



Rustins Cellulose Thinners

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2015/830
Issue date: 3/3/2015 Revision date: 6/17/2022 Supersedes version of: 6/4/2022 Version: 12.0

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

1.1. Product identifier

Product form	: Mixture
Trade name	: Rustins Cellulose Thinners
UFI	: PM34-WEQX-300R-5UXA
Product code	: CELT
Type of product	: Solvents
Synonyms	: CELLULOSE THINNERS
Product group	: End product

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

1.2.1. Relevant identified uses

Intended for general public	
Main use category	: Professional use, Consumer use, Industrial use
Industrial/Professional use spec	: Wide dispersive use
Use of the substance/mixture	: Solvents
Function or use category	: Solvents

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

Rustins Ltd
Waterloo road
NW2 7TX London
United Kingdom
T +44 (0)208 450 4666 - F +44 (0)208 452 2008
rustins@rustins.co.uk - rustins.ltd

Distributor

Excellence Ltd
43 Grange Parade,
Unit 43 Baldoyle Industrial Estate,
D13 Y860 Dublin
Ireland
T 00353 (0)1 8323300 - F 00353 (0)1 8323584
Orders@excellence.ie - www.excellence.ie

1.4. Emergency telephone number

Emergency number	: +44 (0)208 450 4666 OFFICE HOURS ONLY MON. - FRI. 08:00 - 16:30
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Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 2	H225
Acute toxicity (inhalation:dust,mist) Category 4	H332
Serious eye damage/eye irritation, Category 1	H318

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Carcinogenicity, Category 2 H351
Specific target organ toxicity – Single exposure, Category 3, Narcosis H336
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. Suspected of causing cancer. May cause drowsiness or dizziness. Harmful if inhaled. Causes serious eye damage.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS02

GHS07

GHS08

Signal word (CLP)

: Danger

Contains

: butanone; ethyl methyl ketone, BUTAN-1-OL, 4-methylpentan-2-one; isobutyl methyl ketone

Hazard statements (CLP)

: H225 - Highly flammable liquid and vapour.

H318 - Causes serious eye damage.

H332 - Harmful if inhaled.

H336 - May cause drowsiness or dizziness.

H351 - Suspected of causing cancer (if swallowed, if inhaled).

Precautionary statements (CLP)

: P102 - Keep out of reach of children.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P241 - Use explosion-proof electrical, lighting equipment.

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 - Wear protective clothing, eye protection, face protection.

P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water or shower.

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.

P312 - Call a POISON CENTER if you feel unwell.

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

P501 - Dispose of contents to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
4-methylpentan-2-one; isobutyl methyl ketone substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 108-10-1 EC-No.: 203-550-1 EC Index-No.: 606-004-00-4 REACH-no: 01-2119473980-30	≥ 40 – < 45	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H336

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
butanone; ethyl methyl ketone substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 78-93-3 EC-No.: 201-159-0 EC Index-No.: 606-002-00-3 REACH-no: 01-2119457290-43	≥ 40 – < 45	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
BUTAN-1-OL	CAS-No.: 71-36-3 EC-No.: 200-751-6 EC Index-No.: 603-004-00-6 REACH-no: 01-2119484630-38	≥ 1 – < 5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336 STOT SE 3, H335

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after eye contact	: Serious damage to eyes.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable liquid and vapour.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Rustins Cellulose Thinners

Ireland - Occupational Exposure Limits

Local name	Butan-1-ol [n-Butyl alcohol]
OEL TWA [2]	20 ppm
Regulatory reference	Chemical Agents Code of Practice 2021

