

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

Creation Date 21-May-2012 Revision Date 02-Feb-2024 Revision Number 4

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

1.1. Product identifier

Product Description: <u>Ethyl vinyl ketone</u>

 Cat No.:
 L06829

 Synonyms
 EVK

 CAS No
 1629-58-9

 EC No
 204-881-4

 Molecular Formula
 C5 H8 O

REACH registration number -

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

Flammable liquids Category 2 (H225)

Health hazards

ALFAAL06829

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Based on available data, the classification criteria are not met

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

Precautionary Statements

P240 - Ground and bond container and receiving equipment

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

2.3. Other hazards

Contains a known or suspected endocrine disruptor Contains a substance on the National Authorities Endocrine Disruptor Lists

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Ethyl vinyl ketone	1629-58-9	EEC No. 216-624-3	>95	Flam. Liq. 2 (H225)
2,6-Di-tert-butyl-p-cresol	128-37-0	EEC No. 204-881-4	0.1	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
2,6-Di-tert-butyl-p-cresol	-	1	-

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

If symptoms persist, call a physician.

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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. If skin irritation persists,

call a physician.

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

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

symptoms occur.

Self-Protection of the First Aider No special precautions required.

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

. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

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

Carbon dioxide (CO₂). Dry chemical. Chemical foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Flammable. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO2), 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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

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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 ingestion and inhalation. Do not get in eyes, on skin, or on clothing.

Hygiene Measures

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and flame. Refrigerator/flammables. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Class 3 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. **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
2,6-Di-tert-butyl-p-cresol	STEL: 30 mg/m ³ 15 min		TWA: 2 mg/m ³ 8 hr.
	TWA: 10 mg/m ³ 8 hr		STEL: 6 mg/m ³ 15 min

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)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
2,6-Di-tert-butyl-p-cresol 128-37-0 (0.1)				DNEL = 0.5mg/kg bw/dav

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
2,6-Di-tert-butyl-p-cresol				$DNEL = 3.5mg/m^3$

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128-37-0 (0.1)				
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Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
2,6-Di-tert-butyl-p-cresol	$PNEC = 0.199 \mu g/L$	$PNEC = 99.6 \mu g/kg$	PNEC = 1.99µg/L	PNEC = 0.17mg/L	$PNEC = 47.69 \mu g/kg$
128-37-0 (0.1)		sediment dw			soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
2,6-Di-tert-butyl-p-cresol	PNEC = 0.0199µg/L	PNEC = 9.96µg/kg		PNEC = 8.33mg/kg	
128-37-0 (0.1)		sediment dw		food	

8.2. Exposure controls

Engineering Measures

Use explosion-proof electrical/ventilating/lighting equipment. 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 equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material Natural rubber Nitrile rubber Neoprene	Breakthrough time See manufacturers recommendations	Glove thickness	EU standard EN 374	Glove comments (minimum requirement)
PVC				

Skin and body protection Long sleeved 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 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

Small scale/Laboratory use Maintain adequate ventilation

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

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Physical State Liquid

Appearance Amber Odor Odorless

Odor ThresholdNo data availableMelting Point/RangeNo data availableSoftening PointNo data available

Boiling Point/Range103 - 104 °C / 217.4 - 219.2 °F @ 760 mmHg **Flammability (liquid)**Highly flammable
On basis of test data

Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Flash Point -6 °C / 21.2 °F Method - No information available

Autoignition Temperature
Decomposition Temperature
pH
Viscosity
Water Solubility
Solubility in other solvents
No data available
No information available
No information available
No information available

Partition Coefficient (n-octanol/water)

Component log Pow 2,6-Di-tert-butyl-p-cresol 5.1

Vapor Pressure No information available

Density / Specific Gravity 0.849

Bulk DensityNot applicableLiquidVapor Density2.9(Air = 1.0)

Particle characteristics Not applicable (liquid)

9.2. Other information

Molecular Formula C5 H8 O Molecular Weight 84.12

Explosive Properties Vapors may form explosive mixtures with air

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous PolymerizationNo information available.Hazardous ReactionsNone under normal processing.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.

Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Thermal decomposition can lead to release

of irritating gases and vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information No acute toxicity information is available for this product

(a) acute toxicity;

Oral Based on available data, the classification criteria are not met **Dermal** Based on available data, the classification criteria are not met Inhalation Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,6-Di-tert-butyl-p-cresol	> 6 g/kg (Rat)	> 2 g/kg (Rat)	-

No data available (b) skin corrosion/irritation;

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

(d) respiratory or skin sensitization;

Respiratory No data available Skin No data available

No data available (e) germ cell mutagenicity;

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

No data available (h) STOT-single exposure;

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Other Adverse Effects The toxicological properties have not been fully investigated.

delayed

Symptoms / effects,both acute and Inhalation of high vapor concentrations may cause symptoms like headache, dizziness,

tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting

properties for human health

Contains a substance on the National Authorities Endocrine Disruptor Lists

Component	EU National Authorities Endocrine Disruptor Lists - Health	
2,6-Di-tert-butyl-p-cresol 128-37-0 (0.1)	List II	

SECTION 12: ECOLOGICAL INFORMATION

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Ecotoxicity effects Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae
2,6-Di-tert-butyl-p-cresol	LC50 = 0.199 mg/L 96h	EC50 >0.31 mg/L 48h	EC50 = 0.758 mg/L 96h
	_	_	EC50 = 6 mg/L 72 h

Component	Microtox	M-Factor
2,6-Di-tert-butyl-p-cresol	EC50 = 7.82 mg/L 5 min	1
	EC50 = 8.57 mg/L 15 min	
	EC50 = 8.98 mg/L 30 min	

12.2. Persistence and degradability No information available

12.3. Bioaccumulative potential No information available

Component	log Pow	Bioconcentration factor (BCF)
2,6-Di-tert-butyl-p-cresol	5.1	230 - 2500 dimensionless

12.4. Mobility in soil

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

Persistent Organic Pollutan
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. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1993

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14.2. UN proper shipping name Flammable liquid, n.o.s. Ethyl vinyl ketone

14.3. Transport hazard class(es) 3 14.4. Packing group II

ADR

14.1. UN number UN1993

14.2. UN proper shipping nameFlammable liquid, n.o.s.Technical Shipping NameEthyl vinyl ketone

14.3. Transport hazard class(es) 3 14.4. Packing group

IATA

14.1. UN number UN1993

14.2. UN proper shipping nameFlammable liquid, n.o.s.Technical Shipping NameEthyl vinyl ketone

14.3. Transport hazard class(es) 3 14.4. Packing group II

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
Ethyl vinyl ketone	1629-58-9	216-624-3	-	-	X	X	KE-28049	-	-
2.6-Di-tert-butyl-p-cresol	128-37-0	204-881-4	-	-	Х	Х	KE-03079	Х	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Ethyl vinyl ketone	1629-58-9	X	ACTIVE	X	Ī	Χ	X	X
2,6-Di-tert-butyl-p-cresol	128-37-0	X	ACTIVE	X	i	X	Х	X

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) -	REACH (1907/2006) -	REACH Regulation (EC
		Annex XIV - Substances	Annex XVII - Restrictions	1907/2006) article 59 -
		Subject to Authorization	on Certain Dangerous	Candidate List of
			Substances	Substances of Very High
				Concern (SVHC)
Ethyl vinyl ketone	1629-58-9	-	-	-
2,6-Di-tert-butyl-p-cresol	128-37-0	-	-	-

Seveso III Directive (2012/18/EC)

Component CAS No Seveso III Directive (2012/18/EC)	- Seveso III Directive (2012/18/EC) -
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Ethyl vinyl ketone

		Qualifying Quantities for Major Accident	Qualifying Quantities for Safety Report
		Notification	Requirements
Ethyl vinyl ketone	1629-58-9	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	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 .

National Regulations

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

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Ethyl vinyl ketone	WGK3	
2,6-Di-tert-butyl-p-cresol	WGK 2	

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

H225 - Highly flammable liquid and vapor

H302 - Harmful if swallowed

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H400 - Very toxic to aquatic life

H410 - Very toxic 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 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 **IECSC** - Chinese Inventory of Existing Chemical Substances

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

KECL - Korean Existing and Evaluated Chemical Substances

WEL - Workplace Exposure Limit **ACGIH** - American Conference of Governmental Industrial Hygienists

IARC - International Agency for Research on Cancer

DNEL - Derived No Effect Level

Predicted No Effect Concentration (PNEC) LD50 - Lethal Dose 50%

TWA - Time Weighted Average

RPE - Respiratory Protective Equipment

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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

Ships ATE - Acute Toxicity Estimate

Transport Association

ICAO/IATA - International Civil Aviation Organization/International Air

MARPOL - International Convention for the Prevention of Pollution from

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

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Prepared By Health, Safety and Environmental Department

Creation Date 21-May-2012 **Revision Date** 02-Feb-2024

New emergency telephone response service provider. **Revision Summary**

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