

2-Heptanone

537683-100ML

Version 2.1

Revision Date 30.08.2018

Supersedes 1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : 2-Heptanone

SDS-number : 000000021046

Type of product : Substance

Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

Chemical name : heptan-2-one; methyl amyl ketone

Index-No. : 606-024-00-3

REACH Registration Number : 01-2119902391-49

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Laboratory chemicals

Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company	: Honeywell Specialty Chemicals Seelze GmbH Wunstorfer Straße 40 30926 Seelze Germany	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
Telephone	: (49) 5137-999 0	
Telefax	: (49) 5137-999 123	
For further information, please contact:	: PMTEU Product Stewardship: SafetyDataSheet@Honeywell.com	

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
+1-303-389-1414 (Medical)

Country based Poison Control Center : see chapter 15.1

SECTION 2: Hazards identification

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2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable liquids Category 3
H226 Flammable liquid and vapour.
Acute toxicity Category 4 - Oral
H302 Harmful if swallowed.
Acute toxicity Category 4 - Inhalation
H332 Harmful if inhaled.
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

: Warning

Hazard statements

: H226
H302 + H332
H336

Flammable liquid and vapour.
Harmful if swallowed or if inhaled
May cause drowsiness or dizziness.

Precautionary statements

: P210
P280
P284
P301 + P330 + P331
P304 + P340
P308 + P313
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.
Wear respiratory protection.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/ attention.

2.3. Other hazards

Vapours may form explosive mixtures with air. Repeated exposure may cause skin dryness or cracking.
Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients

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3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
heptan-2-one; methyl amyl ketone	110-43-0 606-024-00-3 01-2119902391-49 203-767-1	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 STOT SE 3; H336	>= 90 % - <= 100 %	1*

1* - For specific concentration limits see Annexes of 1272/2008

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:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

Skin contact:

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician immediately.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Remove contact lenses. Call a physician immediately.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is fully conscious, give a cupful of water. Call a physician immediately.

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

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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
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry powder

Extinguishing media which shall not be used for safety reasons:

High volume water jet

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.
In case of fire hazardous decomposition products may be produced such as:
Carbon dioxide (CO₂)
Carbon monoxide

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
Do not use a solid water stream as it may scatter and spread fire. 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

Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Do not swallow. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

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Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.

6.3. Methods and materials for containment and cleaning up

Ventilate the area.

No sparking tools should be used.

Use explosion-proof equipment.

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

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. Keep container tightly closed. Wash thoroughly after handling. Do not smoke. Do not swallow. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion:

Keep away from fire, sparks and heated surfaces. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before beginning transfer operations. Use explosion-proof equipment. Keep product and empty container away from heat and sources of ignition. No sparking tools should be used. No smoking.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately. Do not swallow. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:

Store in area designed for storage of flammable liquids. Protect from physical damage. Keep containers tightly closed in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from heat and sources of ignition. Keep away from direct sunlight. Store away from incompatible substances. Container hazardous when empty. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

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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
heptan-2-one; methyl amyl ketone	EH40 WEL TWA	237 mg/m3 50 ppm		
heptan-2-one; methyl amyl ketone	EH40 WEL SKIN_DES			Can be absorbed through the skin.
heptan-2-one; methyl amyl ketone	EH40 WEL STEL	475 mg/m3 100 ppm		
heptan-2-one; methyl amyl ketone	EU ELV STEL	475 mg/m3 100 ppm		Indicative
heptan-2-one; methyl amyl ketone	EU ELV TWA	238 mg/m3 50 ppm		Indicative
heptan-2-one; methyl amyl ketone	EU ELV SKIN_DES			Can be absorbed through the skin.

TWA - Time weighted average

SKIN_DES - Skin designation:

STEL - Short term exposure limit

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
heptan-2-one; methyl amyl ketone	Workers / Long-term systemic effects		394,25 mg/m3	Inhalation	
heptan-2-one; methyl amyl ketone	Workers / Acute systemic effects		1516 mg/m3	Inhalation	
heptan-2-one; methyl amyl ketone	Workers / Long-term systemic effects		54,27 mg/kg	Skin contact	
heptan-2-one; methyl amyl	Consumers /		84,31	Inhalation	

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ketone	Long-term systemic effects		mg/m ³		
heptan-2-one; methyl amyl ketone	Consumers / Long-term systemic effects		23,32 mg/kg	Skin contact	
heptan-2-one; methyl amyl ketone	Consumers / Long-term systemic effects		23,32 mg/kg	Ingestion	

Component	Environmental compartment / Value	Remarks
heptan-2-one; methyl amyl ketone	Fresh water: 0,098 mg/l	
heptan-2-one; methyl amyl ketone	Intermittent use/release: 0,982 mg/l	
heptan-2-one; methyl amyl ketone	Fresh water sediment: 1,89 mg/kg	
heptan-2-one; methyl amyl ketone	Marine water: 0,01 mg/l	
heptan-2-one; methyl amyl ketone	Marine sediment: 0,189 mg/kg	
heptan-2-one; methyl amyl ketone	Soil: 0,321 mg/kg	
heptan-2-one; methyl amyl ketone	Sewage treatment plant: 12,5 mg/l	

8.2. Exposure controls

Occupational exposure controls

Ensure that eyewash stations and safety showers are close to the workstation location.
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.

Engineering measures

Use with local exhaust ventilation.

Prevent vapour buildup by providing adequate ventilation during and after use.

Personal protective equipment

Respiratory protection:

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

Recommended Filter type:

A: Organic vapour type

Hand protection:

Glove material: butyl-rubber

Break through time: 60 min

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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:

Wear as appropriate:

Solvent-resistant apron and boots

Flame retardant antistatic protective clothing.

