

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

Creation Date 23-Mar-2012 Revision Date 24-Jan-2024 Revision Number 4

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

## 1.1. Product identifier

Product Description: Sodium tert-butoxide

 Cat No.:
 A19942

 CAS No
 865-48-5

 EC No
 212-741-9

 Molecular Formula
 C4 H9 Na 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 solids Category 1 (H228) Self-heating substances/mixtures Category 1 (H251)

### **Health hazards**

ALFAAA19942

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Skin Corrosion/Irritation
Serious Eye Damage/Eye Irritation

Category 1 B (H314) Category 1 (H318)

#### **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**

H228 - Flammable solid

H251 - Self-heating: may catch fire

H314 - Causes severe skin burns and eye damage

EUH014 - Reacts violently with water

May form combustible dust concentrations in air

## **Precautionary Statements**

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

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

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

## 2.3. Other hazards

Reacts violently with water

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

May form explosible dust-air mixture if dispersed

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
Sodium 2-methylpropan-2-olate	865-48-5	EEC No. 212-741-9	>95	Flam. Sol. 1 (H228) Self-heat. 1 (H251) Skin Corr. 1B (H314) Eye Dam. 1 (H318) (EUH014)

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**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** Immediate medical attention is required. Rinse immediately with plenty of water, also under

the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.

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

clothes and shoes. Call a physician immediately.

**Ingestion** Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Immediate medical attention is required. Drink plenty of water.

**Inhalation** Remove to fresh air. If breathing is difficult, give oxygen. 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. Call

a physician or poison control center immediately.

**Self-Protection of the First Aider** Use personal protective equipment as required.

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

Causes burns by all exposure routes. . 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**

Alcohol resistant foam. Dry chemical. Dry sand.

## Extinguishing media which must not be used for safety reasons

Water. Carbon dioxide (CO<sub>2</sub>).

# 5.2. Special hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Reacts violently with water. Flammable. Dust can form an explosive mixture with air. Self-heating; exposure to air may cause substance to self-heat without an energy supply.

#### **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. 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

Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

#### 6.2. Environmental precautions

Should not be released into the environment. Do not allow material to contaminate ground water system. See Section 12 for additional Ecological Information.

## 6.3. Methods and material for containment and cleaning up

Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Do not expose spill to water. Remove all sources of ignition. Provide adequate ventilation.

#### 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 breathe dust. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Remove all sources of ignition. Take precautionary measures against static discharges.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from water or moist air. Flammables area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep under nitrogen.

Technical Rules for Hazardous Substances (TRGS) 510 Class 4.2 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

# **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 (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Sodium 2-methylpropan-2-olate 865-48-5 ( >95 )	DNEL = 1mg/m <sup>3</sup>	DNEL = 1mg/m <sup>3</sup>	DNEL = 1mg/m <sup>3</sup>	DNEL = 1mg/m <sup>3</sup>

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

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Sodium	PNEC = 0.11mg/L	PNEC =	PNEC = 1.1mg/L	PNEC = 10mg/L	PNEC =
2-methylpropan-2-olate		0.419mg/kg		-	0.0192mg/kg soil
865-48-5 ( >95 )		sediment dw			dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Sodium	PNEC = 0.011mg/L	PNEC =			
2-methylpropan-2-olate		0.0419mg/kg			
865-48-5 ( >95 )		sediment dw			

## 8.2. Exposure controls

## **Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

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 Face protection shield (European standard - EN 166)

Hand Protection Protective gloves

Glove material Nitrile rubber Neoprene Natural rubber	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** When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

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.

# **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

#### 9.1. Information on basic physical and chemical properties

Physical State Powder Solid

Appearance Light cream

Odor
Odor No information available
No data available
No information available

Flammability (liquid) Not applicable Solid

Flammability (solid,gas) No information available

Explosion Limits No data available

Flash Point 12 °C / 53.6 °F Method - No information available

Autoignition TemperatureNo data availableDecomposition TemperatureNo data availablePHNot applicable

Viscosity Not applicable Solid

Water Solubility Reacts violently with water Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure

Density / Specific Gravity

Bulk Density

No data available
No data available
No data available
No data available

Vapor Density Not applicable Solid

Particle characteristics No data available

# 9.2. Other information

Molecular Formula C4 H9 Na O Molecular Weight 96.1

Flammable solids Burning rate or burning time = > 2.2 mm/s or < 45 secs

Wetted zone passed - Yes

Evaporation Rate Not applicable - Solid

# **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity Yes

10.2. Chemical stability

Moisture sensitive. Air sensitive.

