

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

Creation Date 27-Sep-2010 Revision Date 25-Jan-2024 Revision Number 3

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

#### 1.1. Product identifier

Product Description: <u>Benzyltrimethylammonium chloride</u>

 Cat No.:
 A16759

 Synonyms
 BTMAC.

 CAS No
 56-93-9

 EC No
 200-300-3

 Molecular Formula
 C10 H16 CI N

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

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

**Physical hazards** 

ALFAAA16759

#### Benzyltrimethylammonium chloride

Revision Date 25-Jan-2024

Based on available data, the classification criteria are not met

**Health hazards** 

Acute oral toxicity

Acute dermal toxicity

Acute Inhalation Toxicity - Dusts and Mists

Germ Cell Mutagenicity

Category 3 (H301)

Category 3 (H311)

Category 4 (H332)

Category 2 (H341)

**Environmental hazards** 

Chronic aquatic toxicity Category 3 (H412)

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

H332 - Harmful if inhaled

H341 - Suspected of causing genetic defects

H412 - Harmful to aquatic life with long lasting effects

H301 + H311 - Toxic if swallowed or in contact with skin

EUH070 - Toxic by eye contact

May form combustible dust concentrations in air

#### **Precautionary Statements**

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

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

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

#### 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
Benzyltrimethyl ammonium chloride	56-93-9	EEC No. 200-300-3	>95	Acute Tox. 4 (H332) Acute Tox. 3 (H301)

## Benzyltrimethylammonium chloride

		Acute Tox. 3 (H311) Muta. 2 (H341) Acute Chronic 3 (H412)
		Aquatic Chronic 3 (H412) EUH070

#### 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 In the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15

minutes.

**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 (CO2), dry chemical, 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

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

## **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx).

## 5.3. Advice for firefighters

Revision Date 25-Jan-2024

#### Benzyltrimethylammonium chloride

Revision Date 25-Jan-2024

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

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. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage. 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

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. 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 containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Protect from moisture.

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**

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

#### Benzyltrimethylammonium chloride

Revision Date 25-Jan-2024

#### **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)
Benzyltrimethyl ammonium		DNEL = 0.5mg/kg		DNEL = 0.25mg/kg
chloride		bw/day		bw/day
56-93-9 (>95)				-

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Benzyltrimethyl ammonium chloride		DNEL = 1.75mg/m <sup>3</sup>		DNEL = 0.88mg/m <sup>3</sup>
56-93-9 ( >95 )				

#### **Predicted No Effect Concentration (PNEC)**

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Benzyltrimethyl ammonium	PNEC =	PNEC = 1.12mg/kg	PNEC =	PNEC = 10mg/L	PNEC =
chloride	0.01194mg/L	sediment dw	0.1194mg/L	-	0.217mg/kg soil dw
56-93-9 ( >95 )	_				

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Benzyltrimethyl ammonium	PNEC =	PNEC =			
chloride	0.001194mg/L	0.112mg/kg			
56-93-9 (>95)	•	sediment dw			

## 8.2. Exposure controls

#### **Engineering Measures**

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

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

#### Benzyltrimethylammonium chloride

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

Solid

Solid

Revision Date 25-Jan-2024

Small scale/Laboratory use Maintain adequate ventilation

**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 Off-white
Odor Characteristic
Odor Threshold No data available
Melting Point/Range 239 °C / 462.2 °F
Softening Point No data available
Boiling Point/Range No information available

Flammability (liquid) Not applicable

Flammability (solid,gas) No information available

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition Temperature No data available

**Decomposition Temperature** No data available

**pH** 6-8 100 g/l aq. sol

Viscosity Not applicable Solid

Water Solubility 800 g/L

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

**Component** log Pow Benzyltrimethyl ammonium chloride -2.17

Vapor Pressure <0.0001 hPa @ 20 °C
Density / Specific Gravity No data available
Bulk Density No data available

Vapor Density No data available Not applicable

Particle characteristics No data available

9.2. Other information

Molecular Formula C10 H16 CI N Molecular Weight 185.7

Evaporation Rate Not applicable - Solid

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Hygroscopic.

