GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

DEPARTMENT OF EMPLOYMENT AND LABOUR

NO. R. 283 **31 March 2021**

The Department Employment and Labour gives notice that this notice replace paragraph 75, 82 (a), 84 and 92 in Annexure 3 of the Regulations for Hazardous Chemical agents as published in Notice No. 11263, in Gazette No.669, published on 29 March 2021 with the following:

75. In general, for most agents the main route of entry into the body is by inhalation. The OELs given in these regulations solely relate to exposure by this route.

8.2 The ways in which the constituent agents of a mixed exposure interact vary considerably. Some mixed exposures involve agents that act on different body tissues or organs, or by different toxicological mechanisms, these various effects being independent of each other. Other mixtures will include agents that act on the same organs, or by similar mechanisms, so that the effects reinforce each other and the agents are additive in their effect.

(a) **Synergistic agents**: known cases of synergism and potentiation are considerably less common than the other types of behaviour in mixed exposures. However, they are the most serious in their effects and require the strictest control. They are also the most difficult to assess and wherever there is reason to suspect such interaction, specialist advice should be obtained;

Monitoring mixed exposure

84. Further information on monitoring airborne contaminants is given in paragraphs 55 and 56. The number of components of a mixed exposure for which routine air monitoring is required can be reduced if their relative concentrations can be shown to be constant. This involves the selection of a key or marker, which may be one of the constituents, as a measure of the total contamination. Exposure to the marker is controlled at a level selected so that exposures to all components will be controlled in accordance with the criteria in paragraphs 82(a) and (b). However, if one of the components has been assigned an OEL-ML, the level of the exposure to that agent should always be reduced as far as is reasonably practicable. If this approach is to be used, it should take place under the guidance of suitable specialist advice.

92. An operator works for eight hours during the night shift on a process in which he is intermittently exposed to an agent hazardous to health. The operator's work pattern during the working period should be known and the best available data relating to each period of exposure should be applied in calculating the eight-hour TWA. This data should be based on direct measurement, estimates based on data already available or reasonable assumptions.

Working period	Task	Exposure (mg/m³)
22:00-24:00	Helping in workshop	0,1 (known to be the exposure of full-time group in the workshop)
24:00-01:00	Cleaning elsewhere in factory	0 (assumed)
1:00-04:00	Working in canteen	0 (assumed)
04:00-06:00	Cleaning up after breakdown in workshop	0,21 (assumed)

The eight-hour TWA therefore is:

$$\frac{(0.10\ x) + (0.21\ x\ 2) = (0\ x\ 4)}{8}$$

$= 0.078 Gmg/m^2$