

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

SECTION 2: Hazards identification


2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids Category 2
H225 Highly flammable liquid and vapour.
Eye irritation Category 2
H319 Causes serious eye irritation.
Specific target organ toxicity - single exposure Category 3 - Central nervous system
H336 May cause drowsiness or dizziness.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:		
Signal word	:	Danger	
Hazard statements	:	H225 H319 H336 EUH066	Highly flammable liquid and vapour. Causes serious eye irritation. May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking.
Precautionary statements	:	P260 P280 P304 + P340 P305 + P351 + P338 P308 + P313	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ eye protection/ face protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention.

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

2.3. Other hazards

Vapours may form explosive mixtures with air.

SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
butanone; ethyl methyl ketone	78-93-3 606-002-00-3 201-159-0	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066	100 %	

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation:

If inhaled, remove to fresh air. Call a physician if irritation develops or persists.

Skin contact:

After contact with skin, wash immediately with plenty of water.

Eye contact:

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Ingestion:

Rinse mouth with water. Do NOT induce vomiting. Call a physician immediately.

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

No data available

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray
Foam
Carbon dioxide (CO₂)
Dry powder

Extinguishing media which shall not be used for safety reasons:

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Flammable.

Vapours may form explosive mixtures with air.

Vapours are heavier than air and may spread along floors.

Vapors may travel to areas away from work site before igniting/flashing back to vapor source.

Fire may cause evolution of:
carbon oxides (CO, CO₂).

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Remove all sources of ignition. Wear personal protective equipment. Unprotected persons must be kept away. Ensure adequate ventilation.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material.
Pick for disposal in tightly closed containers

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Wear personal protective equipment. Use only in well-ventilated areas.

Advice on protection against fire and explosion:

Use only in explosion-proof areas. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. The heavy vapours can overcome a considerable distance up to the source of ignition.

Hygiene measures:

Take off all contaminated clothing immediately. Remove and wash contaminated clothing before re-use. Keep working clothes separately. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:

Store in original container. Keep in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
butanone; ethyl methyl ketone	EH40 WEL STEL	899 mg/m ³ 300 ppm		
butanone; ethyl methyl ketone	EH40 WEL TWA	600 mg/m ³ 200 ppm		
butanone; ethyl methyl ketone	EH40 WEL SKIN_DES			Can be absorbed through the skin.
butanone; ethyl methyl ketone	EH40 WEL			Listed
butanone; ethyl methyl ketone	EU ELV STEL	900 mg/m ³ 300 ppm		Indicative
butanone; ethyl methyl ketone	EU ELV TWA	600 mg/m ³ 200 ppm		Indicative

STEL - Short term exposure limit

TWA - Time weighted average

SKIN_DES - Skin designation:

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
butanone; ethyl methyl	Workers /		600 mg/m ³	Inhalation	

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

ketone	Long-term systemic effects				
butanone; ethyl methyl ketone	Workers / Long-term systemic effects		1161mg/kg bw/d	Skin contact	
butanone; ethyl methyl ketone	Consumers / Long-term systemic effects		106 mg/m3	Inhalation	
butanone; ethyl methyl ketone	Consumers / Long-term systemic effects		412mg/kg bw/d	Skin contact	
butanone; ethyl methyl ketone	Consumers / Long-term systemic effects		31mg/kg bw/d	Ingestion	

Component	Environmental compartment / Value	Remarks
butanone; ethyl methyl ketone	Fresh water: 55,8 mg/l	
butanone; ethyl methyl ketone	Marine water: 55,8 mg/l	
butanone; ethyl methyl ketone	Sewage treatment plant: 709 mg/l	
butanone; ethyl methyl ketone	Fresh water sediment: 284,7 mg/kg dw	
butanone; ethyl methyl ketone	Marine sediment: 284,7 mg/kg dw	
butanone; ethyl methyl ketone	Soil: 22,5 mg/kg dw	

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Do not breathe vapours or spray mist.

Engineering measures

Use with local exhaust ventilation.

Use explosion-proof equipment.

Personal protective equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Hand protection:

Glove material: butyl-rubber

Break through time: > 240 min

Glove thickness: 0,7 mm

Butoject® 898

Gloves must be inspected prior to use.

Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer´s directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

Skin and body protection:

Protective suit

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: liquid
Colour	: colourless
Odour	: solvent-like
molecular weight	: 72,11 g/mol
Melting point/range	: -87 °C
Boiling point/boiling range	: 79 - 81 °C
Flammability	: Not applicable
Upper explosion limit	: 11,5 %(V)
Lower explosion limit	: 1,8 %(V)
Flash point	: -4 °C Method: closed cup
Auto-ignition temperature	: 515 °C
Decomposition temperature	: No decomposition if used as directed.
pH	: No data available
Viscosity, kinematic	: No data available
Water solubility	: ca. 290 g/l at 20 °C
Partition coefficient: n-octanol/water	: log Pow 0,26

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Vapour pressure	:	101 hPa at 20 °C
Density	:	ca. 0,805 g/cm ³ at 20 °C
Relative vapour density	:	No data available

9.2 Other Information

Evaporation rate	:	No data available
Viscosity, dynamic	:	0,423 mPa.s at 15 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Keep away from heat and sources of ignition.