If splashes are likely to occur, wear:

Protective suit

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

Form	: liquid
Colour	: clear colourless
Odour	: fruity
molecular weight	: 114,19 g/mol
Melting point/range	: -35 °C
Boiling point/boiling range	: 152 °C
Flash point	: 39 °C

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	closed cup
Ignition temperature	: 393 °C
Auto-ignition temperature	: The substance or mixture is not classified as self heating.
Lower explosion limit	: 1,11 %(V)
Upper explosion limit	: 7,9 %(V)
Vapour pressure	: 2,85 hPa at 20 °C
Density	: 0,81 g/cm ³ at 20 °C
pH	: no data available
Water solubility	: 4.280 mg/l at 25 °C
Partition coefficient: n-octanol/water	: log Pow 2,26 at: 30 °C Method: 92/69/EEC, A.8
Relative vapour density	: 3,94 (Air = 1.0)

9.2 Other Information

no additional data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

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10.4. Conditions to avoid

Heat, flames and sparks.
Keep away from direct sunlight.
Vapours may form explosive mixtures with air.

10.5. Incompatible materials

Strong acids and strong bases
Strong oxidizing agents
Strong reducing agents
Plastic materials can be attacked.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50

Species: Rat

Value: 1.600 mg/kg

Acute dermal toxicity:

LD50

Species: Rat

Value: > 2.000 mg/kg

Method: OECD Test Guideline 402

No deaths

Acute inhalation toxicity:

LC50

Species: Rat

Value: > 16,7 mg/l

Exposure time: 4 h

Method: OECD Test Guideline 403

Skin irritation:

Species: Rabbit

Result: Moderate skin irritation

Method: OECD Test Guideline 404

Eye irritation:

Species: Rabbit

Result: slight irritation

Method: OECD Test Guideline 405

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Respiratory or skin sensitisation:

Mouse local lymph node assay

Route of exposure: Dermal

Species: Mouse

Result: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 429

Repeated dose toxicity:

Species: Rat

Application Route: Inhalation

Exposure time: 10 Months

NOAEL: 4,79 mg/l

Species: Rat

Application Route: Oral

Exposure time: 13 Weeks

NOAEL 20 mg/kg

LOAEL: 100 mg/kg

Germ cell mutagenicity:

Test Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)

Metabolic activation: with and without metabolic activation

Result: negative

Method: OECD Test Guideline 471

Test Method: In vitro gene mutation study in mammalian cells

Cell type: Chinese Hamster Ovary Cells

Metabolic activation: with and without metabolic activation

Result: negative

Method: Chromosome aberration test in vitro

Aspiration hazard:

no data available

Other information:

no data available

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

LC50

flow-through test

Species: Pimephales promelas (fathead minnow)

Value: 131 mg/l

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Exposure time: 96 h

Toxicity to aquatic plants:

NOEC

Growth inhibition

Species: *Pseudokirchneriella subcapitata* (green algae)

Value: 42,7 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC50

Growth inhibition

Species: *Pseudokirchneriella subcapitata* (green algae)

Value: 98,2 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to Microorganisms:

EC50

Growth inhibition

Species: *Pseudomonas putida*

Value: 690 mg/l

Exposure time: 16 h

NOEC

Growth inhibition

Species: *Pseudomonas putida*

Value: 12,5 mg/l

Exposure time: 16 h

Toxicity to aquatic invertebrates:

EC50

semi-static test

Species: *Daphnia magna* (Water flea)

Value: > 90,1 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

12.2. Persistence and degradability

Biodegradability:

aerobic

Biodegradation: 69 %

Exposure time: 28 d

Result: Readily biodegradable

Method: OECD Test Guideline 310

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12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

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

ADR/RID

UN Number	:	1110
Description of the goods	:	n-AMYL METHYL KETONE
Class	:	3
Packaging group	:	III
Classification Code	:	F1
Hazard Identification	:	30
Number	:	
ADR/RID-Labels	:	3
Environmentally hazardous	:	no

IATA

UN Number	:	1110
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Description of the goods : n-Amyl methyl ketone
Class : 3
Packaging group : III
Hazard Labels : 3

IMDG

UN Number : 1110
Description of the goods : n-AMYL METHYL KETONE
Class : 3
Packaging group : III
Hazard Labels : 3
EmS Number : F-E, S-D
Marine pollutant : no

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 SEVESO III Listed in Regulation : P5c: FLAMMABLE LIQUIDS	Amount 1: 5.000.000 kg Amount 2: 50.000.000 kg	

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+)35929154233
Croatia	(+3851)23-48-342
Cyprus	no data available
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	no data available
Hungary	(+36-80)201-199

Country	Phone Number
Liechtenstein	no data available
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	no data available
Netherlands	030-2748888
Norway	22591300
Poland	no data available
Portugal	808250143
Romania	no data available
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	no data available
Spain	+34915620420

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Iceland	5432222	Sweden	112 (begär Giftinformation);+46104566786
Ireland	+353(1)8092166	Switzerland	145
Italy	+39 0649906140	United Kingdom	no data available
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		

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act
On the inventory, or in compliance with the inventory

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. The Toxic Substances and Hazardous and Nuclear Waste Control Act
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances
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

15.2 Chemical safety assessment

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A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

heptan-2-one; methyl amyl	:	H226	Flammable liquid and vapour.
ketone		H302 + H332	Harmful if swallowed or if inhaled
		H336	May cause drowsiness or dizziness.

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.

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 and 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.

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