IFA
Institut für Arbeitsschutz der
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0005

Focus on IFA's work

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# Respiratory exposure to foreign substances in the atmosphere at hairdressers' workplaces

**Problem**

Between 1986 and 1991, reported cases of suspected diseases of the respiratory tract attributable to occupational exposure rose in the hairdressing sector by a factor of five, from 98 to 503 cases per year.

The causes of these diseases of the respiratory tract were suspected to lie in the high number of foreign substances to which hairdressers are exposed in the workplace atmosphere.

**Activities**

In conjunction with the BG responsible for hairdressers – the Institution for Social Accident Insurance for the health and welfare services – the IFA set up a model workplace.

At this workplace, exposure of employees in the hairdressing sector was measured under realistic but reproducibly varying working conditions as a function of the process, such as bleaching, dyeing or permanent-waving.

**Results and Application**

The results from the series of “bleaching” tests show that the use of a newly developed bleaching product in the form of granulates, or powders – microencapsulated or with oil additives – reduces dust emissions from bleaching powders containing ammonium persulfate, which is regarded as a sensitizer of the respiratory tract. The respiratory tract exposure of the hairdressers is reduced considerably as a result.


Model workplace for hairdressers, set up at the IFA

The agents employed for dyeing and permanent-waving, such as p-phenylene-diamine and thioglycolate, were not detected in the breathing air.

Compliance with the limit values for hydrogen peroxide and ammonia can be expected during the hairdressing tasks under normal capacity utilization in a hairdresser's business.

The results of this project were taken into consideration during revision of the TRGS 530 (technical rules for hazardous substances). Dust-raising bleaching agents may therefore no longer be used, and hairdressing premises must feature adequate ventilation.

Provided a hazard assessment reveals nothing to the contrary, the employer may assume that a fresh-air rate of 100 $m^3$ per hour per employee is adequate.

**Area of Application**

Hairdressing sector, chemical industry (hairdressing agents)

**Additional Information**


- Berges, M.; Kleine, H.: Ermittlung der Exposition gegenüber Gefahrstoffen in der Luft an Friseurarbeitsplätzen. Gefahrstoffe – Reinhaltung der Luft 62 (2002) Nr. 10, S. 405-409


**Expert Assistance**

IFA, Division 3: Hazardous substances: handling – protective measures

German Social Accident Insurance Institution for the health and welfare services, Hamburg

**Literature Requests**

IFA, Central Division


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