European Agency for Safety and Health at Work

Overview of biomonitoring practices in the EU Member States and Norway

Report

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Table of Contents

Executive summary

This report provides a non-exhaustive overview of practices regarding occupational biological monitoring (biomonitoring) in the EU Member States and Norway.

A questionnaire was developed that covered general practices on occupational biomonitoring, including the circumstances triggering biomonitoring, the use of and requirements on laboratories carrying out biomonitoring analyses, the training of persons carrying out biomonitoring, and national inspection practices on biomonitoring.

The questionnaire was distributed to EU-OSHA's Focal Points in each of the Member States and Norway, who were then responsible for gathering the information collected in their respective countries. This was done during the summer of 2022.

Twenty-four countries (23 Member States and Norway) responded to the questionnaire. The results show that practices do not vary substantially among countries, although some differences can be observed.

The questionnaire focused on substances other than lead and its inorganic compounds. Lead and its inorganic compounds are the substance group for which EU legislation exists[1] and EU Biological Limit Values (BLVs) have been established and must be incorporated in the national legislation of EU Member States.

Most countries have legal criteria for the application of biomonitoring. In many countries, biomonitoring is undertaken following a risk assessment and/or the recommendation of an occupational physician. This recommendation is part of general health surveillance rather than routine biomonitoring. In most countries, specific training is required to carry out biomonitoring.

Most countries have national laboratories to analyse substances in biomonitoring samples, and nearly all have accredited laboratories, with some participating in proficiency testing schemes. Some countries send the biomonitoring samples to be analysed abroad.

All countries reported that individual biomonitoring results are treated as personal data under the EU General Data Protection Regulation (GDPR), and some countries reported that they have specific legislation, guidance and/or codes of ethics for the health professionals or persons managing biomonitoring programmes on the management of the sensitive data generated by biomonitoring.

In most countries, occupational physicians carry out biomonitoring inspections, with some countries also using labour inspectors for this purpose. In most countries, these occupational physicians are contracted and are not part of the labour inspectorate.

[1] Directive (EU) 2024/869 of the European Parliament and of the Council of 13 March 2024 amending Directive 2004/37/EC of the European Parliament and of the Council and Council Directive 98/24/EC as regards the limit values for lead and its inorganic compounds and for diisocyanates

1 Introduction and objectives

This report provides an overview of practices regarding occupational biological monitoring (biomonitoring) in 23 EU Member States and Norway.

Biomonitoring is the measurement of exposure to substances or their metabolites (biomarkers of exposure), or of biological responses induced by these substances or their metabolites (biomarkers of effect), such as proteins present in human tissues or fluids, for example in urine or blood.

In certain circumstances, biomonitoring can be a useful way to assess and control exposure to chemical substances in the workplace as it accounts for exposure through all routes and, in the case of substances that bioaccumulate in human tissues, can contribute to the assessment of long-term exposure.

This report refers to general practices in occupational biomonitoring, although some substances that could benefit from biomonitoring are addressed. Lead and its inorganic compounds are not specifically included as there were already legal requirements for the biomonitoring of lead and its inorganic compounds in place at the time the data collection for this report was carried out in 2022. At that time, lead and its inorganic compounds were addressed in the EU Chemical Agents Directive[2]. Following the extension of the scope of the Carcinogens and Mutagens Directive to also cover reprotoxic substances, lead and its inorganic compounds are currently addressed in Directive 2004/37/EC[3].

2 Methodology

The information presented in this report was gathered through a questionnaire on biomonitoring practices sent to EU-OSHA's Focal Points in each of the Member States and Norway. Twenty-three of the 27 EU Member States, together with Norway, responded to the questionnaire.

The questionnaire asked about general practices on the following aspects of biomonitoring:

- the government bodies responsible for occupational biomonitoring;
- the use of biomonitoring for assessing worker exposure to specific substances;
- national guidance on biomonitoring for specific substances where biomonitoring would be beneficial (acrylonitrile, nickel, mercury and MOCA (4,4′-methylene-bis (2-chloroaniline)), as well as cobalt and solvents;
- requirements for persons carrying out biomonitoring;
- worker consent;
- inspection practices that include biomonitoring results; and
- analytical practices.

3 General criteria for occupational biomonitoring

This section summarises the information gathered in the questionnaire on the criteria for occupational biomonitoring in the EU Member States and Norway. It includes details of the circumstances that trigger biomonitoring in the responding countries, and of the government bodies responsible for occupational biomonitoring legislation.