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Ireland - Biological limit values	
Local name	Butan-2-one
BLV	70 µmol/l Parameter: butan-2- one - Medium: urine - Sampling time: Post shift
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
United Kingdom - Occupational Exposure Limits	
Local name	Butan-1-ol
WEL STEL (OEL STEL)	154 mg/m³
WEL STEL (OEL STEL) [ppm]	50 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
United Kingdom - Biological limit values	
Local name	Butan-2-one (methyl ethyl ketone)
BMGV	70 µmol/l Parameter: butan-2-one - Medium: urine - Sampling time: Post shift
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
butanone; ethyl methyl ketone (78-93-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Butanone
IOEL TWA [ppm]	200 ppm
IOEL STEL	900 mg/m³
IOEL STEL [ppm]	300 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Austria - Occupational Exposure Limits	
Local name	Butanon (Ethylmethylketon; Methylethylketon)
MAK (OEL TWA)	295 mg/m³
MAK (OEL TWA) [ppm]	100 ppm
MAK (OEL STEL)	590 mg/m³ (4x 30(Miw) min)
MAK (OEL STEL) [ppm]	200 ppm (4x 30(Miw) min)
Remark	H
Regulatory reference	BGBI. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	2-Butanone # 2-Butanon
OEL TWA	600 mg/m³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m³
OEL STEL [ppm]	300 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Bulgaria - Occupational Exposure Limits	
Local name	Метилетилкетон (бутанон)

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butanone; ethyl methyl ketone (78-93-3)	
OEL TWA	590 mg/m³
OEL STEL	885 mg/m³
Remark	• (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
Local name	Butanon; etil-metil-keton
GVI (OEL TWA) [1]	600 mg/m³
GVI (OEL TWA) [2]	200 ppm
KGVI (OEL STEL)	900 mg/m³
KGVI (OEL STEL) [ppm]	300 ppm
Remark	Direktiva: 2000/39/EZ
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
Cyprus - Occupational Exposure Limits	
Local name	Βουτανόνη
OEL TWA	600 mg/m³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m³
OEL STEL [ppm]	300 ppm
Regulatory reference	Κανονισμοί του 2007 (Κ.Δ.Π. 295/2007)
Czech Republic - Occupational Exposure Limits	
Local name	2-Butanon (Methylethylketon)
PEL (OEL TWA)	600 mg/m³
PEL (OEL TWA) [ppm]	200 ppm
NPK-P (OEL C)	900 mg/m³
NPK-P (OEL C) [ppm]	301 ppm
Remark	I - dráždí sliznice (oči, dýchací cesty), respektive kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Butanon (Ethylmethylketon; MEK; Methylethylketon)
OEL TWA [1]	145 mg/m³
OEL TWA [2]	50 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
Regulatory reference	BEK nr 2203 af 29. november 2021
Estonia - Occupational Exposure Limits	
Local name	2-butanoon
OEL TWA	600 mg/m³

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butanone; ethyl methyl ketone (78-93-3)	
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 15.05.2021, 1)
Finland - Occupational Exposure Limits	
Local name	2-Butanoni
HTP (OEL TWA) [1]	60 mg/m ³
HTP (OEL TWA) [2]	20 ppm
HTP (OEL STEL)	300 mg/m ³
HTP (OEL STEL) [ppm]	100 ppm
Remark	lho
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
France - Occupational Exposure Limits	
Local name	Méthyléthylcétone, 2-Butanone (Butanone)
VME (OEL TWA)	600 mg/m ³
VME (OEL TWA) [ppm]	200 ppm
VLE (OEL C/STEL)	900 mg/m ³
VLE (OEL C/STEL) [ppm]	300 ppm
Remark	Valeurs réglementaires contraignantes; risque de pénétration percutanée
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	600 mg/m ³
AGW (OEL TWA) [2]	200 ppm
Peak exposure limitation factor	1(l)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); H - hautresorptiv; Y - Ein Risiko der Fruchtbeschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900
Gibraltar - Occupational Exposure Limits	
Local name	Butanone
OEL TWA	600 mg/m ³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Μεθυλοαιθυλο-κετόνη

