

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

Revision Date 22-Sep-2023 Revision Number 6

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

1.1. Product identifier

Product Description: <u>I-Menthone</u>

Cat No. : 203610000; 203610250; 203611000

Synonyms (-)-5-Methyl-2-(1-methylethyl)cyclohexanone

 CAS No
 14073-97-3

 EC No
 237-926-1

 Molecular Formula
 C10 H18 O

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

UK entity/business name

Fisher Scientific UK Bishop Meadow Road,

Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name

Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

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

Health hazards

I-Menthone Revision Date 22-Sep-2023

Skin Corrosion/Irritation
Skin Sensitization

Category 2 (H315) Category 1 Sub-category 1B (H317)

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

Warning

Hazard Statements

H315 - Causes skin irritation H317 - May cause an allergic skin reaction Combustible liquid

Precautionary Statements

P280 - Wear protective gloves/protective clothing

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

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P362 + P364 - Take off contaminated clothing and wash it before reuse

2.3. Other hazards

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

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
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	EEC No. 237-926-1	<=100	Skin Irrit. 2 (H315) Skin Sens. 1B (H317)

Full text of Hazard Statements: see section 16

I-Menthone Revision Date 22-Sep-2023

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

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 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. May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

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. 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

Combustible material. Flammable. Containers may explode when heated.

Hazardous Combustion Products

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

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

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary

Revision Date 22-Sep-2023

Page 4/12

I-Menthone

measures against static discharges.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition.

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. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition.

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

Technical Rules for Hazardous Substances (TRGS) 510 Class 10 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

I-Menthone

-Menthone Revision Date 22-Sep-2023

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Cyclohexanone, 5-methyl-2-(1-methylethyl)-,				DNEL = 7.4mg/kg bw/day
(2S-trans)- 14073-97-3 (<=100)				·

Component	Acute effects local	Acute effects	Chronic effects local	Chronic effects
	(Inhalation)	systemic (Inhalation)	(Inhalation)	systemic (Inhalation)
Cyclohexanone,				$DNEL = 26.1 \text{mg/m}^3$
5-methyl-2-(1-methylethyl)-,				-
(2S-trans)-				
14073-97-3 (<=100)				

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	, •
Cyclohexanone, 5-methyl-2-(1-methylethyl)- , (2S-trans)- 14073-97-3 (<=100)	PNEC = 0.0306mg/L	PNEC = 0.558mg/kg sediment dw	PNEC = 0.306mg/L	•	PNEC = 0.093mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Cyclohexanone, 5-methyl-2-(1-methylethyl)-	PNEC = 0.0031mg/L	PNEC = 0.0558mg/kg		PNEC = 246.67mg/kg food	
, (2S-trans)- 14073-97-3 (<=100)		sediment dw			

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 equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection Protective gloves

l PVC

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.

I-Menthone Revision Date 22-Sep-2023

Respiratory Protection No protective equipment is needed under normal use conditions.

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits Large scale/emergency use

are exceeded or if irritation or other symptoms are experienced

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 Liquid

Clear **Appearance** Odor Strong

Odor Threshold No data available Melting Point/Range No data available **Softening Point** No data available

207 - 210 °C / 404.6 - 410 °F **Boiling Point/Range** @ 760 mmHg Flammability (liquid) Combustible liquid On basis of test data Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Flash Point 72 °C / 161.6 °F Method - No information available

No data available **Autoignition Temperature Decomposition Temperature** No data available No information available рΗ Viscosity No data available Water Solubility Slightly soluble

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

log Pow Component Cyclohexanone, 3.05

5-methyl-2-(1-methylethyl)-, (2S-trans)-

Vapor Pressure 0.5 mmHg @ 20 °C

Density / Specific Gravity 0.890

Bulk Density Not applicable Liquid **Vapor Density** 5.31 (Air = 1.0)

Not applicable (liquid) Particle characteristics

9.2. Other information

C10 H18 O Molecular Formula **Molecular Weight** 154.25

Explosive Properties explosive air/vapour mixtures possible

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity None known, based on information available

10.2. Chemical stability

I-Menthone Revision Date 22-Sep-2023

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous PolymerizationNo information available.Hazardous ReactionsNone under normal processing.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Strong oxidizing agents. Strong reducing agents.

10.6. Hazardous decomposition products

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

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 Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met

Inhalation No data available

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclohexanone,	> 2000 mg/kg (Rat)	> 5 mL/kg (Rabbit)	=
5-methyl-2-(1-methylethyl)-, (2S-trans)-			

(b) skin corrosion/irritation; Category 2

Test method OECD Test Guideline 439

Test species in vitro
Observational endpoint Irritating to skin

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

Test method OECD Test Guideline 437

Test species in vitro

Observation end point No eye irritation

(d) respiratory or skin sensitization;

Respiratory No data available Skin Sub-category 1B

Component	Test method	Test species	Study result
Cyclohexanone,	OECD Test Guideline 429	mouse	Sensitization
5-methyl-2-(1-methylethyl)-, (2S-trans)-	Local Lymph Node Assay		
14073-97-3 (<=100)			

No information available

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Cyclohexanone,	OECD Test Guideline 474	mouse	negative

Page 7/12

I-Menthone Revision Date 22-Sep-2023

5-methyl-2-(1-methylethyl)-, (2S-trans)-		
14073-97-3 (<=100)		

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure: No data available

No data available (i) STOT-repeated exposure:

Target Organs None known.

No data available (j) aspiration hazard;

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

delayed

Symptoms / effects, both acute and Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

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 empty into drains. Harmful to aquatic organisms, may cause long-term adverse **Ecotoxicity effects**

effects in the aquatic environment. The product contains following substances which are

hazardous for the environment.

12.2. Persistence and degradability Not readily biodegradable

Persistence

based on information available, May persist.

Degradation in sewage treatment plant

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

water treatment plants.

May have some potential to bioaccumulate 12.3. Bioaccumulative potential

Component	log Pow	Bioconcentration factor (BCF)
Cyclohexanone,	3.05	No data available
5-methyl-2-(1-methylethyl)-, (2S-trans)-		

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. Is not likely mobile in the environment due its low

water solubility. Highly mobile in soils

I-Menthone Revision Date 22-Sep-2023

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

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.

European Waste Catalogue (EWC) According to the

According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

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 Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

ADR Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

IATA Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards No hazards identified

I-Menthone Revision Date 22-Sep-2023

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
Cyclohexanone,	14073-97-3	237-926-1	-	-	Х	Х	-	Х	Х
5-methyl-2-(1-methylethyl)-,									
(2S-trans)-									

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	Х	ACTIVE	X	1	Х	X	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) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	-	-	-

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
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	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 .

I-Menthone Revision Date 22-Sep-2023

National Regulations

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

See table for values **WGK Classification**

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Cyclohexanone,	WGK1	
5-methyl-2-(1-methylethyl)-,		
(2S-trans)-		

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

Legend

Inventory

Substances List

CAS - Chemical Abstracts Service

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

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

TWA - Time Weighted Average IARC - International Agency for Research on Cancer

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

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

ENCS - Japanese Existing and New Chemical Substances

Predicted No Effect Concentration (PNEC)

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

MARPOL - International Convention for the Prevention of Pollution from Shins

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data **Health Hazards** Calculation method **Environmental hazards** Calculation method

Training Advice

I-Menthone Revision Date 22-Sep-2023

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.

Revision Date 22-Sep-2023 Revision Summary Not applicable.

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