[2] Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (CAD)

[3] Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004 on the protection of workers from the risks related to exposure to carcinogens, mutagens or reprotoxic substances at work

3.1 Government bodies responsible for occupational biomonitoring legislation

The government body responsible for worker biomonitoring legislation was in most responding countries the Ministry of Labour or equivalent but there was some variation with the involvement of the Ministry of Health and Ministry of Agriculture in some countries (Table 1).

Table 1: Legal criteria for biomonitoring

Country*	Government body responsible for occupational biomonitoring legislation
BE	Federal Public Service Employment, Labour and Social Dialogue
BG	Ministry of Labour and Social Policy
CZ	Ministry of Health of the Czech Republic
DK	Danish Working Environment Authority
DE	Federal Ministry for Labour and Social Affairs
EE	Ministry of Social Affairs
IE	Health and Safety Authority[4,5]
EL	Ministry of Labour and Social Security; Labour Inspectorate
ES	Ministry of Health
FR	Ministry of Labour; Ministry of Agriculture
HR	Ministry of Labour, Pension System, Family and Social Policy; Ministry of Health; Ministry of Agriculture, Forestry and Fishery
IT	Ministry of Labour and Social Policies
CY	Ministry of Labour, Welfare and Social Insurance

[4] The Health and Safety Authority (HSA) is an agency of the Department of Enterprise, Trade and Employment.

[5] In Ireland, the Workplace Relations Commission Inspection Services monitor employers' compliance with employment rights legislation, including unfair dismissal.

Country*	Government body responsible for occupational biomonitoring legislation
HU	Ministry for Innovation and Technology; Ministry of the Interior – National Center for Public Health and Pharmacy
LV	Ministry of Welfare
LT	Ministry of Social Security and Labour; Ministry of Health
NL	Ministry of Social Affairs and Employment
AT	Labour Inspectorate
PL	Ministry of Health
PT	Ministry of Labour, Solidarity and Social Security
SI	Ministry of Labour, Family, Social Affairs and Equal Opportunities; Ministry of Health
SK	Ministry of Health
NO	Labour Inspection Authority
FI	Ministry of Social Affairs and Health

*Kingdom of Belgium BE, Republic of Bulgaria BG, Czech Republic CZ, Kingdom of Denmark DK, Federal Republic of Germany DE, Republic of Estonia EE, Ireland IE, Hellenic Republic EL, Kingdom of Spain ES, French Republic FR, Republic of Croatia HR, Italian Republic IT, Republic of Cyprus CY, Republic of Latvia LV, Republic of Lithuania LT, Hungary HU, Kingdom of the Netherlands NL, Republic of Austria AT, Republic of Poland PL, Portuguese Republic PT, Republic of Slovenia SI, Slovak Republic SK, Republic of Finland FI, Kingdom of Norway NO

3.2 Criteria for biomonitoring

By far the most prevalent criterion for biomonitoring (in addition to the existence of a binding Biological Limit Value (BLV)) is when it considered necessary by a health professional. In some countries, where a health professional deems biomonitoring necessary, there is a legal requirement for the employer to offer it. Some countries also have a legal requirement for workers to participate in biomonitoring programmes (Table 2).

Table 2: Criteria for biomonitoring

Criteria for the application of biomonitoring	Number of countries
Where considered necessary by a health professional	13
Where prevention measures may be inadequate	5
Where air monitoring may be inadequate	5
Where a chemical, substance or agent can bioaccumulate in the body	5
Where skin absorption is likely	5
Where ingestion is likely	4
Infrequent tasks that may lead to higher exposure (e.g. cleaning, maintenance)	10

Other criteria mentioned by the respondent countries for the application of biomonitoring:

- Where workers' protection relies on the use of personal protective equipment

3.3 Invasive biomonitoring

Respondents were asked who carried out invasive biomonitoring such as blood sampling. In most cases, an occupational physician or registered medical doctor carries out invasive biomonitoring, but in some cases, invasive biomonitoring may also be carried out by an occupational or registered nurse (Table 3).

Table 3: Details of the persons carrying out invasive biomonitoring

Persons carrying out invasive biomonitoring	Number of countries
Occupational physician	17
Registered medical doctor	11
Occupational nurse	10
Registered nurse	10
Phlebotomist	3

Some countries provided additional comments:

- Legislation does not specify who conducts invasive biomonitoring. However, there is a legal requirement that appropriate health surveillance be made available under the responsibility of an occupational healthcare professional.
- Biomonitoring is carried out on the instructions of an occupational physician by an authorised body in accordance with the provisions of standard NF EN ISO 15189.[6]
- There are no specific requirements for occupational biomonitoring. Samples, for this reason, are gathered by applying general sampling procedures (such as general blood tests).
- The employer contracts a registered medical facility for medical tests, including biomonitoring.

