnesium	7439-95-4	EEC No. 231-104-6	1.0	Flam. Sol. 1 (H228) Water-react. 2 (H261) Self-heat. 2 (H252)
Silicon	7440-21-3	EEC No. 231-130-8	0.6	-
Copper	7440-50-8	EEC No. 231-159-6	0.27	-
Chromium	7440-47-3	EEC No. 231-157-5	0.2	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult a physician.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Inhalation Remove to fresh air.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

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

No information available.

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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

approved class D extinguishers.

Extinguishing media which must not be used for safety reasons

Water may be ineffective.

5.2. Special hazards arising from the substance or mixture

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

Hazardous Combustion Products

None under normal use conditions.

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

No special precautions required.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Pick up and transfer to properly labelled containers.

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

Ensure adequate ventilation.

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 in a dry place. Keep away from acids.

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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): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Aluminum	STEL: 30 mg/m ³ 15 min		TWA: 1 mg/m ³ 8 hr.
	STEL: 12 mg/m ³ 15 min		respirable fraction
	TWA: 10 mg/m ³ 8 hr		STEL: 3 mg/m ³ 15 min
	TWA: 4 mg/m ³ 8 hr		
Silicon	STEL: 30 ppm 15 min		TWA: 4 mg/m ³ 8 hr.
	STEL: 12 mg/m ³ 15 min		respirable dust
	TWA: 10 mg/m ³ 8 hr		TWA: 10 mg/m ³ 8 hr. Si
	TWA: 4 mg/m ³ 8 hr		total inhalable dust
			STEL: 30 mg/m ³ 15 min
			STEL: 12 mg/m ³ 15 min
Copper	STEL: 0.6 mg/m ³ 15 min		TWA: 0.2 mg/m ³ 8 hr. Cu
	STEL: 2 mg/m ³ 15 min		fume
	TWA: 1 mg/m ³ 8 hr		TWA: 1 mg/m ³ 8 hr. Cu
	TWA: 0.2 mg/m ³ 8 hr		dusts and mists
	_		STEL: 2 mg/m ³ 15 min
			STEL: 0.6 mg/m ³ 15 min
Chromium	STEL: 1.5 mg/m ³ 15 min	TWA: 2 mg/m ³ (8hr)	TWA: 2 mg/m ³ 8 hr.
	TWA: 0.5 mg/m ³ 8 hr		STEL: 6 mg/m³ 15 min

Biological limit values

List source(s):

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

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Copper		DNEL = 273mg/kg		DNEL = 137mg/kg
7440-50-8 (0.27)		bw/day		bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Chromium 7440-47-3 (0.2)			DNEL = 0.5mg/m ³	

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Aluminum 7429-90-5 (97.9)				PNEC = 20mg/L	

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Copper 7440-50-8 (0.27)	PNEC = 7.8µg/L	PNEC = 87mg/kg sediment dw	PNEC = 230µg/L	PNEC = 65mg/kg soil dw
Chromium	PNEC = 6.5µg/L	PNEC =		PNEC = 21.1mg/kg
7440-47-3 (0.2)		205.7mg/kg sediment dw		soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Copper	$PNEC = 5.2 \mu g/L$	PNEC = 676mg/kg			
7440-50-8 (0.27)		sediment dw			

8.2. Exposure controls

Engineering Measures

None under normal use conditions.

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection No special protective equipment required

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Disposable gloves	See manufacturers	-	EN 374	(minimum requirement)
	recommendations			

Skin and body protection Long sleeved clothing.

Respiratory Protection No special protective equipment required.

Large scale/emergency use In case of insufficient ventilation, wear suitable respiratory equipment

Small scale/Laboratory use No personal respiratory protective equipment normally required

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.

Solid

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Solid

AppearanceSilver / GreyOdorOdorlessOdor ThresholdNo data available

Melting Point/Range660.4 °CSoftening PointNo data availableBoiling Point/RangeNo data available

Flammability (liquid) Not applicable

Flammability (solid,gas) No information available

Explosion Limits No data available

Flash Point No data available Method - No information available

Autoignition TemperatureNo data availableDecomposition TemperatureNo data availablepHNo data availableViscosityNo data available

Water Solubility Insoluble

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Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor PressureNo data availableDensity / Specific GravityNo data availableBulk Density2.7 g/cm3

Vapor Density No data available (Air = 1.0)

Particle characteristics No data available

9.2. Other information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity Yes

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous PolymerizationNo information available.Hazardous ReactionsNo information available.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

Oral No data available
Dermal No data available
Inhalation No data available

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation			
Aluminum	-	-	LC50 > 0.888 mg/L (Rat) 4 h			
Magnesium	LD50 = 230 mg/kg (Rat)	-	-			
Silicon	LD50 = 3160 mg/kg (Rat)	-	-			
Copper	-	-	LC50 > 5.11 mg/L (Rat) 4 h			

(b) skin corrosion/irritation; No data available

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(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There 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; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects,both acute and No information available.

