

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
SDS Reference Number: BPR043
Issue date: 2013/8/31 Revision date: 2025/1/5 Supersedes version of: 2022/4/17 Version: 1.4

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

1.1. Product identifier

Product form : Mixture
Product name : British Pharmacopoeia Reagent - Arsenite Solution
Product code : BPR043

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

Relevant identified uses

Main use category : Professional use
Use of the substance/mixture : Laboratory chemical
Function or use category : Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

Spectracer UK Ltd.

20 Seymour Mews,
London,
W1H 6BQ,
United Kingdom.

Tel: +44 (0) 207 193 9114
Fax: +44 (0) 203 432 4686
Email: contact@spectracer.com
Web: www.spectracer.com

1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964	
Malta	Medicines & Poisons Info Office	Mater Dei Hospital Msida MSD 2090 Msida	112 +356 2545 6508	
United Kingdom	National Poisons Information Service (NHS Direct)	http://www.npis.org	111 (England & Wales only) or 112 (EU) or 08454 24 24 24 (Scotland)	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Carcinogenicity, Category 1A H350
Hazardous to the aquatic environment – Chronic Hazard, H412
Category 3
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause cancer. Harmful to aquatic life with long lasting effects.

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS08

Signal word (CLP) :

Danger

Contains :

arsenic trioxide

Hazard statements (CLP) :

H350 - May cause cancer.

H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P201 - Obtain special instructions before use.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313 - IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	sodium hydroxide (1310-73-2), arsenic trioxide (1327-53-3), sodium bicarbonate (144-55-8)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	sodium hydroxide (1310-73-2), arsenic trioxide (1327-53-3), sodium bicarbonate (144-55-8)

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
Substance(s) not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605	arsenic trioxide (1327-53-3)

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
sodium bicarbonate substance with national workplace exposure limit(s) (LV)	CAS-No.: 144-55-8 EC-No.: 205-633-8 REACH-no: 01-2119457606-32	1 – 5	Skin Corr./Irrit. Not classified

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
arsenic trioxide substance listed on REACH Candidate List (Diarsenic trioxide) substance listed on REACH Annex XIV (Diarsenic trioxide) substance with national workplace exposure limit(s) (AT, ES, FI, GB, HR, NL, SI, MK)	CAS-No.: 1327-53-3 EC-No.: 215-481-4 EC Index-No.: 033-003-00-0 REACH-no: 01-2119502457-43-XXXX	0,5 – 1	Acute Tox. 2 (Oral), H300 Skin Corr. 1B, H314 Carc. 1A, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
sodium hydroxide substance with national workplace exposure limit(s) (AT, BE, BG, CZ, DK, EE, ES, FI, GB, GR, HR, HU, IE, LT, LV, PL, PT, SE, SI, SK, IS, NO, MK, CH)	CAS-No.: 1310-73-2 EC-No.: 215-185-5 EC Index-No.: 011-002-00-6 REACH-no: 01-2119457892-27-XXXX	0,25 – 0,5	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318

Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
sodium hydroxide	CAS-No.: 1310-73-2 EC-No.: 215-185-5 EC Index-No.: 011-002-00-6 REACH-no: 01-2119457892-27-XXXX	(0,5 ≤ C < 2) Eye Irrit. 2; H319 (0,5 ≤ C < 2) Skin Irrit. 2; H315 (2 ≤ C < 5) Skin Corr. 1B; H314 (5 ≤ C < 100) Skin Corr. 1A; H314

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.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.
First-aid measures for first aider	: First aid workers will be equipped with suitable personal protective equipment.

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

Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

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.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.

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Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene.

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".

Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.

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

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly.

Hygiene measures : Separate working clothes from town clothes. Launder separately. 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 : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store locked up.

Packaging materials : Store always product in container of same material as original container.

