

ALFAAL03187

## (+/-)-2-Methyl-2,4-pentanediol

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

产品说明: (±)-2-甲基-2,4-戊二醇,98%  
Product Description: (+/-)-2-Methyl-2,4-pentanediol

Cat No. : L03187  
Synonyms Hexylene glycol  
CAS No 107-41-5  
Molecular Formula C6 H14 O2

Supplier Avocado Research Chemicals Ltd.  
(Part of Thermo Fisher Scientific)  
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Lancashire, LA3 2XY,  
United Kingdom  
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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

E-mail address begel.sdsdesk@thermofisher.com

Recommended Use Laboratory chemicals.  
Uses advised against No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Viscous liquid Liquid

**Appearance**  
Clear

**Odor**  
Slight

#### Emergency Overview

Combustible liquid. May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Hygroscopic.

#### Classification of the substance or mixture

Flammable liquids.	Category 4
Acute Oral Toxicity	Category 5
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2

#### Label Elements



Signal Word

Warning

**Hazard Statements**

H227 - Combustible liquid  
H303 - May be harmful if swallowed  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation

**Precautionary Statements****Prevention**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P233 - Keep container tightly closed  
P240 - Ground and bond container and receiving equipment  
P243 - Take action to prevent static discharges  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P284 - In case of inadequate ventilation wear respiratory protection

**Response**

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor  
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P332 + P313 - If skin irritation occurs: Get medical advice/attention  
P337 + P313 - If eye irritation persists: Get medical advice/attention  
P374 - Fight fire with normal precautions from a reasonable distance  
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
P404 - Store in a closed container

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

Combustible material. Hygroscopic.

**Health Hazards**

May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

**Environmental hazards**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

This product does not contain any known or suspected endocrine disruptors.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No	Weight %
Hexylene glycol	107-41-5	99

**SECTION 4. FIRST AID MEASURES****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. Get medical attention.

**Inhalation**

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

# SAFETY DATA SHEET

(+/-)-2-Methyl-2,4-pentanediol

**Ingestion**

Do NOT induce vomiting. Get medical attention.

**Most important symptoms and effects**

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**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.

**Notes to Physician**

Treat symptomatically.

## SECTION 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

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

**Specific Hazards Arising from the Chemical**

Combustible material. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions 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

**Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes or clothing.

**Environmental Precautions**

See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition.

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7. HANDLING AND STORAGE

**Handling**

Ensure adequate ventilation. Wear personal protective equipment/face protection. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

**Storage**

Protect from moisture. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

**Specific Use(s)**

Use in laboratories

**(+/-)-2-Methyl-2,4-pentanediol****SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control Parameters**

Component	China	Taiwan	Thailand	Hong Kong
Hexylene glycol	Ceiling: 100 mg/m <sup>3</sup>	-		-

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Hexylene glycol	TWA: 25 ppm STEL: 50 ppm STEL: 10 mg/m <sup>3</sup>	(Vacated) Ceiling: 25 ppm (Vacated) Ceiling: 125 mg/m <sup>3</sup>	Ceiling: 25 ppm Ceiling: 125 mg/m <sup>3</sup>	STEL: 25 ppm 15 min STEL: 123 mg/m <sup>3</sup> 15 min TWA: 25 ppm 8 hr TWA: 123 mg/m <sup>3</sup> 8 hr	

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH - NIOSH - National Institute for Occupational Safety and Health

**Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours

**Exposure Controls****Engineering Measures**

Use explosion-proof electrical/ventilating/lighting equipment. 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 (European standard - EN 166)

**Hand Protection** Protective gloves

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

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 compatibility, 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.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**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

