

DIN EN ISO 16638-1:2020-07 (E)

Radiological protection - Monitoring and internal dosimetry for specific materials - Part 1: Inhalation of uranium compounds (ISO 16638-1:2015)

Contents		Page
European foreword		4
Foreword		5
Introduction		6
1	Scope	7
2	Normative references	8
3	Terms and definitions	8
4	Symbols and abbreviated terms	12
	4.1 Symbols.....	12
	4.2 Abbreviated terms.....	13
5	Purpose and need for monitoring programmes	13
6	General aspects	16
	6.1 Radiological aspects.....	16
	6.2 Chemical toxicity.....	17
7	Reference levels for uranium	18
	7.1 Radiological aspects.....	18
	7.2 Chemical toxicity.....	21
	7.2.1 General.....	21
	7.2.2 Exposure limits.....	21
	7.3 Application of reference levels.....	22
8	Routine monitoring programmes	22
	8.1 General.....	22
	8.2 Workplace monitoring.....	22
	8.3 Individual monitoring.....	23
	8.3.1 General.....	23
	8.3.2 Dosimetric and radiation.....	23
	8.3.3 Chemical hazard.....	24
	8.4 Methods and monitoring intervals.....	24
	8.4.1 General.....	24
	8.4.2 Time intervals for toxicological risk.....	24
	8.4.3 Time intervals for radiotoxicological risk.....	24
	8.4.4 Principles and assumptions.....	25
9	Special monitoring programmes	26
	9.1 Workplace monitoring.....	26
	9.2 Individual monitoring.....	26
	9.2.1 Recommended monitoring for toxicological risk.....	26
	9.2.2 Recommended monitoring and period for radiotoxicological risk.....	26
10	Task-related monitoring programmes	27
	10.1 Workplace monitoring.....	27
	10.2 Individual monitoring.....	27

11	Performance criteria for laboratories	28
11.1	General	28
11.2	Critical values	28
11.3	Reference values	29
11.4	Performance criteria for workplace monitoring	29
12	Quality assurance and quality control for bioassay laboratories	30
13	Procedure for the assessment of exposures	30
13.1	General	30
13.2	Assessment of workplace monitoring data	31
13.3	Assessment of individual monitoring data	31
13.4	Properties of a software tool	31
13.5	Uncertainties	32
13.6	Quality assurance of the assessment process	33
14	Reporting and documentation	33
14.1	Reporting results for <i>in vitro</i> measurements	33
14.2	Reporting results for <i>in vivo</i> measurements	34
14.3	Documentation of the dose assessment	34
	Annex A (informative) Nuclear data of U-238 and U-235 decay	36
	Annex B (informative) Default classification of uranium compounds	37
	Annex C (informative) Measurement techniques for uranium	38
	Annex D (informative) Committed effective dose per unit intake for uranium compounds	42
	Annex E (informative) Estimation of uncertainties for internal dose assessments	43
	Bibliography	47