

参考資料 3: “Study on collecting information on substances with the view to analyse health, socio-economic and environmental impacts in connection with possible amendments of Directive 98/24/EC (Chemical Agents) and Directive 2009/148/EC (Asbestos), Final report for asbestos”(指令 98/24/EC (化学物質) 及び指令 2009/148/EC (アスベスト) の改正案に関する健康、社会経済及び環境への影響を分析するための物質に関する情報収集に関する研究、アスベストに関する最終報告書 (2021 年 9 月完成))中の“4.1 Existing national limits for asbestos” (現に存在する国別のアスベストのばく露限界値) に掲載されているばく露限界値

Table 4.1 OELs (fibres/cm³, 8-h TWA) and STELs (fibres/cm³, 15 min) in EU Member States and selected non-EU countries for asbestos† (status: 28.06.2021)

Country	OEL fibres/cm ³	Specification of OEL	STEL fibres/cm ³	Specification of STEL
Austria ²	0.1 ^{†*}	-F; K1	-	
Belgium ^{1,3,29}	0.1	-F; K Asbestos fibres of the chrysotile type and amphibolic asbestos fibres, respectively, should not exceed this value	-	
Bulgaria ^{4,28}	0.1	-F	-	
Croatia ^{5,28}	0.1	-K1	-	
Cyprus	0.1	-F	-	
Czech Republic ⁶	0.1†	-F	-	
Denmark ^{7,28}	0.1	-F; K	0.2†	-F; K
Estonia ⁸	0.1	-K	-	
Finland ^{1,9,29}	0.1 (R)	-K1	-	
France ^{1,10,29}	0.01	-F Measured by TEM and include thus 'thin asbestos fibres'.	-	
Germany ^{1,11,28,29}	0.1† [§] 0.01 [§]	-F; K1 -F; K1	0.8 [§]	-K1
Greece	0.1	no data	-	
Hungary ^{1,12,28,29}	0.1	-K1	-	
Ireland ^{1,13,29}	0.1	-K1	-	
Italy ^{1,14,29}	0.1	-F	-	
Latvia ^{1,15,29}	0.1	-F	-	
Lithuania ¹⁶	0.1 (R)	-F, K	-	
Luxembourg ^{17,28}	0.1	-K1	-	
Malta ¹⁸	0.1	no data	-	
Netherlands ^{1,19,29}	0.002	Asbestos fibres of the chrysotile type and amphibolic asbestos fibres, respectively, should not exceed this value	-	

Country	OEL fibres/cm ³	Specification of OEL	STEL fibres/cm ³	Specification of STEL
Poland ²⁰	0.1	-F	-	
Portugal ²¹	0.1	-F	-	
Romania ²²	0.1	-F; K1	-	
Slovakia ²³	0.1	-K1	-	
Slovenia ²⁴	0.1	-F	-	
Spain ^{1,25,29}	0.1	-K1	-	
Sweden ^{1,26,29}	0.1	-F; K	-	
European Union ^{1,28,29}	0.1	-F	-	

Non-EU countries				
Australia ³⁰	0.1 (R)	-all fibrous forms; F; K1	-	
Brazil ³¹	no data identified		-	
Canada, Ontario ^{1,32}	0.1 (R)	-all fibrous forms; fibres length > 5 µm; aspect ratio ≥3:1	-	
Canada, Québec ^{1,33}	1 (R)	-actinolite, anthophyllite, chrysotile, tremolite; fibres: length > 5 µm; aspect ratio ≥3:1; K1	5 (R)	-actinolite, anthophyllite, chrysotile, tremolite; fibres: length > 5 µm; aspect ratio ≥3:1; K1
	0.2 (R)	-amosite, crocidolite; fibres length > 5 µm; aspect ratio ≥3:1; K1	1 (R)	-amosite, crocidolite; fibres length > 5 µm; aspect ratio ≥3:1; K1
China ¹	0.8 (I)		-	
India ³⁴	0.5	-amosite		
	1.0	-chrysotile	-	
Japan ^{1,35}	0.2	-crocidolite		
	0.15	-fibres longer than 5 µm	-	
Japan - JSOH ^{1,36}	0.03* 0.003**	- except chrysotile; fibres length > 5 µm; aspect ratio ≥3:1; K		
	0.15* 0.015**	-chrysotile, fibres length > 5 µm; aspect ratio ≥3:1; K	-	
Norway ^{1,37}	0.1†	-all forms; K	-	
Russia ³⁸	0.1 (R)	-amphibole group (e.g., crocidolite, amosite, anthophyllite, tremolite); with an average concentration > 0.01 F/cm ³ ; K		
	0.5 (R)	-amphibole group (e.g., crocidolite, amosite, anthophyllite, tremolite); with an average concentration < 0.01 F/cm ³ ; K	-	
South Korea ³⁹	0.1	-all forms; K1	-	
Switzerland ^{1,40}	0.01	-F; K1	-	
Turkey ⁴¹	0.1			
United Kingdom ^{1,27,29}	0.1	-all fibrous forms; 4 h	0.6	-all fibrous forms, 10 min