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butanone; ethyl methyl ketone (78-93-3)	
OEL TWA	600 mg/m ³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	METIL-ETIL-KETON
AK (OEL TWA)	600 mg/m ³
CK (OEL STEL)	900 mg/m ³
Remark	b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármát); EU1 (2000/39/EK irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Methyl ethyl ketone (MEK)
OEL TWA [1]	600 mg/m ³
OEL TWA [2]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Remark	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Butan-2-one
BLV	70 µmol/l Parameter: butan-2- one - Medium: urine - Sampling time: Post shift
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Italy - Occupational Exposure Limits	
Local name	Butanone
OEL TWA	600 mg/m ³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	2-Butanons (metiletilketons, etilmetilketons)
OEL TWA	200 mg/m ³
OEL TWA [ppm]	67 ppm
OEL STEL	900 mg/m ³

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butanone; ethyl methyl ketone (78-93-3)	
OEL STEL [ppm]	300 ppm
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325
Lithuania - Occupational Exposure Limits	
Local name	Butanonas (metiletilketonas)
IPRV (OEL TWA)	600 mg/m ³
IPRV (OEL TWA) [ppm]	200 ppm
TPRV (OEL STEL)	900 mg/m ³
TPRV (OEL STEL) [ppm]	300 ppm
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg - Occupational Exposure Limits	
Local name	Butanone
OEL TWA	600 mg/m ³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	Butanone
OEL TWA	600 mg/m ³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)
Netherlands - Occupational Exposure Limits	
Local name	2-Butanon
TGG-8u (OEL TWA)	590 mg/m ³
TGG-15min (OEL STEL)	900 mg/m ³
Remark	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een H-aanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
Regulatory reference	Arbeidsomstandighedenregeling 2022
Poland - Occupational Exposure Limits	
Local name	Butan-2-on
NDS (OEL TWA)	450 mg/m ³
NDSch (OEL STEL)	900 mg/m ³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2018 poz. 1286

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butanone; ethyl methyl ketone (78-93-3)	
Portugal - Occupational Exposure Limits	
Local name	Metiletilcetona (MEK) (2-Butanona)
OEL TWA [ppm]	200 ppm
OEL STEL [ppm]	300 ppm
Remark	IBE (Índice biológico de exposição)
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	2 Butanonă/Etil metil cetonă/Butanonă
OEL TWA	600 mg/m³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m³
OEL STEL [ppm]	300 ppm
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Romania - Biological limit values	
Local name	Metiletilcetonă
BLV	2 mg/l Indicator biologic: Metiletilcetonă - Material biologic: urină - Momentul recoltării: sfârșit de schimb
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 584/2018)
Serbia - Occupational Exposure Limits	
Local name	бутанон; метил-етил-кетон
OEL TWA	600 mg/m³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m³
OEL STEL [ppm]	300 ppm
Remark	EY* – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2000/39/EЗ (прва листа)
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)
Slovakia - Occupational Exposure Limits	
Local name	Butanón (etylmetylketón)
NPHV (OEL TWA) [1]	600 mg/m³
NPHV (OEL TWA) [2]	200 ppm
NPHV (OEL STEL)	900 mg/m³
NPHV (OEL STEL) [ppm]	300 ppm
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)
Slovenia - Occupational Exposure Limits	
Local name	butanon (etilmetilketon)
OEL TWA	600 mg/m³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m³

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butanone; ethyl methyl ketone (78-93-3)	
OEL STEL [ppm]	300 ppm
Remark	K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), BAT (Biološka mejna vrednost), EU
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Metiletilcetona (Butanona)
VLA-ED (OEL TWA) [1]	600 mg/m³
VLA-ED (OEL TWA) [2]	200 ppm
VLA-EC (OEL STEL)	900 mg/m³
VLA-EC (OEL STEL) [ppm]	300 ppm
Remark	VLB® (Agente químico que tiene Valor Límite Biológico), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2022. INSHT
Spain - Biological limit values	
Local name	Metiletilcetona (Butanona)
BLV	2 mg/l Parámetro: Metiletilcetona - Medio: Orina - Momento de muestreo: Final de la jornada laboral
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2022. INSHT
Sweden - Occupational Exposure Limits	
Local name	Metyletylketon (MEK)
NGV (OEL TWA)	150 mg/m³
NGV (OEL TWA) [ppm]	50 ppm
KTV (OEL STEL)	900 mg/m³
KTV (OEL STEL) [ppm]	300 ppm
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Butan-2-one (methyl ethyl ketone)
WEL TWA (OEL TWA) [1]	600 mg/m³
WEL TWA (OEL TWA) [2]	200 ppm
WEL STEL (OEL STEL)	899 mg/m³
WEL STEL (OEL STEL) [ppm]	300 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
United Kingdom - Biological limit values	
Local name	Butan-2-one (methyl ethyl ketone)
BMGV	70 µmol/l Parameter: butan-2-one - Medium: urine - Sampling time: Post shift
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Metýletýlketón (bútanón, etýlmetýlketón, MEK)

