

Translation of:

Messverfahren zur Bestimmung biologischer Arbeitsstoffe in der Luft am Arbeitsplatz. BGIA leaflet.
Ed.: BGIA – Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung, Sankt Augustin,
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Methods for the measurement of biological agents in workplace atmospheres



Background

On 1 April 1999, the German Ordinance on biological agents (**BioStoffV**) came into force. This cross-sector regulation serves to protect all employees whose tasks involve biological agents.

It covers not only the commercial sector, such as the biotechnical and pharmaceutical industries or the food industry, but also the public sector, including institutes of higher education, the health services, the waste industry, and agriculture and forestry.

A key element in the creation and implementation of a protection concept for cases where employees come into contact with biological agents is the **risk assessment**.

For this purpose, the employer must obtain adequate information. In such cases, it may be useful or even necessary to determine the type of biological agents and their concentration by means of **workplace measurements**.

Problem

A wide **spectrum of biological agents** is encountered in the various fields of activity: various forms of fungi and bacteria and also their various metabolic compounds and decomposition products (such as mycotoxins and endotoxins). Equal variation is found in the concentrations of these substances.

As a result, a **large number of measurement methods** exist, the results of which are generally not comparable.



No limit values with a medical or toxicological basis exist for the contamination of the workplace atmosphere with biological agents. Instead, monitoring values are for example to be employed by which exposure to biological agents can be assessed by **technical** means.

Before such values can reasonably be examined, the measurement methods to be used in the various fields of activity must be harmonized to the greatest possible degree.

Consequence

The issues referred to above were being discussed in the working group "Workplace assessment" appointed by the Committee for Biological Agents (Ausschuss für Biologische Arbeitsstoffe, ABAS) of the German Ministry for Labour and Social Affairs (Bundesministerium für Arbeit und Soziales, BMAS).

The working group supported the **development and validation of standardized measurement methods** for biological agents (e.g. mould fungi, bacteria and endotoxins) in the workplace atmosphere.

A further focus of the working group is the **development of a uniform measurement strategy** by which the concentration of biological agents in workplace atmospheres can be measured and the effectiveness of technical protective measures (e.g. ventilation facilities) can be tested. All measurement methods are published in the BGIA folder "Measurement of hazardous substances".

Measurement methods

Mould fungi

Verfahren zur Bestimmung der Schimmelpilzkonzentration in der Luft am Arbeitsplatz (Method for measurement of the mould fungi concentration in workplace atmospheres), document code 9420, 30th suppl. IV/03, 12 pages

<http://www.bgia-arbeitsmappdigital.de/9420>

Bacteria

Verfahren zur Bestimmung der Bakterienkonzentration in der Luft am Arbeitsplatz (Method for measurement of the bacterial concentration in workplace atmospheres), document code 9430, 32th suppl. IV/04, 24 pages

<http://www.bgia-arbeitsmappdigital.de/9430>

Endotoxins

Verfahren zur Bestimmung der Endotoxinkonzentration in der Luft am Arbeitsplatz (Method for measurement of the endotoxin concentration in workplace atmospheres), document code 9450, 28th suppl. IV/02, 7 pages

<http://www.bgia-arbeitsmappdigital.de/9450>

Measurement strategy

Anwendung von Messverfahren und technischen Kontrollwerten für luftgetragene Biologische Arbeitsstoffe (Application of measurement methods and technical monitoring values for airborne biological agents), document code 9411, 38th suppl. IV/07, 13 pages
<http://www.bia-arbeitsmappedigital.de/9411>

The wording of this chapter of the BGIA folder "Measurement of hazardous substances" corresponds to the TRBA 405.

Sources

BGIA-Arbeitsmappe Messung von Gefahrstoffen (BGIA folder Measurement of hazardous substances)
ISBN 978 3 503 02085 0, ISSN 0936-4544, loose-leaf edition,
Erich Schmidt Verlag, Berlin,
Fax: +49 30 250085-3 05
<http://www.esv.info>

Alternatively

BGIA-Arbeitsmappe digital (BGIA digital folder)
Available over the Internet (subject to charge):
<http://www.bgia-arbeitsmappedigital.de>



Further information

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