Country	OEL fibres/cm ³	Specification of OEL	STEL fibres/cm ³	Specification of STEL
USA, ACGIH ³⁹	0.1	-all forms; K1	-	
USA, NIOSH ^{1,29,40}	0.1	-fibres length > 5 µm; aspect ratio ≥3:1; 100 min; K	-	
USA, OSHA ⁴¹	0.1	-fibres length > 5 µm; aspect ratio ≥3:1; K	-	

Notes:

‡ for asbestos as well as actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite

(R) = respirable fraction/fibres

(I) = inhalable fraction/fibres

K = carcinogenicity notation assigned

K1 = assigned as Carc. Category 1A or 1B

- no value available

F = fibres length > 5 µm, diameter < 3 µm, aspect ratio ≥3:1

TRK value ("Technische Richtkonzentration", Technical Guidance Concentrations), based on technical feasibility

§ Workplace exposure concentration corresponding to the proposed tolerable cancer risk 4:1,000

\$ Workplace exposure concentration corresponding to the proposed preliminary acceptable cancer risk 4:100,000

+ Reference value corresponding to an individual excess lifetime risk of cancer 10^{-3}

++ Reference value corresponding to an individual excess lifetime risk of cancer 10^{-4}

* Sources reported different OELs/STELs and thereby deviated from the OELs/STELs listed in the national OEL list. The discrepancy was noted for the following countries:

For Austria, GESTIS database¹ and ECHA²⁹ reported an OEL of 0.25 fibres/cm³ and a STELs of 1 fibres/cm³

For Denmark, GESTIS database¹ reported an OEL and STEL of 0.3 F/cm³ as ceiling limit

Sources:

- 1: Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA) GESTIS – International Limit Values. Available at: <http://limitvalue.ifa.dguv.de/>, accessed on 30.11.2020
- 2: Austria (2020) Grenzwerteverordnung 2020 – GKV 2020. Available at: <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20001418>, accessed on 16.12.2020
- 3: Belgium (2020) A. Lijst van de grenswaarden voor blootstelling aan chemische agentia. Available at: <https://werk.belgie.be/sites/default/files/content/documents/Welzijn%20op%20het%20werk/grenswaardentabel.pdf>, accessed on 16.12.2020
- 4: Bulgaria (2020) list of limit values Available at: <https://www.lex.bg/laws/ldoc/2135477597>; carcinogenic/mutagenic/reprotoxic substances: <https://www.lex.bg/bg/mobile/ldoc/2135473243>, accessed on 16.12.2020
- 5: Croatia (2018) Nařizení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci. Available at: https://narodne-novine.nn.hr/clanci/sluzbeni/2018_10_91_1774.html, accessed on 16.12.2020
- 6: Czech Republic (2020) List of limit values. Available at: <https://www.tzb-info.cz/pravni-predpisy/narizeni-vlady-c-361-2007-sb-kterym-se-stanovi-podminky-ochrany-zdravi-pri-praci>, accessed on 16.12.2020
- 7: Denmark (2020) List of limit values. Available at: <https://www.retsinformation.dk/eli/lta/2020/698>, accessed on 16.12.2020
- 8: Estonia List of limit values. Available at: https://www.riigiteataja.ee/akt-ilisa/1060/3201/8009/16m_lisa.pdf# (2018) <https://www.riigiteataja.ee/akt/106032018009>, accessed on 16.12.2020
- 9: Finland (2020) List of limit values. Available at: <https://julkaisut.valtioneuvosto.fi/handle/10024/162457>, accessed on 16.12.2020
- 10: France (2016) List of limit values. Available at: <https://www.inrs.fr/media.html?refINRS=ED%20984>, accessed on 16.12.2020.
- 11: Germany (2019) TRGS 910 <https://www.baua.de/DE/Angebote/Rechtstexte-und-Technische-Regeln/Regelwerk/TRGS/TRGS-910.html>; List of carcinogenic/mutagenic/reprotoxic substances: <https://publikationen.dguv.de/forschung/ifa/allgemeine-informationen/3517/liste-der-krebserzeugenden-keimzellmutagenen-und-reproduktionstoxischen-stoffe-kmr-stoffe>, accessed on 16.12.2020
- 12: Hungary (2020) List of limit values. Available at: <https://net.jogtar.hu/jogszabaly?docid=a2000005.itm>, accessed on 16.12.2020
- 13: Ireland (2020) Health and Safety Authority Code of Practice. Available at: https://www.hsa.ie/eng/publications_and_forms/publications/codes_of_practice/chemical_agents_cop_2020.pdf, accessed on 16.12.2020
- 14: Italy (2020) List of limit values. Available at: <https://www.ispettorato.gov.it/it-it/strumenti-e-servizi/Documents/TU%2081-08%20-%20Ed.%20Novembre%202020.pdf>, accessed on 16.12.2020
- 15: Latvia (2020) List of limit values. Available at: <https://likumi.lv/doc.php?id=157382&from=off>, accessed on 16.12.2020
- 16: Lithuania (2018) List of limit values. Available at: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/f5030cc06fbd11e8a76a9c274644efa9> (2011) <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.405920?jfwid=-19qec2s1fi>, accessed on 16.12.2020

- 17: Luxembourg (2020) List of limit values. Available at: (2016) <http://data.legilux.public.lu/file/eli-etat-leg-memorial-2016-235-fr-pdf.pdf> (2018) <http://legilux.public.lu/eli/etat/leg/rgd/2018/07/20/a684/jo> (2020) <http://legilux.public.lu/eli/etat/leg/rgd/2020/01/24/a37/jo>, accessed on 16.12.2020
- 18: Malta (2018) List of limit values. Available at: <https://legislation.mt/eli/sl/424.24/eng/pdf>, accessed on 16.12.2020
- 19: Netherlands (2020) List of limit values. Available at: <https://wetten.overheid.nl/BWBR0008498/2020-12-02/0/Hoofdstuk4/Afdeling5/Paragraaf3/Artikel4.46/informatie>, accessed on 16.12.2020
- 20: Poland (2018) List of limit values. Available at: <http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180001286> (2020) <http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200000061>, accessed on 17.12.2020
- 21: Portugal (2007) Available at: <https://dre.pt/pesquisa/-/search/636752/details/maximized>, accessed on 17.12.2020
- 22: Romania (2020) List of limit values. Available at: <http://legislatie.just.ro/Public/DetaliuDocument/222984>, accessed on 17.12.2020
- 23: Slovakia (2020) List of limit values. Available at: <http://www.epi.sk/zz/2006-355> carcinogenic/mutagenic/reprotoxic substances: <http://www.epi.sk/zz/2006-356>, accessed on 17.12.2020
- 24: Slovenia (2018) List of limit values. Available at: <https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2018-01-3783?sop=2018-01-3783>, accessed on 17.12.2020
- 25: Spain (2019) List of limit values. Available at: <https://www.insst.es/documentos/94886/188493/L%C3%ADmites+de+exposici%C3%B3n+profesional+para+agentes+qu%C3%ADmicos+2019/7b0b9079-d6b5-4a66-9fac-5ebf4e4d83d1>, accessed on 17.12.2020
- 26: Sweden Hygieniska gränsvärden AFS 2018:1. Available at: <https://www.av.se/globalassets/filer/publikationer/foreskrifter/hygieniska-gransvarden-afs-2018-1.pdf>; Hygieniska gränsvärden AFS 2020:6 Available at: <https://www.av.se/globalassets/filer/publikationer/foreskrifter/andringsforeskrift/afs-2020-6.pdf>, accessed on 17.12.2020
- 27: United Kingdom (2020) List of limit values. Available at: <https://www.hse.gov.uk/pubns/priced/eh40.pdf> and <https://www.hse.gov.uk/asbestos/regulations.htm>, accessed on 17.12.2020 and 26.11.2020
- 28: EU Directive 2009/148/EC of the European Parliament and of the Council of 30 November 2009 on the protection of workers from the risks related to exposure to asbestos at work (Text with EEA relevance). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32009L0148>, accessed on 16.12.2020
- 29: ECHA, European Chemicals Agency (2021) Scientific report for evaluation of limit values for asbestos at the workplace. 1 February 2021. European Chemicals Agency (ECHA), Helsinki, Finland. Available at: <https://echa.europa.eu/documents/10162/d5f8d584-5e7d-bc97-3a98-4e9a39715f41>, accessed on 08.02.2021