Germany

Storage class (LGK, TRGS 510) : LGK 6.1D - Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

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Joint storage table

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for

: LGK 1, LGK 2A, LGK 4.1A, LGK 5.1A, LGK 5.1C, LGK 5.2, LGK 6.2, LGK 7

Joint storage with restrictions permitted for

: LGK 3, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1B

Joint storage permitted for

: LGK 2B, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

sodium hydroxide (1310-73-2)	
Austria - Occupational Exposure Limits	
Local name	Natriumhydroxid (Ätznatron)
MAK (OEL TWA)	2 mg/m ³ (E)
MAK (OEL STEL)	4 mg/m ³ (E, 8x 5(Mow) min)
Regulatory reference	BGBI. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	Sodium (hydroxyde de) # Natriumhydroxide
OEL TWA	2 mg/m ³
Remark	M: la mention "M" indique que lors d'une exposition supérieure à la valeur limite, des irritations apparaissent ou un danger d'intoxication aiguë existe. Le procédé de travail doit être conçu de telle façon que l'exposition ne dépasse jamais la valeur limite. Lors des mesurages, la période d'échantillonnage doit être aussi courte que possible afin de pouvoir effectuer des mesurages fiables. Le résultat des mesurages est calculé en fonction de la période d'échantillonnage. # M: de vermelding "M" duidt aan dat bij de blootstelling boven de grenswaarde irritatie optreedt of er gevaar bestaat voor acute vergiftiging. Het werkproces moet zo zijn ontworpen dat de blootstelling de grenswaarde nooit overschrijdt. Bij een controle geldt dat de bemonsterde periode zo kort mogelijk moet zijn om een betrouwbare meting te kunnen verrichten. Het meetresultaat wordt dan gerelateerd aan de beschouwde periode.
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Натриева основа
OEL TWA	2 mg/m ³ (алкални аерозоли)
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. 28 от 2024 г., в сила от 05.04.2024 г.)
Croatia - Occupational Exposure Limits	
Local name	Natrijev hidroksid; kaustična soda

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sodium hydroxide (1310-73-2)	
KGVI (OEL STEL)	2 mg/m ³
Regulatory reference	Pravidník o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Czech Republic - Occupational Exposure Limits	
Local name	Hydroxid sodný
PEL (OEL TWA)	1 mg/m ³
NPK-P (OEL C)	2 mg/m ³
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůže.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Natriumhydroxid
OEL C	2 mg/m ³
Regulatory reference	BEK nr 291 af 19/03/2024
Estonia - Occupational Exposure Limits	
Local name	Naatriumhüdroksiid
OEL TWA	1 mg/m ³
OEL STEL	2 mg/m ³ lühiajalise kokkupuute piirnorm, arvatatud viieminutisele kokkupuuteajale
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 02.04.2024, 13)
Finland - Occupational Exposure Limits	
Local name	Natriumhydroksidi
HTP (OEL C)	2 mg/m ³
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
Greece - Occupational Exposure Limits	
Local name	Υδροξείδιο του νατρίου
OEL TWA	2 mg/m ³
OEL STEL	2 mg/m ³
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	NÁTRIUM-HIDROXID
AK (OEL TWA)	1 mg/m ³
CK (OEL STEL)	2 mg/m ³
Remark	m (maró hatású anyag, amely felmarja a bőrt, nyálkahártyát, szemet vagy mindhármát); 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	Sodium hydroxide
OEL STEL	2 mg/m ³
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values)

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sodium hydroxide (1310-73-2)	
Regulatory reference	Chemical Agents Code of Practice 2024
Latvia - Occupational Exposure Limits	
Local name	Nātrija hidroksīds (nātrija sārms, kaustiskā soda)
OEL TWA	0,5 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2024. gada 26. martā noteikumiem Nr. 191).
Lithuania - Occupational Exposure Limits	
Local name	Natrio hidroksidas
NRV (OEL C)	2 mg/m ³
Remark	Ū (ūmus poveikis)
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Poland - Occupational Exposure Limits	
Local name	Wodorotlenek sodu
NDS (OEL TWA)	0,5 mg/m ³
NDSCh (OEL STEL)	1 mg/m ³
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Hidróxido de sódio
OEL C	2 mg/m ³ 2 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia - Occupational Exposure Limits	
Local name	Hydroxid sodný
NPHV (OEL TWA)	2 mg/m ³
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)
Slovenia - Occupational Exposure Limits	
OEL STEL	2 mg/m ³
Spain - Occupational Exposure Limits	
Local name	Hidróxido de sodio
VLA-EC (OEL STEL)	2 mg/m ³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Sweden - Occupational Exposure Limits	
Local name	Natriumhydroxid
NGV (OEL TWA)	1 mg/m ³ inhalerbar fraktion
KGV (OEL STEL)	2 mg/m ³ inhalerbar fraktion
Remark	3 (Med inhalerbar fraktion menas den mängd partiklar, av totalmängden partiklar i luften, som man inandas genom näsa och mun)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Sodium hydroxide