3.4 Worker consent

Seventeen countries have an ethical or legal requirement for workers to consent to providing biomonitoring samples, whereas seven countries do not require such consent.

In some countries, workers may face no direct consequences for declining biomonitoring, and occupational physicians have no obligation to inform the employer if a worker refuses. In other countries, however, workers may not be permitted to work with the substance and, in some cases, may be suspended without pay or dismissed.

In some countries, where workers decline biomonitoring, each worker request is studied on a case-by-case basis and exposure, and health risk are assessed in other ways.

[6] NF EN ISO 15189. Medical laboratories - Requirements for quality and competence. ISO 15189:2012 specifies requirements for quality and competence in medical laboratories. It can be used by medical laboratories in developing their quality management systems and assessing their own competence. It can also be used for confirming or recognising the competence of medical laboratories by laboratory customers, regulating authorities and accreditation bodies.

4 National guidance for occupational biomonitoring

Fifteen out of the 24 respondent countries have national guidance on biological biomonitoring. The guidance specifies in what situations biomonitoring is a legal requirement. Some countries also have specific guidance for certain substances, usually those for which the country has binding BLVs. In addition, some countries include other aspects, such as a list of specific substances and tasks (e.g. cleaning and maintenance) where biomonitoring is advisable.

Table 4 lists the countries with guidance for the specific substances included in the questionnaire.

Table 4: Countries with guidance for the specific substances included in the questionnaire

Substance	Number of countries
Lead	9
Benzene	4
Acrylonitrile	1
Cobalt	4
Nickel	2
Mercury	4
Solvents	4
MOCA (4,4′-methylene-bis (2-chloroaniline)	2

In addition to the substances included in Table 4:

- One country has guidance for 39 other substances[7], all having indicative BLVs.
- One country has guidance for 51 other substances[8].

[7] Acetone, aniline, arsenic, benzene, buta-1,3-diene, butan-2-one (methyl ethyl ketone), chlorobenzene, cyclophosphamide, N,N-dimethylformamide, carbon disulphide, 1, 2-epoxypropane (ethylene oxide), 2-ethoxyethanol, ethylbenzene, phenol, fluorides, 2-furaldehyde, hexachlorobenzene, n-hexane, cadmium and its inorganic compounds, xylene – mixture of isomers, cumene, methanol, 2-methoxyethanol, 1-methyl-2-pyrrolidone, nitrobenzene, 2-ethylhexyl acetate, 2-methoxyethyl acetate, organophosphate pesticides, styrene, methemoglobin-producing substances, tetrachloroethene, carbon monoxide, toluene, trichloroethene, triethylamine, trimethylbenzene

[8] 2-Butoxyethyl acetate, 2-ethoxyethyl acetate, acetone, hydrofluoric acid, coal tar, aniline, o-anisidine, p-anisidine, arsenic and inorganic compounds, asphalt, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, 2-butoxyethanol, cadmium and compounds, carbaryl carbofuran, chlorobenzene, chlorpyrifos, coumaphos, chrysene, crufomate, demeton, demeton-S-methyl, Diazinon, 2-N-dibutylaminoethanol, dichloromethane, dichlorvos, dicrotophos, N,N-dimethylacetamide, dimethylaniline, dimethylformamide, propylene glycol dinitrate, dinitrobenzene, dinitrotoluene, dioxathion, disulfoton, EPN, styrene, Ethion, ethylbenzene, 2-ethoxyethanol, fenamifos, phenol, fluorides, furfural, n-hexane, methemoglobin inducers, mercury, methanol, methyl chloroform

- One country has guidance for chromium, cadmium, arsenic, manganese, fluorine, carbon disulphide, nitrobenzene and aniline, in addition to those substances listed in Table 4.

The bodies responsible for issuing guidance vary across countries. In some cases, responsibility lies with the relevant ministries (most commonly labour and social affairs, and/or also health), while in others, it lies with national institutes for safety and health or national committees, sometimes in cooperation with occupational medicine committees or associations.

The guidance is aimed at employers, workers and their representatives; those responsible for establishing and managing biomonitoring systems; those carrying out biomonitoring (e.g. occupational health services); and occupational physicians.