- 30: Australia (2019) List of limit values. Available at: <https://www.safeworkaustralia.gov.au/system/files/documents/1912/workplace-exposure-standards-airborne-contaminants.pdf>, accessed on 18.12.2020
- 31: Brazil List of limit values. Available at: http://www.guiatrabalhista.com.br/legislacao/nr/nr15_anexoXI.htm, accessed on 18.12.2020
- 32: Canada, Ontario (2020) List of limit values. Available at: <https://www.ontario.ca/laws/regulation/900833>, accessed on 18.12.2020
- 33: Canada, Québec (2020) List of limit values. Available at: <http://legisquebec.gouv.qc.ca/en/show-doc/cr/S-2.1,%20r.%2013>, accessed on 18.12.2020
- 34: India (2020) List of limit values. Available at: <https://dglasli.gov.in/book-page/permmissible-levels-certain-chemical-substancesin-work-environment>, accessed on 18.12.2020
- 35: Japan (2020) List of limit values. Available at: https://www.nite.go.jp/en/chem/chrip/chrip_search/intSrh-SpcLst?slIdxNm=&slScNm=RJ_04_061&slScCtNm=&slScRgnNm=<CatFl=&slMdDplt=0<PgCt=200&stMd, accessed on 18.12.2020
- 36: Japan - JOSH (2020) List of limit values. Available at: <https://www.sanei.or.jp/images/contents/310/OEL.pdf>, accessed on 18.12.2020
- 37: Norway (2021) List of limit values. Available at: <https://www.arbeidstilsynet.no/globalassets/regelverk-spder/forskrift-om-tiltaks--og-grenseverdier>, accessed on 28.06.2021
- 38: Russia (2021) List of limit values. Available at: <http://publication.pravo.gov.ru/Document/View/0001202102030022?index=21&rangeSize=1>, accessed on 28.06.2021
- 39: South Korea (2020) List of limit values. Available at: <https://www.moel.go.kr/skin/doc.html?fn=2020011415460202ae79b648784733aac25448f202f783.hwp&rs=/viewer/BBS/2020/>, accessed on 18.12.2020
- 40: Switzerland (2019) List of limit values. Available at: <https://www.suva.ch/de-CH/material/Richtlinien-Gesetzestexte/erlaeuterungen-zu-den-grenzwerten>, accessed on 18.12.2020
- 41: Turkey (2013) List of limit values. Available at: <https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/107861/133007/F1509677780/TUR107861%20Tur.pdf>, accessed on 28.06.2021
- 42: USA, ACGIH, American Conference of Governmental Industrial Hygienists (2020), TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
- 43: USA, NIOSH (2020) List of limit values. Available at: <https://www.cdc.gov/niosh/index.htm>, accessed on 18.12.2020
- 44: USA, OSHA (2020) List of limit values. Available at: <https://www.osha.gov/dsg/annotated-pels/tablez-1.html>, accessed on 18.12.2020