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sodium hydroxide (1310-73-2)	
WEL STEL (OEL STEL)	2 mg/m ³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Natríumhýdroxíð (vítissóti)
OEL STEL	2 mg/m ³
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Natriumhydroksid
Grenseverdi (OEL TWA)	2 mg/m ³
Takverdi (OEL C)	2 mg/m ³
Regulatory reference	FOR-2024-04-05-581
North Macedonia - Occupational Exposure Limits	
Local name	Натриум хидроксид
OEL TWA	2 mg/m ³ (l) инхалабилна фракција – дел на вкупно суспендирани материји, кои работникот ги вдишува
KTV	1
Short time value [mg/m ³]	2 mg/m ³
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/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (Y)
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	Soude caustique / Natriumhydroxid [Aetznatron]
MAK (OEL TWA)	2 mg/m ³ (i) / (e)
KZGW (OEL STEL)	2 mg/m ³ (i) / (e)
Notation	SS _c / SS _c
Remark	NIOSH, OSHA
Regulatory reference	www.suva.ch, 01.01.2024
USA - ACGIH - Occupational Exposure Limits	
Local name	Sodium hydroxide
ACGIH OEL C	2 mg/m ³
Remark (ACGIH)	TLV® Basis: URT, eye, & skin irr
Regulatory reference	ACGIH 2024

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arsenic trioxide (1327-53-3)	
Austria - Occupational Exposure Limits	
Local name	Arsentrioxid (Diarsentrioxid)
TRK (OEL TWA)	0,1 mg/m ³ (als As berechnet, E)
TRK (OEL STEL)	0,4 mg/m ³ (als As berechnet, E, 4x 15(Miw) min)
Remark	Krebserzeugend: III A1
Regulatory reference	BGBI. II Nr. 156/2021
Croatia - Occupational Exposure Limits	
Local name	Arsenov trioksid; diarsenov trioksid (kao As)
GVI (OEL TWA)	0,1 mg/m ³
Remark	Karc 1A
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Finland - Occupational Exposure Limits	
Local name	Arseenitrioksidi
HTP (OEL TWA)	0,01 mg/m ³ As
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
Finland - Biological limit values	
Local name	Arseenitrioksidi
BLV	70 nmol/l Parametri: Virtsan epäorgaaninen arseen - Näytteenottoajankohta: Työvaiheen tai työvuoron päätyttyä työviikon tai altistumisjakson loputtua
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
Netherlands - Occupational Exposure Limits	
Local name	Arseentrioxide
TGG-8u (OEL TWA)	0,28 µg/m ³ (als As)
Remark	Kankerverwekkende stof
Regulatory reference	Arbeidsomstandighedenregeling 2024
Slovenia - Occupational Exposure Limits	
Local name	diarzenov trioksid (Arzenov (III)oksid)
OEL TWA	0,1 mg/m ³
OEL STEL	0,4 mg/m ³
Remark	Rakotvorne snovi – kategorija 1A. BAT (Biološka mejna vrednost), EKA (Zveza med koncentracijo rakotvornih snovi v zraku na delovnem mestu in količino snovi in/ali njenih metabolitov v organizmu)
Regulatory reference	Uradni list RS, št. 29/2024 z dne 4.4.2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti rakotvornim ali mutagenim snovem
Spain - Occupational Exposure Limits	
Local name	Trióxido de diarsénico
VLA-ED (OEL TWA)	0,01 mg/m ³ como As

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arsenic trioxide (1327-53-3)	
Remark	C1A (Carcinógeno para el hombre), VLB® (Agente químico que tiene Valor Límite Biológico), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido), s (Esta sustancia tiene prohibida total o parcialmente su comercialización y uso como fitosanitario y/o como biocida. Para una información detallada acerca de las prohibiciones consúltese: Base de datos de productos biocidas: http://www.msssi.gob.es/ciudadanos/productos.do?tipo=plaguicidas Base de datos de productos fitosanitarios http://www.magrama.gob.es/agricultura/pags/fitos/registro/fichas/pdf/Lista_sa.pdf).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	Arsenic
WEL TWA (OEL TWA)	0,1 mg/m ³ Arsenic and compounds except arsine (as As); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
Remark	Carc (Capable of causing cancer and/or heritable genetic damage)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
North Macedonia - Occupational Exposure Limits	
Local name	диарсенов триоксид (арсен (III) оксид)
OEL TWA	0,1 mg/m ³ (l) инхалабилна фракција – дел на вкупно суспендирани материји, кои работникот ги вдишува
KTV	4
Short time value [mg/m ³]	0,4 mg/m ³
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/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (TDK) техничко достигнување на концентрацијата – е дадено за канцерогените супстанции и значи концентрација на супстанции во воздухот на работното место, кои можат да се достигнат со достапните техники; (ЕКА) поврзаноста помеѓу концентрацијата на канцерогени супстанции во воздухот на работното место и износ на количината на канцерогените супстанции и/или нивните метаболити во организмот – дадена за канцерогени супстанции (канцерогени)
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	
MAK (OEL TWA)	0,1 mg/m ³
sodium bicarbonate (144-55-8)	
Latvia - Occupational Exposure Limits	
Local name	Nātrija hidrogēnkarbonāts (dzeramā soda)