5 Biological Limit Values

All countries that have guidance for the specific substances included in the questionnaire have binding BLVs in place (Table 5).

Table 5: Countries with binding Biological Limit Values for the substances included in the questionnaire

Substance	Number of countries with binding BLVs
Benzene	4
Acrylonitrile	1
Cobalt	4
Nickel	2
Mercury	4
Solvents	4
MOCA	2

6 Analytical laboratories

All countries except two have national laboratories to analyse substances or substance groups. In nearly all countries, the laboratories are accredited for the analysis of the specific substances.

Most countries also participate in proficiency testing schemes, primarily for the analysis of lead, but also for the analysis of other substances such as cobalt, nickel, mercury and benzene. A few countries also participate in schemes for the analysis of solvents, acrylonitrile and MOCA.

Some countries also reported that biomonitoring samples are analysed in accredited laboratories abroad.

In most countries, training is a legal requirement for persons responsible for biomonitoring. The training covers sampling methodology, sample analysis and interpretation of results.

7 Inspection practices

Half of the countries include biomonitoring in enterprise inspection. However, the number of inspections differs considerably between countries, ranging from none to 3,979 in one country in 2019.

In most countries, inspections are carried out by occupational physicians, and in some cases by labour inspectors. Although only a few countries reported having occupational physicians as part of the labour inspectorate staff, occupational physicians are contracted for this purpose.

One country reported that inspections are carried out for specific sectors and tasks. These include industries such as the manufacture of batteries, rubber products, dyes and pigments, while the tasks include lacquering, spray painting and lead acid battery recycling.

8 Discussion

Biomonitoring is a useful tool for evaluating worker exposure to hazardous substances via all exposure routes and also when substances bioaccumulate in the body. The findings of this overview indicate that, across the responding EU Member States and Norway, occupational biomonitoring is most commonly implemented as a targeted measure within broader occupational health surveillance systems, rather than as a routine stand-alone exposure assessment tool. In particular, the primary trigger for biomonitoring is a decision by an occupational physician, frequently following health surveillance.

The overview shows various considerations for the application of biomonitoring (e.g. employer obligations to offer biomonitoring, circumstances in which workers are required to participate, consequences for workers who refuse biomonitoring, and situations where biomonitoring is linked to specific tasks), suggesting that its practical role is shaped by national legislation and guidance.

National guidance can be an important mechanism for promoting consistency and transparency in practice. However, several countries do not have guidance on biomonitoring, while others have specific guidance for certain substances, usually those with a binding BLV. An uneven coverage may contribute to differences in the quality of the results and the circumstances when biomonitoring is carried out. For consistency, guidance should clearly link biomonitoring to workplace risk assessment outcomes, specify appropriate biomarkers and sampling and analytical methods, and describe follow-up actions when biomonitoring results exceed binding or indicative limit values.

The findings on analytical laboratories suggest that most respondent countries have access to national laboratory capacity, and that accreditation and participation in proficiency testing are common. This is an enabling factor for reliable biomonitoring programmes, because comparability and analytical quality are prerequisites for meaningful interpretation and for building confidence in the results among employers, workers and practitioners. The reported practice of sending samples abroad in some cases also highlights the importance of clear requirements for sample storage and transportation, chain of custody, data protection and consistent reporting formats, to ensure that results are valid and accurate.

Inspection practices show substantial differences among countries. While around half of the respondent countries reported that biomonitoring may be included in inspection activities, the reported inspection volumes vary widely, and in several countries, occupational physicians appear to contribute via contracted arrangements rather than being embedded within labour inspectorates. This organisational model may affect the extent to which biomonitoring and health surveillance are systematically applied. Where biomonitoring is not routinely examined by inspectorates, the incentive for employers to

implement it consistently may be reduced, and opportunities to use biomonitoring results to verify the effectiveness of prevention measures may be missed.

The overview presented provides a general picture of occupational biomonitoring practices but does not allow a detailed comparison of national systems. The information is based on self-reported questionnaire responses and focuses on whether approaches exist rather than on how frequently biomonitoring is used in practice, how results are interpreted in specific sectors, or what proportion of workers are covered. A more in-depth analysis would be needed to examine how criteria, guidance, laboratory capacity and inspection models interact in each country, and to identify which combinations are most effective in driving preventive action. Nevertheless, the findings suggest that strengthening practical guidance, ensuring sustained laboratory quality assurance, and clarifying the role of inspections in verifying biomonitoring-related duties could help support more consistent and prevention-oriented use of biomonitoring across the EU Member States and Norway.