#### Benzyltrimethylammonium chloride

Revision Date 25-Jan-2024

10.3. Possibility of hazardous reactions

Hazardous Polymerization

Hazardous polymerization does not occur.

**Hazardous Reactions** 

None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.

Temperatures above 135°C.

10.5. Incompatible materials

Strong oxidizing agents. Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Nitrogen oxides (NOx).

## SECTION 11: TOXICOLOGICAL INFORMATION

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

#### **Product Information**

(a) acute toxicity;

Oral Category 3
Dermal Category 3
Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzyltrimethyl ammonium chloride	115 mg/kg	510 mg/kg	=

(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; Category 2

(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.

(j) aspiration hazard; Not applicable

Solid

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

Benzyltrimethylammonium chloride

Revision Date 25-Jan-2024

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

Do not flush into surface water or sanitary sewer system. Do not allow material to **Ecotoxicity effects** 

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.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Benzyltrimethyl ammonium chloride		17 mg/L 48h	

12.2. Persistence and degradability Expected to be biodegradable

**Persistence** 

Soluble in water, Persistence is unlikely, based on information available.

Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste

water treatment plants.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Benzyltrimethyl ammonium chloride	-2.17	No data available

The product is water soluble, and may spread in water systems. Will likely be mobile in the 12.4. Mobility in soil

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

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

and very bioaccumulative (vPvB).

12.6. Endocrine disrupting

properties

**Products** 

**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

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.

Dispose of this container to hazardous or special waste collection point. **Contaminated Packaging** 

According to the European Waste Catalog, Waste Codes are not product specific, but **European Waste Catalogue (EWC)** 

application specific.

Benzyltrimethylammonium chloride

Revision Date 25-Jan-2024

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. Do not let this chemical enter the environment.

## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN2811

**14.2. UN proper shipping name** Toxic solid, organic, n.o.s.

Technical Shipping Name Benzyltrimethyl ammonium chloride

14.3. Transport hazard class(es) 6.1 14.4. Packing group III

ADR

**14.1. UN number** UN2811

**14.2. UN proper shipping name** Toxic solid, organic, n.o.s.

Technical Shipping Name Benzyltrimethyl ammonium chloride

**14.3. Transport hazard class(es)** 6.1 **14.4. Packing group** III

IATA

**14.1. UN number** UN2811

**14.2. UN proper shipping name** Toxic solid, organic, n.o.s.

Technical Shipping Name Benzyltrimethyl ammonium chloride

**14.3. Transport hazard class(es)** 6.1 **14.4. Packing group** III

**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
Benzyltrimethyl ammonium	56-93-9	200-300-3	-	-	Х	X	KE-34413	Χ	X
chloride									

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Benzyltrimethyl ammonium chloride	56-93-9	X	ACTIVE	X	-	X	X	Х

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

#### Benzyltrimethylammonium chloride

•

#### Authorisation/Restrictions according to EU REACH

Not applicable

Revision Date 25-Jan-2024

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	3	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Benzyltrimethyl ammonium chloride	56-93-9	-	-	-

#### Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	, , , , , , , , , , , , , , , , , , , ,
Benzyltrimethyl ammonium chloride	56-93-9	Not applicable	Requirements  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** 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
Benzyltrimethyl ammonium chloride 56-93-9 ( >95 )	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

H301 - Toxic if swallowed

H332 - Harmful if inhaled

H341 - Suspected of causing genetic defects

H311 - Toxic in contact with skin

EUH070 - Toxic by eye contact

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 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic 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 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

VOC - (Volatile Organic Compound)

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

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from

Ships ATE - Acute Toxicity Estimate

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** 27-Sep-2010 **Revision Date** 25-Jan-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**