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butanone; ethyl methyl ketone (78-93-3)	
OEL TWA	145 mg/m³
OEL TWA [ppm]	50 ppm
OEL STEL	900 mg/m³
OEL STEL [ppm]	300 ppm
Remark	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Butanon (Metyletylketon)
Grenseverdi (OEL TWA) [1]	220 mg/m³
Grenseverdi (OEL TWA) [2]	75 ppm
Remark	E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet.
Regulatory reference	FOR-2021-06-28-2248
North Macedonia - Occupational Exposure Limits	
Local name	бутанон (Етилметилкетон)
OEL TWA	600 mg/m³
OEL TWA [ppm]	200 ppm
KTV	1.5
Short time value [mg/m³]	900 mg/m³
Short time value [ppm]	300 ppm
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m³ или во ml/m³(ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (BAT) биолошка гранична вредност – праг на биолошка гранична вредност, што значи предупредување на опасна хемиска супстанца и нејзини метаболити во ткивата, телесните течности или издишувањето на воздухот, без оглед на тоа, дали опасната хемиска супстанца е внесена во организмот со вдишување, голтање или преку кожата; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија“ бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	2-Butanone / 2-Butanon [Ethylmethylketon, Methyl ethylketon (MEK)]
MAK (OEL TWA) [1]	590 mg/m³
MAK (OEL TWA) [2]	200 ppm
KZGW (OEL STEL)	590 mg/m³
KZGW (OEL STEL) [ppm]	200 ppm
Critical toxicity	VRS, SN / OAW, NS
Notation	R, SS _C , B / H, SS _C , B

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butanone; ethyl methyl ketone (78-93-3)	
Remark	INRS, NIOSH, OSHA
Regulatory reference	www.suva.ch, 01.01.2021
Turkey - Occupational Exposure Limits	
Local name	Butanon
OEL TWA	600 mg/m ³
OEL TWA [ppm]	200 ppm
OEL STEL	900 mg/m ³
OEL STEL [ppm]	300 ppm
Regulatory reference	12 Ağustos 2013 Tarihli ve 28733 Sayılı Resmî Gazete
4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	4-Methylpentan-2-one
IOEL TWA [ppm]	20 ppm
IOEL STEL	208 mg/m ³
IOEL STEL [ppm]	50 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Austria - Occupational Exposure Limits	
Local name	4-Methylpentanon-2 (Methylisobutylketon)
MAK (OEL TWA)	83 mg/m ³
MAK (OEL TWA) [ppm]	20 ppm
MAK (OEL STEL)	208 mg/m ³ (4x 15(Miw) min)
MAK (OEL STEL) [ppm]	50 ppm (4x 15(Miw) min)
Remark	H
Regulatory reference	BGBI. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	4-Méthyl-2-pentanone # 4-Methyl-2-pentanon
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Bulgaria - Occupational Exposure Limits	
Local name	Метилизобутилкетон (4-метил-пентан-2-он)
OEL TWA	50 mg/m ³
OEL STEL	200 mg/m ³
Remark	• (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
Croatia - Occupational Exposure Limits	
Local name	4-Metil-pentan-2-on; izobutil-metil-ke-ton
GVI (OEL TWA) [1]	83 mg/m ³
GVI (OEL TWA) [2]	20 ppm
KGVI (OEL STEL)	208 mg/m ³
KGVI (OEL STEL) [ppm]	50 ppm
Remark	Direktiva: 2000/39/EZ
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
Croatia - Biological limit values	
Local name	4-Metil-pentan-2-on
BLV	3.5 mg/l Karakteristični pokazatelj: 4-metil-pentan-2-on - Biološki uzorak: mokraća - Vrijeme uzorkovanja: nije kritično 35 nmol/l Karakteristični pokazatelj: 4-metil-pentan-2-on - Biološki uzorak: mokraća - Vrijeme uzorkovanja: nije kritično
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/2018)
Cyprus - Occupational Exposure Limits	
Local name	4-Μεθυλοπενταν-2-όνη
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	Κανονισμοί του 2007 (Κ.Δ.Π. 295/2007)
Czech Republic - Occupational Exposure Limits	
Local name	4-Methyl-2-pentanon (iso-Butylmethylketon)
PEL (OEL TWA)	80 mg/m ³
PEL (OEL TWA) [ppm]	19 ppm
NPK-P (OEL C)	200 mg/m ³
NPK-P (OEL C) [ppm]	48 ppm
Remark	D - při expozici se významně uplatňuje pronikání faktoru kůží, I - dráždí sliznice (oči, dýchací cesty), respektive kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Methylisobutylketon (Hexon; 4-Methyl-2-pentanon; MIBK)
OEL TWA [1]	83 mg/m ³
OEL TWA [2]	20 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
Regulatory reference	BEK nr 2203 af 29. november 2021