Appendix 1: Links to legislation on occupational biomonitoring

Country	Links to legislation
BE	Code of Well-being at Work: Book VI, Title 1 (Chemical Agents), relevant sections: Art. VI.1-38
BG	Ordinance No 13 on protection of workers from the risks related to chemical agents at work (p.1, Art. 1 and p.58 – Appendix 2)
CZ	Government Regulation No 361/2007 Coll Decree (*vyhláška*) of the Ministry of Health No. 432/2003, (Annex 2)[9]
DK	Pursuant to Working Environment Act, cf. Legislative Decree No 1072 and Public Administration Act, cf. Legislative Decree No 433, BEK No 1793: Order on work with substances and materials (chemical agents) (Appendix 1)
DE	Ordinance on occupational health care (ArbMedVV) Section 6, Duties of the doctor BAuA - Technical occupational safety (including technical rules) - TRGS 903 Biological Limit Values (BGW) - Federal Institute for Occupational Safety and Health GefStoffV - Ordinance on protection against hazardous substances*) (gesetze-im-internet.de)
EE	Government of the Republic Regulation No 193, Health, and safety requirements for the use of lead and its ionic compounds Section 11(1) of Government of the Republic Regulation No 105, Occupational health and safety requirements for the use of hazardous chemicals and materials containing hazardous chemicals and occupational exposure limit values for chemical hazards in the working environment
IE	Safety, Health and Welfare at Work (Chemical Agents) (Amendment) Regulations 2021, S.I. No. 231/2021 The Safety, Health and Welfare at Work (Carcinogens) Regulations, 2001, S.I. No. 78/2001 Safety, Health and Welfare at Work (Carcinogens) (Amendment) Regulations 2015, S.I. No. 622 of 2015 Safety, Health and Welfare at Work (Carcinogens) (Amendment) Regulations 2019, S.I. No. 592 of 2019
EL	Presidential decree (PD) 98/1987, as it is amended by PD 338/2001 (article 12), PD 338/2001 (article 10, paragraph 5), PD 399/1994 (article 14, paragraph 6), and Annex II {paragraph 2c and 3 (as it is added by PD 127/2000 (article 2, paragraph 5c))}.

[9] Decree laying down the conditions for classifying work into categories, limit values for indicators of biological exposure tests, conditions for collecting biological material for carrying out biological exposure tests and the requirements for reporting work with asbestos and biological agents.

Country	Links to legislation
ES	Royal Decree 374/2001, of 6 April 2001, on the protection of the health and safety of workers against risks related to chemical agents at work (Art. 6.8d) Royal Decree 665/1997, of 12 May, on the protection of workers against risks related to exposure to carcinogenic agents during work Royal Decree 374/2001, of 6 April 2001, on the protection of the health and safety of workers against the risks related to chemical agents at work (Art. 6.2 and Art. 6.3 obligation to offer biomonitoring to all workers) Royal Decree 396/2006, of 31 March, establishing the minimum health and safety provisions applicable to work with risk of exposure to asbestos. (Art. 16)
FR	Article R4412-152 of the Labour Code
HR	The Occupational Health and Safety Act (Official Gazette No. 71/14, No. 118/14, No. 96/18) The Ordinance on the protection of workers against exposure to hazardous chemicals at work, exposure limit values and biological limit values (Official Gazette 148/23) OG, No. 91/18 OG, No. 01/21 The Ordinance on jobs with special working conditions (Official Gazette 5/84)
IT	Legislative Decree 81/08, Dangerous substances - Definitions (Art. 222) Attachment XXXIX to Dangerous substances - Chemical Agents section
CY	The Safety and Health at Work (Chemical Agents) Regulations of 2001 to 2021 (R.A.A.299/2021) (Annex II p.2828 referring to biological limit values of lead and measures for the surveillance of workers' health) The Safety and Health and at Work (Health Surveillance) Regulations of 2019 (R.A.A.330/2017). Based on these regulations, Ministerial Ordinances for certain working activities are issued to determine the minimum medical and laboratory examinations needed for the surveillance of workers' health (page 2667, part V)
LV	Regulations of the Cabinet of Ministers No 219: Mandatory health examination procedure (Annex 1, column 8)
LT	Regarding the approval of the provisions on the protection of employees from chemical factors at work and the provisions on the protection of employees from exposure to carcinogens and mutagens at work
HU	No. 5/2020 (II.6/) ITM Decree, 2. 4. § (2), (3), (4); 3. 5. § (4). d) Annex 3 and 4; on the protection of the health and safety of workers exposed to chemical pathogenic factors No. 33/1998 (VI.24) NM Decree, 6. § (1) i), (2), Annex 3, 5. § (2), 5/A. §. 5/B. §, 5/C. §, 5/D. §, 6. §., 7. §. on the medical examination and opinion of occupational, professional, and personal hygiene suitability
NL	Working Conditions Decree (Article 4.1a.2, Article 4.10b) Advisory Framework for Assessment of Bilogical Limit Values | Advisory | Health Council
AT	Consolidated Federal Law: Entire legislation for the Employee Protection Act, 24/11/2022 version (Section 5, 44-59 ASchG) Consolidated Federal Law: Entire legal regulation for regulations on health monitoring at work, 28/10/2025 version (see also Part 11 of part V)