delayed

11.2. Information on other hazards

Endocrine Disrupting Properties 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 effectsContains a substance which is:. Very toxic to aquatic organisms. The product contains

following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Copper	LC50: = 1.25 mg/L, 96h static (Lepomis macrochirus) LC50: = 0.3 mg/L, 96h semi-static (Cyprinus carpio) LC50: = 0.8 mg/L, 96h static (Cyprinus carpio) LC50: = 0.112 mg/L, 96h static (Cyprinus carpio) LC50: = 0.112 mg/L, 96h flow-through (Poecilia reticulata) LC50: = 0.052 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 0.0068 - 0.0156 mg/L, 96h (Pimephales promelas) LC50: < 0.3 mg/L, 96h static (Pimephales promelas) LC50: = 0.2 mg/L, 96h flow-through (Pimephales promelas)	EC50: = 0.03 mg/L, 48h Static (Daphnia magna)	EC50: 0.031 - 0.054 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: 0.0426 - 0.0535 mg/L, 72h static (Pseudokirchneriella subcapitata)

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12.2. Persistence and degradability No information available

Degradation in sewage treatment plant

Degradability

Not relevant for inorganic substances. Contains substances known to be hazardous to the environment or not degradable in waste

water treatment plants.

No information available 12.3. Bioaccumulative potential

	Component	log Pow	Bioconcentration factor (BCF)
Г	Chromium		1.03 - 1.22

12.4. Mobility in soil No information available

12.5. Results of PBT and vPvB

assessment

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not

require 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

Products

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 Dispose of this container to hazardous or special waste collection point. Empty containers

retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and

empty container away from heat and sources of ignition.

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. Can be landfilled or incinerated, when in compliance with local regulations. Do

not flush to sewer.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

Not regulated ADR

14.1. UN number

14.2. UN proper shipping name

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14.3. Transport hazard class(es)

14.4. Packing group

IATA Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

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

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
Aluminum	7429-90-5	231-072-3	ı	-	X	X	KE-00881	Χ	-
Magnesium	7439-95-4	231-104-6	-	-	Х	X	KE-22673	Χ	-
Silicon	7440-21-3	231-130-8	-	-	Х	Χ	KE-31029	X	-
Copper	7440-50-8	231-159-6	-	-	Х	X	KE-08896	X	-
Chromium	7440-47-3	231-157-5	-	-	Х	Χ	KE-05970	X	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Aluminum	7429-90-5	Х	ACTIVE	Х	-	Х	Х	Х
Magnesium	7439-95-4	X	ACTIVE	X	-	X	X	X
Silicon	7440-21-3	X	ACTIVE	Х	-	Х	Х	Х
Copper	7440-50-8	X	ACTIVE	X	-	X	X	X
Chromium	7440-47-3	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

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)
Aluminum	7429-90-5	-	Use restricted. See item 75. (see link for restriction details)	-
Magnesium	7439-95-4	-	-	-
Silicon	7440-21-3	-	-	-
Copper	7440-50-8	-	Use restricted. See item 75. (see link for restriction details)	-
Chromium	7440-47-3	-	Use restricted. See item 75. (see link for restriction	-

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	details)	

REACH links

https://echa.europa.eu/substances-restricted-under-reach

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
Aluminum	7429-90-5	Not applicable	Not applicable
Magnesium	7439-95-4	Not applicable	Not applicable
Silicon	7440-21-3	Not applicable	Not applicable
Copper	7440-50-8	Not applicable	Not applicable
Chromium	7440-47-3	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

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.

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

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

WGK Classification

Water endangering class = non-hazardous to waters (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class		
Aluminum	nwg			
Magnesium	nwg			
Silicon	nwg			
Copper	WGK2	Class III: 1 mg/m³ (Massenkonzentration)		
Chromium	nwg	Class III: 1 mg/m³ (Massenkonzentration)		

Component	France - INRS (Tables of occupational diseases)			
Aluminum	Tableaux des maladies professionnelles (TMP) - RG 32			
	Tableaux des maladies professionnelles (TMP) - RG 16,RG 16bis			
Chromium	Tableaux des maladies professionnelles (TMP) - RG 10			

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Copper	Prohibited and Restricted		
7440-50-8 (0.27)	Substances		
Chromium	Prohibited and Restricted		
7440-47-3 (0.2)	Substances		

15.2. Chemical safety assessment

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Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

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

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b)

ICAO/IATA - International Civil Aviation Organization/International Air

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances **KECL** - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

TWA - Time Weighted Average Predicted No Effect Concentration (PNEC)

DNEL - Derived No Effect Level RPE - Respiratory Protective Equipment IARC - International Agency for Research on Cancer

LC50 - Lethal Concentration 50%

LD50 - Lethal Dose 50%

NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic

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

Transport Association IMO/IMDG - International Maritime Organization/International Maritime MARPOL - International Convention for the Prevention of Pollution from

Dangerous Goods Code OECD - Organisation for Economic Co-operation and Development

Ships ATE - Acute Toxicity Estimate

BCF - Bioconcentration factor

VOC - (Volatile Organic Compound)

Key literature references and sources for data

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

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

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data **Health Hazards** Calculation method Calculation method **Environmental hazards**

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

Revision Date 20-Feb-2024

Revision Summary New emergency telephone response service provider.

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