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)

Estonia - Occupational Exposure Limits

Local name	4-metüül-2-pentanoon (metüülisobutüülketoon)
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 15.05.2021, 1)

Finland - Occupational Exposure Limits

Local name	4-Metyyli-2-pentanoni
HTP (OEL TWA) [1]	80 mg/m³
HTP (OEL TWA) [2]	20 ppm
HTP (OEL STEL)	210 mg/m³
HTP (OEL STEL) [ppm]	50 ppm
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)

France - Occupational Exposure Limits

Local name	Méthylisobutylcétone (4-Méthyl-2-pentanone) (4-Méthylpentane-2-one)
VME (OEL TWA)	83 mg/m³
VME (OEL TWA) [ppm]	20 ppm
VLE (OEL C/STEL)	208 mg/m³
VLE (OEL C/STEL) [ppm]	50 ppm
Remark	Valeurs réglementaires contraignantes
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)

Germany - Occupational Exposure Limits (TRGS 900)

AGW (OEL TWA) [1]	83 mg/m³
AGW (OEL TWA) [2]	20 ppm
Peak exposure limitation factor	2(I)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); H - hautresorptiv; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900

Germany - Biological limit values (TRGS 903)

Local name	4-Methylpentan-2-on
Biological limit value	0.7 mg/l Parameter: 4-Methylpentan-2-on - Untersuchungsmaterial: U = Urin - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 05/2015 DFG
Regulatory reference	TRGS 903

Gibraltar - Occupational Exposure Limits

Local name	4-Methylpentan-2-one
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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Μεθυλο-ισοβουτυλο-κετόνη
OEL TWA	410 mg/m³
OEL TWA [ppm]	100 ppm
OEL STEL	410 mg/m³
OEL STEL [ppm]	100 ppm
Remark	Η ένδειξη «δέρμα» στις οριακές τιμές επαγγελματικής έκθεσης επισημαίνει το ενδεχόμενο σημαντικής διείσδυσης μέσω του δέρματος.
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	4-METILPENTÁN-2-ON (Izobutil-metil-ke-ton)
AK (OEL TWA)	83 mg/m³
CK (OEL STEL)	208 mg/m³
Remark	EU1 (2000/39/EK irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Methyl isobutyl ketone (MIBK) [Hexone, Isobutyl methyl keton, 4-Methylpentan-2-one)
OEL TWA [1]	83 mg/m³
OEL TWA [2]	20 ppm
OEL STEL	208 mg/m³
OEL STEL [ppm]	50 ppm
Remark	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Methyl isobutyl ketone (MIBK)/ 4-methylpentan-2-one
BLV	1 mg/l Parameter: MIBK - Medium: urine - Sampling time: End of shift
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Italy - Occupational Exposure Limits	
Local name	Metilpentan-2-one, 4-
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	4-Metil-2-pentanons, (izobutilmetilketons, metilizobutilketons, izopropilacetons)
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325
Lithuania - Occupational Exposure Limits	
Local name	Metilizobutilketonas (MIBK) (4-metilpentanonas-2)
IPRV (OEL TWA)	83 mg/m ³
IPRV (OEL TWA) [ppm]	20 ppm
TPRV (OEL STEL)	208 mg/m ³
TPRV (OEL STEL) [ppm]	50 ppm
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg - Occupational Exposure Limits	
Local name	4-Méthylpentane-2-one
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	4-Methylpentan-2-one
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)
Netherlands - Occupational Exposure Limits	
Local name	4-Methyl-2-pentanon
TGG-8u (OEL TWA)	104 mg/m ³
TGG-15min (OEL STEL)	208 mg/m ³
Regulatory reference	Arbeidsomstandighedenregeling 2022
Poland - Occupational Exposure Limits	
Local name	4-Metylopentan-2-on (metyloizobutyloketon,heksen)