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sodium bicarbonate (144-55-8)	
OEL TWA	5 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2024. gada 26. martā noteikumiem Nr. 191).

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Safety glasses

Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

Respiratory protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

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
Colour	: Not available
Odour	: Not available
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Non flammable.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available

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Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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

None under recommended storage and handling conditions (see section 7).

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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

arsenic trioxide (1327-53-3)	
LD50 oral rat	14,6 (10 – 214) mg/kg

sodium bicarbonate (144-55-8)	
LD50 oral rat	> 4000 mg/kg

Skin corrosion/irritation : Not classified

sodium hydroxide (1310-73-2)	
pH	14 (5%)

sodium bicarbonate (144-55-8)	
pH	8,4 – 9,3 (5 %)

Serious eye damage/irritation : Not classified

sodium hydroxide (1310-73-2)	
pH	14 (5%)

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sodium bicarbonate (144-55-8)

pH	8,4 – 9,3 (5 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.

arsenic trioxide (1327-53-3)

IARC group	1 - Carcinogenic to humans
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

sodium bicarbonate (144-55-8)

Viscosity, kinematic	Not applicable
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11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

sodium hydroxide (1310-73-2)

LC50 - Fish [1]	45,4 mg/l <i>Oncorhynchus mykiss</i> (Rainbow trout)
EC50 - Crustacea [1]	40,4 mg/l <i>Ceriodaphnia</i> sp.

arsenic trioxide (1327-53-3)

LC50 - Fish [1]	12,6 mg/l <i>Pimephales promelas</i> (Fathead minnow)
LOEC (chronic)	1,32 mg/l <i>Daphnia magna</i> (Water flea)

sodium bicarbonate (144-55-8)

LC50 - Fish [1]	7100 mg/l <i>Lepomis macrochirus</i> (Bluegill)
EC50 - Crustacea [1]	4100 mg/l <i>Daphnia magna</i> (Water flea)
NOEC (chronic)	> 576 mg/l <i>Daphnia magna</i> (Water flea)

12.2. Persistence and degradability

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Persistence and degradability	Rapidly degradable
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sodium hydroxide (1310-73-2)

Persistence and degradability	Rapidly degradable
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arsenic trioxide (1327-53-3)

Persistence and degradability	Rapidly degradable
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sodium bicarbonate (144-55-8)

Persistence and degradability	Rapidly degradable
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12.3. Bioaccumulative potential

arsenic trioxide (1327-53-3)

Bioaccumulative potential	bioaccumulable.
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sodium bicarbonate (144-55-8)

Partition coefficient n-octanol/water (Log Pow)	-4,01 (estimated value)
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component

Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	sodium hydroxide (1310-73-2), arsenic trioxide (1327-53-3), sodium bicarbonate (144-55-8)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	sodium hydroxide (1310-73-2), arsenic trioxide (1327-53-3), sodium bicarbonate (144-55-8)

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not dangerous goods in terms of transport regulations				
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

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ADR	IMDG	IATA	ADN	RID
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
19.	arsenic trioxide	Arsenic compounds
28.	arsenic trioxide	Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.
3(b)	British Pharmacopoeia Reagent - Arsenite Solution	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	British Pharmacopoeia Reagent - Arsenite Solution	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1

REACH Annex XIV (Authorisation List)

Contains substance(s) listed on REACH Annex XIV: Diarsenic trioxide (EC 215-481-4, CAS 1327-53-3)

REACH Candidate List (SVHC)

Contains substance(s) listed on the REACH Candidate List in concentrations $\geq 0.1\%$ or SCL: Diarsenic trioxide (EC 215-481-4, CAS 1327-53-3)

PIC Regulation (Prior Informed Consent)

Contains substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals): diarsenic trioxide (1327-53-3)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

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Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

National regulations

France

Occupational diseases	
Code	Description
RG 20	Occupational diseases caused by arsenic and its mineral compounds
RG 20 BIS	Primary bronchial cancer caused by inhalation of arsenical dust or vapors

Germany

VOC ordinance (ChemVOCFarbV) :

Water hazard class (WGK) :

WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1).

