

# ドイツ労働安全衛生研究所(BAuA)のコントロール・バンディングの概要

資料 4-8-5

\*例としてネイルサロンの作業、マニキュア液の主成分を酢酸ブチルとして試行。

## EMKG - Exposure assessment part for liquids



Definition of volatility bands ?				Alternative input of ?	
Band	At normal temperature (~20°C)	Operating temp. (o.t. [°C])	Vapour pressure (kPa at o.t.)	boiling point [°C] and operating temperature [°C]	
Low	boiling point above 150°C	b.p. ≥ 5 x o.t. + 50	< 0.5	124	20
Medium	boiling point between 50 and 150°C	other cases	0.5 - 25		
High	boiling point below 50°C	b.p. ≤ 2 x o.t. + 10	> 25		

Scale of use bands ?	
Band	Description
Small	millilitres up to 1 litre for liquids
Medium	litres ( batch sizes between 1 and 1000 litres for liquids)
Large	cubic metres ( batch sizes of greater than 1 m <sup>3</sup> for liquids)

Short term exposure ?	
Activity < 15 min. during a full 8 h shift?	
Yes	No

Applications on surfaces > 1m <sup>2</sup> ?	
e.g. painting, applying adhesives etc. and more than 1 litre product used per shift?	
Yes	No

Control strategies ?		
Control Approach	Type	Description
1	General ventilation	Good general ventilation and good work practice
2	Engineering control	Local exhaust ventilation (e.g. single point extract, partial enclosure, not complete containment)
3	Containment	Enclosed, but small breaches may be acceptable. Good work practice.

Exposure potential bands (EP)			
Solids - EP band	Use band	Volatility band	Description
1	Small	Low	Millilitres of low volatility liquid
2	Small	Medium or High	Millilitres of medium / high volatility liquid, litres / cubic
	Medium or Large	Low	metres of low volatility liquid
3	Large	Medium	Cubic metres of medium volatility liquid, litres of medium / high volatility liquid
	Medium	Medium or High	
4	Large	High	Cubic metres of high volatility liquid

Predicted exposure ranges: Liquids				
Control Approach	Predicted exposure level for vapour, ppm			
	Solids EP Band 1 (mL of low VP liquid)	Solids EP Band 2 (mL of med. / high VP liquid or L / m <sup>2</sup> of low VP liquid)	Solids EP Band 3 (m <sup>3</sup> of med. VP liquid or L of med. / high VP liquid)	Solids EP Band 4 (m <sup>2</sup> of high VP liquid)
1	< 5	5 - 50	50 - 500	> 500
2	< 0.5	0.5 - 5	5 - 50	5 - 500
3	< 0.05	0.05 - 0.5	0.5 - 5	0.5 - 5

予測ばく露量  
(酢酸ブチルの管理濃度は150ppm)