## **APPENDIX 1**

# SUMMARY TABLES OF GENETIC AND RELATED EFFECTS

### Summary table of genetic and related effects of chlorinated drinking-water

Nor	ımamı	naliar	1 syste	ems									Mar	nmal	lian s	system	15																									
Prol	kary-	Lov	wer aryot	es		Plar	nts		Ins	ects			In v	itro																In	vivo											
											Τ		Ani	mal c	ælls						Hu	ıman	cells	;						An	imal	s					H	Ium	ans			
D	G	D	R	G	A	D	G	с	R	G	c	A	D	G	s	М	С	A	Т	1	D	G	S	N	4 0	c	A	т	1	D	G	s	М	С	D	LA	Ľ		s	М	С	A
Sur	face wa	ater, c	hlori	nated	, not	conce	ntrate	ed1											-																							
Surf	face wa	ater, c	hlori	nated	, conc	entra	ted																																			
	+													_1	+1	+1	+1																									
Gro	und a	nd spr	ing w	vater,	chlor	inated	i, con	centu	rated																																	
	+														+ '	_1																										
Surf	iace wa	ater, c	hlori	nated	and e	either	chlor	rine c	lioxic	le or	ozon	e trea	ted, o	oncer	ntrat	ed																										
	+																																									

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group
- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

#### Summary table of genetic and related effects of sodium chlorite

Nonn	namm	alian	syste	ms									Mai	mmal	ian sy	stem	5																							
Proka otes		Lov euk	ver aryote	es		Plai	nts		Inse	ects			In v	itro															In v	vivo										
_	Γ			I			Ι	Γ			Ī		Ani	mal c	ells						Hun	nan c	ells						Ani	mals						Hu	imans			
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G	s	М	С	A	Т	I	D	G	S	М	С	A	Т	I	D	G	S	М	С	DL	A	D	S	М	С	A
	+1																+ <sup>1</sup>															?	_1		_1					

-1 sperm morphology in B6C3F<sub>1</sub> mice

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each endpoint:

+ considered to be positive for the specific endpoint and level of biological complexity

+1 considered to be positive, but only one valid study was available to the Working Group

- considered to be negative

-1 considered to be negative, but only one valid study was available to the Working Group; sperm morphology in B6C3F1 mice

? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

## Summary table of genetic and related effects of sodium hypochlorite

Non	namn	naliar	i syste	ems								Mar	mmalia	n syste	ms						· · · ·																	
Prok: otes	агу-	Lov euk	wer aryot	es		Plai	nts	Inse	ects			In y	itro											<u> </u>			Inv	rivo					<u> </u>					
D	G	D	R	G	A	D	G	R				<b> </b>	mal cel				1		Hun		æils						Ani	mals	. <u></u>			·		Hu	mans			
······	10	<u> </u>	<u> </u>	<u> </u>	<u> </u>		0	K	G	С	A	D	GS	5 М	С	A	Т	I	D	G	S	М	С	A	Т	I	D	G	s	М	С	DL	A	D	s	м	С	A
+1	+														+1						+1		_1								1		1					

+1 micronuclei in newt larvae

+<sup>1</sup> sperm morphology in B6C3F<sub>1</sub> mice

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; L inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group; micronuclei in newt larvae
- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group; sperm morphology in B6C3F<sub>1</sub> mice
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

#### Summary table of genetic and related effects of bromodichloromethane

Nonn	hamm	naliar	i syste	ems									Мап	nmalia	n sys	stems	S																							
Proka otes	игу-	Lov euk	wer aryot	es		Plai	nts		Inse	ects			In vi	tro															In	vivo										
	1		Τ	Τ								T	Anir	nal ce	lls						Hu	man	cells						An	imals						Hu	mans			
D	G	D	R	G	Α	D	G	с	R	G	с	Α	D	G	s	М	С	A	T	I	D	G	S	М	С	A	Т	I	D	G	s	М	C	DL	A	D	S	м	С	A
	+													+1	-		+						+ 1								+ 1	1_1								

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each endpoint:

+ considered to be positive for the specific endpoint and level of biological complexity

+1 considered to be positive, but only one valid study was available to the Working Group

- considered to be negative

-1 considered to be negative, but only one valid study was available to the Working Group

? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Non	mamn	nalia	n syst	ems									Mar	nmalia	n sys	tems																	·	·		·········						
Prok otes	агу-		wer (aryot	ies		Pla	nts		Ins	ects			In vi	itro								·····.							In	vivo	)									•		
D	G	D	R	G										mal cel	ls						Huma	n cell	s						A	nima	ls				·		н	uman	 s			
	10		<u> </u>	0	Α	D	G	С	R	G	C	A	D	G	<u> </u>	м	С	Α	Т	I	DO	s		M	С	A	Т	I	D	0	; s	; [	м	С	DL	A	D	S	M	С	A	A
	?									+ 1				+1 ?	,		+					+	. 1						1		4	F :	?	_1								

### Summary table of genetic and related effects of bromoform

+1 mitotic arrest in plants

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each endpoint:

+ considered to be positive for the specific endpoint and level of biological complexity

+1 considered to be positive, but only one valid study was available to the Working Group; mitotic arrest in plants

- considered to be negative

-1 considered to be negative, but only one valid study was available to the Working Group

? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

#### Summary table of genetic and related effects of chlorodibromomethane

Non	namn	naliar	1 syste	ems									Mar	nmal	ian s	ystem	s																							
Prok otes	агу-		wer aryot	es		Pla	nts		Ins	ects			In v	itro															In	vivo		<u> </u>								t <del>i da di</del> sta
													Ani	mal c	ælls						Hu	man	cells						A	nimal	s					F	Iumans	;		
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G	s	М	С	A	T	I	D	G	S	М	С	A	Т	I	D	G	s	М	C	DL	A	D	) s	М	С	A
•	+		+ 1	_1													+1						+1								+	1_1								

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group
- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Nonmamr	nalian	systems								Mar	nmalian	systen	ns											<u> </u>		·····	······	<del></del>			<del></del>	
Prokary- otes	Low euka	er ryotes		Plant	S	In	sects			In v.								<u> </u>						In v	ivo	•						
					T			Τ	Τ	Ani	mal cells						Huma	n cells						Anii	nals					Hum	ans	
D G	D	R G	Α	D	GC	R	G	C	A	D	GS	М	С	A	T	I	DC	s	м	С	A	Т	I	D	G	s	М	c	DL A	D	s I	ис
Bromochic	proace	tonitrile																								d	l.			L		
+											+	1					+1										_1					
Chloroace	tonitri	le																														
_1											+	L															_1					
Dibromoac	etonit	rile																														
 Dichloroac	atonit	-10					_1				+1						+1										_1					
+		_1					+1				+1																					
Trichloroad	cetonit	rile					Ŧ				+.																-1					
· _1											+ 1						+1										_1					

### Summary table of genetic and related effects of halogenated acetonitriles

<sup>-1</sup> sperm morphology in B6C3F<sub>1</sub> mice

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; L inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group
- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group; sperm morphology in mice
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Summary	table of	genetic and	related	effects	of bromoethane	
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Nonn	namm	nalian	n syste	ems									Mar	mmal	ian s	ystem	s																							
Proka otes	игу-	Lov euk	wer aryot	es	_,	Pla	nts		Inse	ects			In v	itro															In	vivo										
	Ι			Τ			Τ	Τ			Τ	Τ	Ani	mal o	ælls						Hui	man (	cells						An	imals						Hu	imans			
D	G	D	R	G	A	D	G	С	R	G	c	A	D	G	s	М	С	A	Т	I	D	G	S	М	С	A	T	1	D	G	s	M	С	DL	Α	D	s	М	С	A
	+									_1					+1		<sup>1</sup>																							

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- +1 considered to be positive, but only one valid study was available to the Working Group
- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

### Summary table of genetic and related effects of chloroethane

Nonr	namm	aliar	n syste	ems									Mar	mmal	lian s	ystem	S																							
Proka otes	игу-	Lov euk	ver aryot	es		Pla	nts		Inse	ects			In v	itro															In	vivo										
													Ani	mal c	ælls				**		Hu	man	cells						An	imals	;					Hu	mans			
D	G	D	R	G	A	D	G	c	R	G	С	Α	D	G	S	М	С	Α	Т	I	D	G	S	м	С	A	Т	1	D	G	S	М	С	DL	A	D	s	М	с	A
	+1																		_1																•	-	•	<b>A</b>	•••••	_

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; L, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each endpoint:

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group

- considered to be negative

- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

### Summary table of genetic and related effects of 1,1,2-trichloroethane

Nonr	namn	nalian	syste	ems									Mam	nmalia	n sys	tems	5																					,		
Prok: otes	ary-	Lov euk		es		Pla	nts		Inse	ects			In vi	tro															In v	vivo										
	1		Γ	Γ	Τ		Τ	Τ	~	Τ	Ι	1	Anir	mal cel	lls						Hu	man	cells						An	imals						Hu	imans	s 		
D	G	D	R	G	A	D	G	с	R	G	c	A	D	G	s	М	С	A	Т	I	D	G	S	М	С	A	Т	I	D	G	s	М	С	DL	A	D	S	М	c	A
				<u> </u>	+1		<b></b>												+ 1										?•											

\*+1 DNA binding, S-phase induction; -1 unscheduled DNA synthesis

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; L, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group
- considered to be negative
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- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Nonr	namn	naliar	ı sys	tems									Ma	mmalia	an sy	vstem	IS											·····									· · · · · ·			
Proka otes	агу-		wer aryo	otes		Plai	nts		Ins	ects			In v	ritro					•					,					In	vivo										
													Ani	imal ce	lls						Hu	nan o	cells						An	imal	s					Hu	ıma	ns		
D	G	D	R	G	Α	D	G	С	R	G	С	A	D	G	S	М	С	Α	Т	I	D	G	s	М	С	A	Т	I	D	G	s	М	С	DL	A	D	s	М	С	A
Cobal ? Cobal Cobal	– It sulf It nitr	fate rate	ide +	+			+1	+1					+ 1	+ 1	+1						+		+ 1		-	+ 1									+ <sup>1</sup>					
Cobal Cobal			nate																+1 +1																					
													+1						+1																					

### Summary table of genetic and related effects of cobalt and cobalt compounds

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

- + considered to be positive for the specific endpoint and level of biological complexity
- +1 considered to be positive, but only one valid study was available to the Working Group
- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group; sperm morphology in mice
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)