10.5. Incompatible materials

Oxidizing agents

10.6. Hazardous decomposition products

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Carbon oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50

Species: Rat

Value: 2.193 mg/kg

Method: OECD 423

Test substance: REACH dossier "read-across"

Acute dermal toxicity:

LD50

Species: Rabbit

Value: > 8.050 mg/kg

Method: OECD Test Guideline 402

Acute inhalation toxicity:

No data available

Skin irritation:

Species: Rabbit

Result: non-irritant

Method: OECD Test Guideline 404

Test substance: REACH dossier "read-across"

Eye irritation:

Species: Rabbit

Result: irritating

Method: OECD Test Guideline 405

Respiratory or skin sensitisation:

Buehler Test

Species: Guinea pig

Result: non-sensitizing

Method: OECD Test Guideline 406

Repeated dose toxicity:

Species: Rat

Application Route: Inhalation

Exposure time: 90 d

NOAEL: 5014 ppm

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Method: OECD Test Guideline 413
Note: Subchronic toxicity

Carcinogenicity:

Species: not specified
Note: No data available

Germ cell mutagenicity:

Test Method: In vitro mammalian cell gene mutation test
Cell type: Mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 476

Test Method: Ames test
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 471

Test Method: Micronucleus test
Species: Mouse
Method: OECD Test Guideline 474
Result: negative

Reproductive toxicity:

Species: not specified
Remarks: No data available
Method: OECD Test Guideline 414
Species: Rat
Route of Application: Inhalation
General Toxicity Maternal: NOAEC: 1.002 ppm
Teratogenicity: NOAEC: 1.002 ppm

Aspiration hazard:

Not classified due to data which are conclusive although insufficient for classification.

11.2. Information on other hazards

Endocrine disrupting properties
No data available

Other information:

Solvent removes skin oil from the skin.
Solvent vapours have a narcotic effect if inhaled in high concentrations.

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Irritating to respiratory system.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

LC50

static test

Species: Pimephales promelas (fathead minnow)

Value: 2.993 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to aquatic plants:

EC50

Growth rate

Species: Selenastrum capricornutum (green algae)

Value: 1.972 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to aquatic invertebrates:

EC50

Immobilization

Species: Daphnia magna (Water flea)

Value: 308 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

EC50

static test

Species: Daphnia magna (Water flea)

Value: 68 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

12.2. Persistence and degradability

Biodegradability:

Biodegradation: 98 %

Exposure time: 28 d

Result: rapidly biodegradable

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Method: OECD 301 D

12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number

ADR/RID:1193

IMDG:1193

IATA:1193

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

14.2 UN proper shipping name

ADR/RID: ETHYL METHYL KETONE

IMDG: ETHYL METHYL KETONE

IATA: Ethyl methyl ketone

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

Marine pollutant: no

14.6 Special precautions for user

No data available

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC Listed in Regulation : P5c: FLAMMABLE LIQUIDS	Quantity: 5.000.000 kg Quantity: 50.000.000 kg	
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).

Poison Control Center

Country	Phone Number
---------	--------------

Country	Phone Number
---------	--------------

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Austria	+4314064343
Belgium	070 245245
Bulgaria	(+35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166
Italy	0382 24444
Germany	Berlin : 030/19240
	Bonn : 0228/19240
	Erfurt : 0361/730730
	Freiburg : 0761/19240
	Göttingen : 0551/19240
	Homburg : 06841/19240
	Mainz : 06131/19240
Munich : 089/19240	
Latvia	+37167042473

Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Gifftinformation); +46104566786
Switzerland	145
United Kingdom	(+44) 844 892 0111

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)
On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

butanone; ethyl methyl ketone	:	H225	Highly flammable liquid and vapour.
		H319	Causes serious eye irritation.
		H336	May cause drowsiness or dizziness.
		EUH066	Repeated exposure may cause skin dryness or cracking.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Honeywell
Riedel-de Haën™

2-Butanone

33407-2.5L

Version 1.7

Revision Date 17.12.2022

Abbreviations:

EC European Community

CAS Chemical Abstracts Service

DNEL Derived no effect level

PNEC Predicted no effect level

vPvB Very persistent and very bioaccumulative substance

PBT Persistent, bioaccumulative und toxic substance

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. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.
