

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

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.
Aspiration hazard Category 1
H304 May be fatal if swallowed and enters airways.
Skin irritation Category 2
H315 Causes skin irritation.
Specific target organ toxicity - single exposure Category 3 - Central nervous system
H336 May cause drowsiness or dizziness.
Short-term (acute) aquatic hazard Category 1
H400 Very toxic to aquatic life.
Long-term (chronic) aquatic hazard Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 Wear protective gloves/ eye protection/ face protection. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

P304 + P340

NOT induce vomiting.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

2.3. Other hazards

Take measures to prevent the build up of electrostatic charge. Results of PBT and vPvB assessment, see chapter 12.5.

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
2,2,4-trimethylpentane	540-84-1 601-009-00-8 208-759-1	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Corr. 2; H315 STOT SE 3; H336 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	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.

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Inhalation:

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

Skin contact:

Wash off immediately with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists.

Eye contact:

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

Ingestion:

When swallowed, allow water to be drunk. 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.

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

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:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Vapours may form explosive mixtures with air.
Fire may cause evolution of:
Carbon oxides

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

Ensure adequate ventilation. Evacuate personnel to safe areas. Wear personal protective equipment. Unprotected persons must be kept away.

6.2. Environmental precautions

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

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

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Exhaust ventilation at the object is necessary.

Advice on protection against fire and explosion:

Use only in explosion-proof areas. Take precautionary measures against static discharges. Keep away from heat and sources of ignition. The heavy vapours can overcome a considerable distance up to the source of ignition. Vapours may form explosive mixture with air.

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.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
2,2,4-trimethylpentane	Workers /		2035	Inhalation	

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

	Long-term systemic effects		mg/m ³		
2,2,4-trimethylpentane	Workers / Long-term systemic effects		773mg/kg bw/d	Skin contact	
2,2,4-trimethylpentane	Consumers / Long-term systemic effects		608 mg/m ³	Inhalation	
2,2,4-trimethylpentane	Consumers / Long-term systemic effects		699mg/kg bw/d	Skin contact	
2,2,4-trimethylpentane	Consumers / Long-term systemic effects		699mg/kg bw/d	Ingestion	

No PNEC data available.

2,2,4-trimethylpentane	:	No data available
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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

Local exhaust

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: Nitrile rubber

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Break through time: > 480 min

Glove thickness: 0,4 mm

Camatril® 730

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

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	:	characteristic
molecular weight	:	114,23 g/mol
Melting point/range	:	-107 °C
Boiling point/boiling range	:	99 °C at 1.013 hPa

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Upper explosion limit	:	6 %(V)
Lower explosion limit	:	1,1 %(V)
Flash point	:	-12 °C
Auto-ignition temperature	:	410 °C
Decomposition temperature	:	No decomposition if used as directed.
pH	:	No data available
pH	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, kinematic	:	No data available
Water solubility	:	0,002 g/l at 25 °C
Partition coefficient: n- octanol/water	:	log Pow 4,08
Vapour pressure	:	55 hPa at 21 °C
Vapour pressure	:	117 hPa at 38 °C
Density	:	0,69 g/cm ³ at 20 °C
Relative vapour density	:	No data available
Relative vapour density	:	No data available

9.2 Other Information

Oxidizing properties : The substance or mixture is not classified as oxidizing.

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Evaporation rate : No data available

Evaporation rate : No data available

Viscosity, dynamic : No data available

Viscosity, dynamic : No data available

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

Heat, flames and sparks.

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Carbon oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:
LD50

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Species: Rat
Value: > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity:

LD50
Species: Rabbit
Value: > 2.000 mg/kg
Method: OECD Test Guideline 402

Acute inhalation toxicity:

LC50
Species: Rat
Value: > 33,5 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403

Skin irritation:

Species: Rabbit
Result: irritating
Method: OECD Test Guideline 404

Eye irritation:

Species: Rabbit
Result: slight irritation
Method: OECD Test Guideline 405

According to the classification criteria of the European Union, the product is not considered as being an eye irritant.

Respiratory or skin sensitisation:

Species: Guinea pig
Result: non-sensitizing
Method: OECD Test Guideline 406

Repeated dose toxicity:

Species: Rat
Application Route: inhalation (vapour)
NOAEC: 6646
Test substance: REACH dossier "read-across"
Method: OECD 413
Note: Subchronic toxicity

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Carcinogenicity:

Species: not specified

Note: No data available

Germ cell mutagenicity:

Test Method: Ames test

Metabolic activation: with and without metabolic activation

Result: negative

Method: OECD Test Guideline 471

Test Method: In vitro gene mutation study in mammalian cells

Metabolic activation: with and without metabolic activation

Result: negative

Method: OECD Test Guideline 476

Test Method: Unscheduled DNA synthesis

Species: Rat

Method: OECD Test Guideline 486

Result: negative

Reproductive toxicity:

Method: OECD Test Guideline 416

Species: Rat

Route of Application: Inhalation

General Toxicity F1: NOAEL: 3.000 ppm

Remarks: REACH dossier "read-across"

Method: OECD Test Guideline 414

Species: Rabbit

Route of Application: inhalation (vapour)

General Toxicity Maternal: NOAEC: > 7.000 ppm

Developmental Toxicity: NOAEC: > 7.000 ppm

Remarks: REACH dossier "read-across"

Aspiration hazard:

May be fatal if swallowed and enters airways.

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:

No data available

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

EC50

semi-static test

Species: *Oncorhynchus mykiss* (rainbow trout)

Value: 18,4 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Test substance: REACH dossier "read-across"

Toxicity to aquatic plants:

EL50

Species: *Selenastrum capricornutum* (green algae)

Value: 2.943 mg/l

Exposure time: 72 h

Toxicity to aquatic invertebrates:

EC50

static test

Species: *Daphnia magna* (Water flea)

Value: 0,4 mg/l

Exposure time: 48 h

Test substance: REACH dossier "read-across"

12.2. Persistence and degradability

Biodegradability:

Biodegradation: > 60 %

Exposure time: 14 d

Result: Inherently biodegradable.

Method: OECD Test Guideline 301F

Test substance: REACH dossier "read-across"

12.3. Bioaccumulative potential

Can accumulate in aquatic organisms.

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

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:1262

IMDG:1262

IATA:1262

14.2 UN proper shipping name

ADR/RID:OCTANES

IMDG:OCTANES

IATA:Octanes

14.3 Transport hazard class(es)

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: yes

Marine pollutant: yes

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	
Directive 2012/18/EC Listed in Regulation : E1: Hazardous to the aquatic environment	Quantity: 100.000 kg Quantity: 200.000 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
Austria	+4314064343
Belgium	070 245245

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

Bulgaria	(+359)29154233
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

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 Giftinformation);+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

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

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

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

2,2,4-trimethylpentane	:	H225	Highly flammable liquid and vapour.
		H304	May be fatal if swallowed and enters airways.
		H315	Causes skin irritation.
		H336	May cause drowsiness or dizziness.
		H400	Very toxic to aquatic life.
		H410	Very toxic to aquatic life with long lasting effects.

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:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Honeywell
Riedel-de Haën™

2,2,4-Trimethylpentane

32291-2.5L

Version 1.4

Revision Date 17.12.2022

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.

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