

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

Revision Date 01-Feb-2024

Revision Number 4

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

1.1. Product identifier

Product Description:	<u>Di-n-butyltin bis(2-ethylhexanoate)</u>
Cat No. :	71126
Synonyms	2-Ethylhexanoic acid dibutyltin salt
Index No	050-032-00-4
CAS No	2781-10-4
EC No	220-481-2
Molecular Formula	C24 H48 O4 Sn
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

Based on available data, the classification criteria are not met

Di-n-butyltin bis(2-ethylhexanoate)

Health hazards

Germ Cell Mutagenicity Reproductive Toxicity Specific target organ toxicity - (repeated exposure)

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

H341 - Suspected of causing genetic defects
H360FD - May damage fertility. May damage the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
May form combustible dust concentrations in air

Precautionary Statements

P201 - Obtain special instructions before use
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P308 + P313 - IF exposed or concerned: Get medical advice/attention

Additional EU labelling

Restricted to professional users

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

May form explosible dust-air mixture if dispersed 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 %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Di-n-butyltin di-2-ethylhexanoate	2781-10-4	EEC No. 220-481-2	98	Muta. 2 (H341) Repr. 1A (H360FD) STOT RE 1 (H372)

Category 2 (H341) Category 1A (H360FD) Category 1 (H372)

-

REACH registration number

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measure	es_
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. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. 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. Immediate medical attention is required.
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

None reasonably foreseeable.

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

Water spray. Carbon dioxide (CO 2). Dry chemical. Chemical foam.

Extinguishing media which must not be used for safety reasons No information available.

5.2. Special hazards arising from the substance or mixture

Dust can form an explosive mixture with air. Fine dust dispersed in air may ignite.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Metal 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. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Di-n-butyltin bis(2-ethylhexanoate)

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

6.2. Environmental precautions

Should not be released into the environment. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

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

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). 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 in a dry, cool and well-ventilated place. Keep container tightly closed.

Technical Rules for Hazardous Substances (TRGS) 510 Class 6.1C 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
Di-n-butyltin di-2-ethylhexanoate	STEL: 0.2 mg/m ³ 15 min		
	TWA: 0.1 mg/m ³ 8 hr		
	Skin		

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)
Di-n-butyltin		DNEL = 1mg/kg bw/day		DNEL = 0.2mg/kg
di-2-ethylhexanoate				bw/day
2781-10-4 (98)				

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Di-n-butyltin		DNEL = 0.07mg/m ³		$DNEL = 0.01 mg/m^3$
di-2-ethylhexanoate		-		-
2781-10-4 (98)				

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	,
Di-n-butyltin di-2-ethylhexanoate 2781-10-4 (98)	PNEC = 2µg/L		PNEC = 20µg/L	PNEC = 4.4mg/L	

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Di-n-butyltin di-2-ethylhexanoate 2781-10-4 (98)	PNEC = 0.2µg/L			PNEC = 0.67mg/kg food	

8.2. Exposure controls

Engineering Measures

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 equip Eye Protection		(European standard	I - EN 166)	
Hand Protection	Protectiv	e gloves		
	Breakthrough time See manufacturers recommendations	Glove thickness -	EU standard EN 374	Glove comments (minimum requirement)

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

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.

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	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 No information available.

Di-n-butyltin bis(2-ethylhexanoate)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Powder Solid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	White Odorless No data available 57 - 59 °C / 134.6 - 138.2 °F No data available No information available Not applicable No information available No data available	Solid
Flash Point Autoignition Temperature Decomposition Temperature pH Viscosity Water Solubility	No information available No data available No data available Not applicable Not applicable NEGLIGIBLE	Method - No information available
Solubility in other solvents Partition Coefficient (n-octanol/wate Vapor Pressure Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	No information available er) No data available No data available No data available Not applicable No data available	Solid
9.2. Other information	C24 H48 O4 Sn	

519.34 Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Molecular Weight

Evaporation Rate

Yes

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Di-n-butyltin bis(2-ethylhexanoate)

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

10.4. Conditions to avoid

Incompatible products.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Metal 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 No data available No data available

Component LD50 Oral		LD50 Dermal	LC50 Inhalation
Di-n-butyltin di-2-ethylhexanoate	LD50 = 200 mg/kg (Rat)	-	-

(b) skin corrosion/irritation;	No data available
(c) serious eye damage/irritation;	No data available
(d) respiratory or skin sensitization; Respiratory Skin	No data available No data available
(e) germ cell mutagenicity;	Category 2
(f) carcinogenicity;	No data available
	There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	Category 1A
(h) STOT-single exposure;	No data available
(i) STOT-repeated exposure;	Category 1
Target Organs	No information available.
(j) aspiration hazard;	Not applicable Solid
Other Adverse Effects	The toxicological properties have not been fully investigated.
	The toxicological properties have not been faily investigated.

delayed

11.2. Information on other hazards

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

SECTION 12: ECOLOGICAL INFORMATION

<u>12.1. Toxicity</u> Ecotoxicity effects	May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.
<u>12.2. Persistence and degradability</u> Persistence Degradation in sewage treatment plant	Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary based on information available, May persist. 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
<u>12.5. Results of PBT and vPvB</u> assessment	Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).
<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	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.		
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.		

Di-n-butyltin bis(2-ethylhexanoate)

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

ADRNot regulated14.1. UN number14.2. UN proper shipping name14.3. Transport hazard class(es)14.4. Packing groupIATANot regulated14.1. UN number14.2. UN proper shipping name14.3. Transport hazard class(es)14.4. Packing group

14.5. Environmental hazards	No hazards identified
11.C. Createl ana cutions for user	No openial processions rea

14.6. Special precautions for user No special precautions required.

<u>14.7. Maritime transport in bulk</u> Not applicable, packaged goods according to IMO instruments

SECTION 15: REGULATORY INFORMATION

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

International Inventories

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

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Di-n-butyltin di-2-ethylhexanoate	2781-10-4	220-481-2	-	-	Х	Х	KE-09968	Х	Х
Component	CAS No	TSCA	notific	ventory ation - nactive	DSL	NDSL	AICS	NZIoC	PICCS
Di-n-butyltin di-2-ethylhexanoate	2781-10-4	Х	ACT	IVE	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)
Di-n-butyltin di-2-ethylhexanoate	2781-10-4	-	Use restricted. See item 20. (see link for restriction details)	-

Di-n-butyltin bis(2-ethylhexanoate)

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	
Di-n-butyltin di-2-ethylhexanoate	2781-10-4	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

Component	ANNEX I - PART 1 List of chemicals subject to export notification procedure (referred to in Article 8)	ANNEX I - PART 2 List of chemicals qualifying for PIC notification (referred to in Article 11)	ANNEX I - PART 3 List of chemicals subject to the PIC procedure (referred to in Articles 13 and 14)
Di-n-butyltin di-2-ethylhexanoate 2781-10-4 (98)	sr — severe restriction i(2) — industrial chemical for public	-	-

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012R0649&qid=1604065742303.

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 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women 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 = 3 (self classification)

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
Di-n-butyltin di-2-ethylhexanoate 2781-10-4 (98)	Prohibited and Restricted Substances		

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

H341 - Suspected of causing genetic defects

Di-n-butyltin bis(2-ethylhexanoate)

H360FD - May damage fertility. May damage the unborn child H372 - Causes damage to organs through prolonged or repeated exposure H360Fd - May damage fertility. Suspected of damaging the unborn child

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	
 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	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.

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.

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

Prepared By	Health, Safety and Environmental Department
Revision Date	01-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

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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