

BRIDGING RULES

R-phrases

Also the R-phrases determine, which part(s) of the questionnaire will apply

- If R-phrase is only some of the following R21, R24, R27, R38, and/or R43, combinations **R39/24, R39/27, R68/21, R68/21/22, R48/21, R48/21/22**, questions on the inhalation (parameters) are not asked the risk caused by inhalation exposure is low.
- If R-phrase ins only some of the following R20, R23, R26, R37, R42, and/or combinations **R39/23, R39/26, R68/20, R68/20/22, R48/20 and/or R48/20/22**, questions on the dermal exposure (parameters) are not asked the risk caused by dermal exposure is low.
- If R-phrase is only some of the following R22, R25 and/or R65, the software directly announces/concludes: "The substance is dangerous only if ingested. At work this route of exposure is unlikely and therefore, the risks are regarded as low."

Numbers of the questions (see table 3 for bridging rules) See also table 1 of the manuscript for the answer options.

1. Physical state of the chemical
2. Type of the process/how the chemical is used
3. a. Vapour pressure or b. the dust formation of a solid/powder
4. a. Temperature of the process OR b. Spreading of the dust or aerosol
5. Exposure measurements
6. Local ventilation
7. General Ventilation
8. Respiratory (or gas)masks
9. Direct or indirect skin contact with chemical
10. Temperature of the work space and physical strain at the work
11. Protective gloves and clothes
12. Removal of dust and aerosols

For the questions 1 and 2

If 00 or 10: exposure is low for inhalation and dermal route and the software would stop the "flow" of the questionnaire. The level of the risk is low1, independent of the R-phrases

If 01 the questionnaire continues to cover inhalation exposure

If 11 the questionnaire continues to cover inhalation and dermal exposure

Annex table 2. Bridging rules connecting series of answers to certain level of exposure. Inhalation exposure level is not affected by answers to the questions 9-12. Dermal exposure level is not affected by answers to the questions 3-8.

L=low, m=medium, h=high.

(... means: using the software the series of questions is cut and the level of exposures is determined on the basis of answers given. For example when vapour pressure (q3) and temperature (q4) are low the inhalations exposure is low and further questions (q5-8) are not needed. Q9-12 on dermal exposure would be asked.)

Question 2	Questions of the inhalation exposure 3 4 5 6 7 8	Level of the inhalations exposure	Questions of the dermal exposure 9 10 11 12	Level of the dermal exposure
0		L (independent of the R-Phrase)		
1	0 0...	L (independent of the R-Phrase)		
1	0 1 0	L		
1	1 1 1 0 ...	L		
1	1 1 0 0 ...	L		
1	1 1 1 0 0 0	L		
1	1 1 1 0 0 1	L		
1	1 1 1 0 1 0	L		
1	1 1 1 0 1 1	m		
1	1 1 1 1 0 0	m		
1	1 1 1 1 0 1	h		
1	1 1 1 1 1 0	m		
1	1 1 1 1 1 1	h		
1	1 0 1 0 0 0	L		
1	1 0 1 0 0 1	L		
1	1 0 1 0 1 0	L		
1	1 0 1 0 1 1	L		
1	1 0 1 1 0 0	L		
1	1 0 1 1 0 1	m		
1	1 0 1 1 1 0	m		
1	1 0 1 1 1 1	h	1 0 0 0	L
1	0 1 1 0 0 0	L	1 0 0 1	L
1	0 1 1 0 0 1	L	1 1 0 0	L
1	0 1 1 0 1 0	L	1 0 1 0	M
1	0 1 1 0 1 1	m	1 0 1 1	H
1	0 1 1 1 0 0	L	1 1 0 0	L
1	0 1 1 1 0 1	m	1 1 0 1	m
1	0 1 1 1 1 0	m	1 1 1 0	h
1	0 1 1 1 1 1	h	1 1 1 1	h