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
NDS (OEL TWA)	83 mg/m³
NDSCh (OEL STEL)	200 mg/m³
Regulatory reference	Dz. U. 2018 poz. 1286
Portugal - Occupational Exposure Limits	
Local name	Metilisobutilcetona (MIBK)
OEL TWA [ppm]	20 ppm
OEL STEL [ppm]	75 ppm
Remark	A3 (Agente carcinogénico confirmado nos animais de laboratório com relevância desconhecida no Homem); IBE (Índice biológico de exposição)
Regulatory reference	Norma Portuguesa NP 1796:2014
Portugal - Biological Exposure Indices	
Local name	Metilisobutilcetona (MIBK)
BEI	1 mg/l Parâmetro: Metilisobutilcetona (MIBK) - Meio: urina - Momento da amostragem: Fim do turno
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	4-metilpentan-2-onă
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m³
OEL STEL [ppm]	50 ppm
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Serbia - Occupational Exposure Limits	
Local name	4-метилпентан-2-он; изобутил-метил-кетон
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m³
OEL STEL [ppm]	50 ppm
Remark	ЕУ* – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2000/39/ЕЗ (прва листа)
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)
Slovakia - Occupational Exposure Limits	
Local name	4-Metylpentán-2-ón (izobutylmetylketón, hexón)
NPHV (OEL TWA) [1]	83 mg/m³
NPHV (OEL TWA) [2]	20 ppm
NPHV (OEL STEL)	166 mg/m³
NPHV (OEL STEL) [ppm]	40 ppm
Remark	K - znamená, že faktor môže byť ľahko absorbovaný kožou
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
Slovakia - Biological limit values	
Local name	Hexón (izobutyl-metyl-ketón)
BLV	3.5 mg/l Zisťovaný faktor: Hexón - Vyšetrovaný materiál: moč - Čas odberu vzorky: b) koniec expozície alebo pracovnej zmeny
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (Zmena: 471/2011 Z.z.)
Slovenia - Occupational Exposure Limits	
Local name	4-metilpentan-2-on (metilizobutylketon)
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Remark	K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in BAT vrednosti), BAT (Biološka mejna vrednost), EU
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Slovenia - Biological limit values	
Local name	4-metilpentan-2-on (metilizobutyl keton)
BLV	0.7 mg/l Parameter: 4-metilpentan-2-on - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Metilisobutilcetona (Hexona)
VLA-ED (OEL TWA) [1]	83 mg/m ³
VLA-ED (OEL TWA) [2]	20 ppm
VLA-EC (OEL STEL)	208 mg/m ³
VLA-EC (OEL STEL) [ppm]	50 ppm
Remark	VLB® (Agente químico que tiene Valor Límite Biológico), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2022. INSHT
Spain - Biological limit values	
Local name	Metilisobutilcetona (Hexona)
BLV	1 mg/l Parámetro: Metilisobutilcetona - Medio: Orina - Momento de muestreo: Final de la jornada laboral
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2022. INSHT
Sweden - Occupational Exposure Limits	
Local name	Metylisobutylketon (MIBK)
NGV (OEL TWA)	83 mg/m ³
NGV (OEL TWA) [ppm]	20 ppm
KTV (OEL STEL)	200 mg/m ³
KTV (OEL STEL) [ppm]	50 ppm
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
United Kingdom - Occupational Exposure Limits	
Local name	4-Methylpentan-2-one
WEL TWA (OEL TWA) [1]	208 mg/m³
WEL TWA (OEL TWA) [2]	50 ppm
WEL STEL (OEL STEL)	416 mg/m³
WEL STEL (OEL STEL) [ppm]	100 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
United Kingdom - Biological limit values	
Local name	4-methylpentan-2-one
BMGV	20 µmol/l Parameter: 4-methylpentan-2-one - Medium: urine - Sampling time: Post shift
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Metýlísóbútylketón (hexón, 4-metýl-2-pentanón, MIBK)
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m³
OEL STEL [ppm]	50 ppm
Remark	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	4-metýlpentan-2-on (Metylisobutylketon)
Grenseverdi (OEL TWA) [1]	83 mg/m³
Grenseverdi (OEL TWA) [2]	20 ppm
Korttidsverdi (OEL STEL)	208 mg/m³
Korttidsverdi (OEL STEL) [ppm]	50 ppm
Remark	H: Kjemikalier som kan tas opp gjennom huden; E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet.
Regulatory reference	FOR-2021-06-28-2248
North Macedonia - Occupational Exposure Limits	
Local name	4-метилпентан-2-он (метилизобутилкетон)
OEL TWA	83 mg/m³
OEL TWA [ppm]	20 ppm
KTV	2.5
Short time value [mg/m³]	207.5 mg/m³
Short time value [ppm]	50 ppm