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear	
<b>Physical State</b>	Viscous liquid	Liquid
<b>Odor</b>	Slight	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	6-8	
<b>Melting Point/Range</b>	-40 °C / -40 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	197 °C / 386.6 °F	@ 760 mmHg
<b>Flash Point</b>	93 °C / 199.4 °F	<b>Method -</b> No information available
<b>Evaporation Rate</b>	No data available	
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	<b>Lower</b> 1.3 <b>Upper</b> 7.4	
<b>Vapor Pressure</b>	0.065 mbar @ 20 °C	
<b>Vapor Density</b>	4.1	(Air = 1.0)
<b>Specific Gravity / Density</b>	0.922	
<b>Bulk Density</b>	Not applicable	Liquid
<b>Water Solubility</b>	Soluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Hexylene glycol	0.14	
<b>Autoignition Temperature</b>	306 °C / 582.8 °F	
<b>Decomposition Temperature</b>	No data available	
<b>Viscosity</b>	36 mPa . s at 20 °C	
<b>Explosive Properties</b>		explosive air/vapour mixtures possible
<b>Oxidizing Properties</b>	No information available	
<b>Molecular Formula</b>	C6 H14 O2	
<b>Molecular Weight</b>	118.18	

## SECTION 10. STABILITY AND REACTIVITY

<b>Stability</b>	Hygroscopic.
<b>Hazardous Reactions</b>	No information available.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Incompatible products. Exposure to moist air or water. Keep away from open flames, hot surfaces and sources of ignition.
<b>Materials to avoid</b>	Acids. Strong oxidizing agents. Strong acids. Strong reducing agents. Acid anhydrides. Acid chlorides.
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ).

## SECTION 11. TOXICOLOGICAL INFORMATION

**Product Information** No acute toxicity information is available for this product

**SAFETY DATA SHEET****(+/-)-2-Methyl-2,4-pentanediol****(a) acute toxicity;**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hexylene glycol	LD50 = 3700 mg/kg ( Rat )	LD50 = 12300 mg/kg ( Rabbit )	LC50 > 310 mg/m <sup>3</sup> ( Rat ) 1 h

**(b) skin corrosion/irritation;** Category 2**(c) serious eye damage/irritation;** Category 2**(d) respiratory or skin sensitization;**Respiratory  
SkinBased on available data, the classification criteria are not met  
Based on available data, the classification criteria are not met**(e) germ cell mutagenicity;** Based on available data, the classification criteria are not met  
Not mutagenic in AMES Test**(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;** Based on available data, the classification criteria are not met**Other Adverse Effects** The toxicological properties have not been fully investigated.**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity effects** Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Hexylene glycol	LC50: 10500 - 11000 mg/L, 96h flow-through (Pimephales promelas) LC50: = 10000 mg/L, 96h static (Lepomis macrochirus) LC50: = 8690 mg/L, 96h flow-through (Pimephales promelas) LC50: = 10700 mg/L, 96h static (Pimephales promelas)	EC50: 2700 - 3700 mg/L, 48h (Daphnia magna)		EC50 = 3038 mg/L 5 min

**Persistence and Degradability** Expected to be biodegradable

**SAFETY DATA SHEET****(+/-)-2-Methyl-2,4-pentanediol****Persistence**

Persistence is unlikely.

**Bioaccumulative Potential**

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Hexylene glycol	0.14	No data available

**Mobility in soil**

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

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant**

This product does not contain any known or suspected substance

**Ozone Depletion Potential**

This product does not contain any known or suspected substance

**SECTION 13. DISPOSAL CONSIDERATIONS****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.

**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.

**SECTION 14. TRANSPORT INFORMATION****Road and Rail Transport**

Not Regulated

**IMDG/IMO**

Not regulated

**IATA**

Not regulated

**Special Precautions for User**

No special precautions required

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Hexylene glycol	-	-	X	X	203-489-0	X	X	X	X	X	X	KE-24702

**National Regulations**

(±)-2-Methyl-2,4-pentanediol

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Creation Date** 22-Sep-2009  
**Revision Date** 16-May-2024  
**Revision Summary** New emergency telephone response service provider.

**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.

**Legend**

**CAS** - Chemical Abstracts Service

**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

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

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

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

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

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**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

**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**