## 10.3. Possibility of hazardous reactions

**Hazardous Polymerization Hazardous Reactions**Hazardous polymerization does not occur.
Reacts violently with water.

10.4. Conditions to avoid

Incompatible products. Exposure to moisture. Exposure to air. Heat, flames and sparks.

10.5. Incompatible materials

Acids. Water. Alcohols. Halogens. oxygen. Carbon dioxide (CO2). halogenated agents.

Reducing Agent.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Thermal decomposition can lead to release

of irritating gases and vapors.

# **SECTION 11: TOXICOLOGICAL INFORMATION**

# 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 No data available **Dermal** No data available Inhalation No data available

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

No data available Respiratory No data available Skin

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

No data available (g) reproductive toxicity;

No data available (h) STOT-single exposure;

(i) STOT-repeated exposure; No data available

No information available. **Target Organs** 

Not applicable (j) aspiration hazard;

Solid

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

delayed

Symptoms / effects,both acute and 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

**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 effects**Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is

available.

12.2. Persistence and degradability

PersistenceReacts with water.DegradabilityReacts with water.

Degradation in sewage treatment plant

No information available. Reacts violently with water.

12.3. Bioaccumulative potential Bioaccumulation is unlikely; Product does not bioaccumulate due to reaction with water

12.4. Mobility in soil Reacts violently with water

12.5. Results of PBT and vPvB

assessment

Reacts violently with water. Substance is not considered persistent, bioaccumulative and

toxic (PBT) / very persistent and very bioaccumulative (vPvB).

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. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic

organisms.

# **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN3206

14.2. UN proper shipping name Alkali metal alcoholates, n.o.s
Technical Shipping Name (SODIUM TERT-BUTOXIDE)

14.3. Transport hazard class(es)4.2Subsidiary Hazard Class814.4. Packing groupII

## ADR

<u>14.1. UN number</u> UN3206

14.2. UN proper shipping name Alkali metal alcoholates, n.o.s
Technical Shipping Name (SODIUM TERT-BUTOXIDE)

14.3. Transport hazard class(es)4.2Subsidiary Hazard Class814.4. Packing groupII

#### IATA

**14.1. UN number** UN3206

14.2. UN proper shipping nameAlkali metal alcoholates, n.o.sTechnical Shipping Name(SODIUM TERT-BUTOXIDE)

14.3. Transport hazard class(es)4.2Subsidiary Hazard Class814.4. Packing groupII

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
Sodium 2-methylpropan-2-olate	865-48-5	212-741-9	-	1	Х	Χ	99-3-1186	Χ	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Sodium 2-methylpropan-2-olate	865-48-5	X	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) -	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

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				Concern (SVHC)
Sodium 2-methylpropan-2-olate	865-48-5	-	-	-

## 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
Sodium 2-methylpropan-2-olate	865-48-5	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
Sodium 2-methylpropan-2-olate	WGK1	

# 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

H228 - Flammable solid

H251 - Self-heating; may catch fire

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

EUH014 - Reacts violently with water

## 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 List

Substances/EU List of Notified Chemical Substances **PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

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

AICS - Australian Inventory of Chemical Substances NZIoC - New Zealand Inventory of Chemicals

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TWA - Time Weighted Average

EC50 - Effective Concentration 50%

LD50 - Lethal Dose 50%

Transport Association

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

IARC - International Agency for Research on Cancer

ICAO/IATA - International Civil Aviation Organization/International Air

MARPOL - International Convention for the Prevention of Pollution from

Predicted No Effect Concentration (PNEC)

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

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

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

**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.

Prepared By Health, Safety and Environmental Department

**Creation Date** 23-Mar-2012 **Revision Date** 24-Jan-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**