Hazardous Incident Ordinance (12. BImSchV) :

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

Netherlands

ABM category :

Z(2) - biodegradable substances with hazardous properties for humans and the environment (carcinogenicity/ mutagenicity/reprotoxicity/bioaccumulative potential or toxicity)

SZW-lijst van kankerverwekkende stoffen :

arsenic trioxide is listed

SZW-lijst van mutagene stoffen :

None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding :

arsenic trioxide is listed

SZW-lijst van reprotoxische stoffen –

arsenic trioxide is listed

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen – Ontwikkeling :

arsenic trioxide is listed

Denmark

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

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Poland

Polish National Regulations

: Act of 25 February 2011 on chemical substances and their mixtures (J. o L. No. 63, item 322 as amended; consolidated text J. o L. 2019, item 1225).
Act of 14 December 2012 on waste (J. o L. 2013, item 322 as amended; consolidated text J. o L. 2020, item 797).
The announcement of Marshal of the Sejm of the Republic of Poland dated 19 October 2016 concerning the consolidated text announcement of the decree on the management of packaging and packaging waste (J. o L. 2016, item 1863 as amended).
Decree of the Minister of Environment of 14 December 2014 on the catalogue of waste (J. o L. 2014, item 1923).
Act of 19 August 2011 on the Carriage of Dangerous Goods (J. o L. 2011 No. 227, item 1367 as amended; consolidated text J. o L. 2020, item 154).
Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the highest permissible concentration and intensity of noxious agents for health at work environment (J. o L. item 1286 as amended).
The announcement of Minister of Health dated 9 September 2016 concerning the consolidated text announcement of the decree of the Minister of Health of 30 December 2004 on health and safety at work related to exposure to chemical agents at work (J. o L. of 16 September 2016, item 1488)
Regulation of the Minister of Health of 2 February 2011 on tests and measurements of the noxious agents for health at work environment (J. o L. No. 33, item 166 as amended).
Regulation of the Minister of Environment of 9 December 2003 on particularly hazardous substances to the environment (J. o L. No. 217, item 2141).
ADR Agreement: Government Statement of 13 March 2023 on the entry into force of amendments to Annexes A and B to the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed in Geneva on 30 September 1957 (J. o. L. 2023, item 891)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes		
Section	Changed item	Comments
4.1	First-aid measures for first aider	Added
4.2	Symptoms/effects after skin contact	Added
4.2	Symptoms/effects after inhalation	Added
4.2	Symptoms/effects after ingestion	Added
4.2	Symptoms/effects after eye contact	Added
5.1	Unsuitable extinguishing media	Added
5.2	Fire hazard	Added
5.2	Explosion hazard	Added
5.3	Firefighting instructions	Added
6.1	Emergency procedures	Added
6.1	Protective equipment	Added
6.1	General measures	Added
6.3	For containment	Added
7.1	Additional hazards when processed	Added
7.2	Technical measures	Added

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Indication of changes		
Section	Changed item	Comments
7.2	Packaging materials	Added
7.2	Storage conditions	Modified
8.2	Personal protective equipment	Added
9	Flammability	Modified
13.1	Product/Packaging disposal recommendations	Added
13.1	Sewage disposal recommendations	Added
13.1	Additional information	Added
13.1	Regional waste regulation	Added
15.1	REACH Annex XVII	Modified
16	Abbreviations and acronyms	Modified

Abbreviations and acronyms:	
ACGIH	American Conference of Government Industrial Hygienists
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)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
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
Log Kow	Partition coefficient n-octanol/water (Log Kow)

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Abbreviations and acronyms:	
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Full text of H- and EUH-statements:	
Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Corr./Irrit. Not classified	Skin corrosion/irritation Not classified
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H314	Causes severe skin burns and eye damage.

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Full text of H- and EUH-statements:

H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

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

Carc. 1A	H350	Calculation method
Aquatic Chronic 3	H412	Calculation method

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.