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4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
Remark	(КТВ) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (БАТ) биолошка гранична вредност – праг на биолошка гранична вредност, што значи предупредување на опасна хемиска супстанца и нејзини метаболити во ткивата, телесните течности или издишувањето на воздухот, без оглед на тоа, дали опасната хемиска супстанца е внесена во организмот со вдишување, голтање или преку кожата; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија“ бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	4-Méthylpentan-2-one / 4-Methylpentan-2-on [Hexon, Methylisobutylketon (MIBK)]
MAK (OEL TWA) [1]	82 mg/m ³
MAK (OEL TWA) [2]	20 ppm
KZGW (OEL STEL)	164 mg/m ³
KZGW (OEL STEL) [ppm]	40 ppm
Critical toxicity	VRS, SNC, Yeux / OAW, ZNS, Auge
Notation	R, SS _c , B / H, SS _c , B
Remark	INRS, NIOSH, DFG
Regulatory reference	www.suva.ch, 01.01.2021
Switzerland - BAT	
Local name	4-Méthylpentan-2-one / 4-Methylpentan-2-on
BAT	0.7 mg/l (Paramètre biologique: 4-Méthylpentane-2-one; Substrat d'examen: Urine; Moment du prélèvement: Fin de l'exposition, de la période de travail.) / (Biologischer Parameter: 4-Methylpentan-2-on; Untersuchungsmaterial: Urin; Probennahmezeitpunkt: Expositionsende, bzw. Schichtende.)
Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte
Turkey - Occupational Exposure Limits	
Local name	4-Metilpentan-2-on
OEL TWA	83 mg/m ³
OEL TWA [ppm]	20 ppm
OEL STEL	208 mg/m ³
OEL STEL [ppm]	50 ppm
Regulatory reference	12 Ağustos 2013 Tarihli ve 28733 Sayılı Resmî Gazete

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

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8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Protective clothing. Gloves.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless liquid.
Colour	: Colourless.
Odour	: acetone-like.
Odour threshold	: No data available
pH	: Approx. 7
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available.
Freezing point	: No data available
Boiling point	: 82 °C
Flash point	: 2 °C
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable

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Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available.
Relative density	: 0.810 @ 20 C
Solubility	: Material highly soluble in water. Water: Soluble Acetone: Soluble Organic solvent: Soluble
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.