Country	Links to legislation
PL	Regulation of the Minister of Health of 30 December 2004 on occupational health and safety related to the occurrence of chemical agents in the workplace
PT	Ministry of Economy and Employment Decree-Law No. 24/2012, 6 February
SI	Regulations on the protection of workers from risks related to exposure to chemical agents at work (Official Gazette of the Republic of Slovenia, No. 72/21); (Art. 12) Regulations on the protection of workers from the risks of exposure to carcinogenic or mutagenic substances (Official Gazette of the Republic of Slovenia, Nos. 101/05, 43/11 – ZVZD-1, 38/15, 79/19 in 89/22); (Art. 15)
SK	Regulation of the Government of the Slovak Republic No. 355/2006 Coll. on the protection of employees from risks related to exposure to chemical factors at work, as amended - Section 12 (§ 12). (Annex No. 2 lists other substances / substance groups and solvents for which employers must offer biomonitoring) Regulation of the Government of the Slovak Republic No. 356/2006 Coll. on the protection of the health of employees from risks related to exposure to carcinogenic and mutagenic factors at work, as amended - Section 13 (§ 13) Professional guideline of the Ministry of Health of the Slovak Republic on the content of medical preventive examinations in relation to work
FI	Section 47 of the Occupational Safety Act (299/58) of 28 June 1958: Government decision about working with lead
NO	Regulations concerning action and limit values for physical and chemical agents in the working environment and classified biological agents (Chapter 5, Section 5-2) Regulations concerning the performance of work, use of work equipment and related technical requirements (Chapter 2, Section 3-25) Regulations concerning the performance of work, use of work equipment and related technical requirements (Chapter 2, Section 3-26) Act relating to working environment, working hours and employment protection, etc. (Working Environment Act) (Chapter 9, Section 9-4) Regulations concerning Organisation, Management and Employee Participation (Chapter 14)

Appendix 2: Links to biomonitoring guidelines

Country	Guidance links
DK	Fact sheet Metallic lead and lead compounds
DE	Technical occupational safety (including technical rules) – TRGS 903 Biological Limit Values (BGW) – Federal Institute for Occupational Safety and Health
CZ	Decree (*vyhláška*) of the Ministry of Health No. 432/2003 (Annex 2)
IE	Biological Monitoring Guidelines
ES	Occupational Exposure Limits for Chemical Agents in Spain, paragraph 10 Specific health surveillance protocols for workers
FR	Recommendations of good practice for the biological monitoring of occupational exposure to chemical agents (SBEP)
HU	Methodological aid for occupational health doctors, occupational safety specialists and employers for the examination of increased exposure
AT	Consolidated Federal Law: Entire legal regulation for regulations on health monitoring in the workplace, 28/10/2025 version
PL	Regulation of the Minister of Health of 30 December 2004 on occupational health and safety related to the presence of chemical factors in the workplace (PL Dz.U. 2005, No. 11 item 86) Limit values NDS/NDN of factors harmful to health in the work environment
PT	Portuguese Norm NP 1796:2014 - Occupational exposure limits and biological exposure indices to chemical agents. Table 1 - Occupational exposure limits and biological exposure indices to chemical agents (OELs), Law Decree 35/2020.
SI	Practical non-binding guidelines on the protection of the health and safety of workers from risks from exposure to chemical agents at work
SK	Journal of the Ministry of Health of the Republic of Slovakia 2016 (Part 29-38)
FI	Exposure-based occupational health monitoring

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