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ATE CLP (dust,mist)	3.391 mg/l/4h
Skin corrosion/irritation	: Not classified pH: Approx. 7
Serious eye damage/irritation	: Causes serious eye damage. pH: Approx. 7
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer (if swallowed, if inhaled).
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause drowsiness or dizziness.

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butanone; ethyl methyl ketone (78-93-3)	
STOT-single exposure	May cause drowsiness or dizziness.
BUTAN-1-OL (71-36-3)	
STOT-single exposure	May cause drowsiness or dizziness. May cause respiratory irritation.
4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified
4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
LOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEC (inhalation, rat, vapour, 90 days)	4106 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
Not rapidly degradable	

butanone; ethyl methyl ketone (78-93-3)	
LC50 - Fish [1]	2993 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	308 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	1972 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	2029 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
4-methylpentan-2-one; isobutyl methyl ketone (108-10-1)	
LC50 - Fish [1]	> 179 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 200 mg/l Test organisms (species): Daphnia magna

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Flammable vapours may accumulate in the container.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 1263	UN 1263	UN 1263	UN 1263	UN 1263
14.2. UN proper shipping name				
PAINT / PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	Paint related material	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport document description				
UN 1263 PAINT / PAINT RELATED MATERIAL, 3, II, (D/E)	UN 1263 PAINT RELATED MATERIAL, 3, II	UN 1263 Paint related material, 3, II	UN 1263 PAINT RELATED MATERIAL, 3, II	UN 1263 PAINT RELATED MATERIAL, 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Special provisions (ADR) : 163, 367, 640C, 650
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001
Special packing provisions (ADR) : PP1
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4

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Portable tank and bulk container special provisions (ADR) : TP1, TP8, TP28

Tank code (ADR) : L1.5BN

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

Orange plates :



Tunnel restriction code (ADR) : D/E

EAC code : •3YE

Transport by sea

Special provisions (IMDG) : 163, 367

Limited quantities (IMDG) : 5 L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

Special packing provisions (IMDG) : PP1

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T4

Tank special provisions (IMDG) : TP1, TP8, TP28

EmS-No. (Fire) : F-E

EmS-No. (Spillage) : S-E

Stowage category (IMDG) : B

Properties and observations (IMDG) : Miscibility with water depends upon the composition.

Air transport

PCA Excepted quantities (IATA) : E2

PCA Limited quantities (IATA) : Y341

PCA limited quantity max net quantity (IATA) : 1L

PCA packing instructions (IATA) : 353

PCA max net quantity (IATA) : 5L

CAO packing instructions (IATA) : 364

CAO max net quantity (IATA) : 60L

Special provisions (IATA) : A3, A72, A192

ERG code (IATA) : 3L

Inland waterway transport

Classification code (ADN) : F1

Special provisions (ADN) : 163, 367, 640C, 650

Limited quantities (ADN) : 5 L

Excepted quantities (ADN) : E2

Equipment required (ADN) : PP, EX, A

Ventilation (ADN) : VE01

Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : F1

Special provisions (RID) : 163, 367, 640C, 650

Limited quantities (RID) : 5L

Excepted quantities (RID) : E2

Packing instructions (RID) : P001

Special packing provisions (RID) : PP1

Mixed packing provisions (RID) : MP19

Portable tank and bulk container instructions (RID) : T4

Portable tank and bulk container special provisions (RID) : TP1, TP8, TP28

Tank codes for RID tanks (RID) : L1.5BN

Transport category (RID) : 2

Colis express (express parcels) (RID) : CE7

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Hazard identification number (RID) : 33

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Organic solvent

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

15.1.2. National regulations

France

Occupational diseases

Code	Description
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG)
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG)

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV, Annex 1)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

ABM category : A(4) - low hazard for aquatic organisms, may have longterm hazardous effects in aquatic environment

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

Switzerland

Storage class (LK) : LK 3 - Flammable liquids

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15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

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Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.