# APPENDIX 1 SUMMARY TABLES OF GENETIC AND RELATED EFFECTS

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

Non	mamn	naliar	ı syste	ems									Man	nmali	ian sy	stems	5																							
Prok otes	ary-	Lov	wer aryot	es		Plan	nts		Inse	cts			In vi	tro															In v	rivo										
													Anir	mal c	ells						Hur	nan c	ells						Ani	mals						Hu	mans			
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	Α	Т	I	D	G	s	М	С	DL	Α	D	s	М	С	Α

Surface water, chlorinated, not concentrated

Surface water, chlorinated, concentrated

Ground and spring water, chlorinated, concentrated

+1

Surface water, chlorinated and either chlorine dioxide or ozone treated, concentrated

+

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

Nonm	amn	naliar	n syst	ems									Marr	malia	an sys	stems	6																							
Prokas otes	ry-	1 .	wer caryo	tes		Pla	nts		Ins	ects	·		In vi	tro															In v	vivo										
			T	Ī	T	1		T		T			Anir	nal ce	ells						Hui	man o	cells						Ani	imals						Hu	mans			
D .	G	D	R	G	A	D	G	C	R	G	С	Α	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																+1															?	_1		_1					

<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; 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; 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 sodium hypochlorite

Nonmamm	naliar	ı syste	ms									Mammalian systems			
Prokary- otes	Lov euk	wer aryote	es.		Plan	nts		Ins	ects			In vitro		In vivo	
												Animal cells	Human œlls	Animals	Humans
	D	R	G	A	D	G	С	R	G	С	Α	D G S M C A T	D G S M C A T I	D G S M C DL A	D S M C
.1 +												+1	+1 _1	1 _1	

- +1 micronuclei in newt larvae
- +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

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- +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

Nonmam	mali	ian s	syste	ms									Mar	nmal	ian sy	stem	s																							
Prokary- otes		_ow€	er ryote	s		Plar	nts		Ins	ects			In vi	itro															In v	vivo										
		T									T		Ani	mal c	ells						Hu	man o	ælls						An	imals						Hu	man	s		
D G	Г	>	R	G	Α	D	G	С	R	G	С	Α	D	G	s	M	С	A	Т	I	D	G	S	М	С	Α	T	I	D	G	s	M	С	DL	A	D	s	М	С	A
+														+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

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# Summary table of genetic and related effects of bromoform

Nonmamm	nalia	n syst	ems									Mar	mmali	an s	ystem:	<u> </u>																		
Prokary- otes	1	wer karyot	es		Pla	nts		Ins	ects			In v	itro			<u> </u>					<del></del>						In	vivo	•			·		
D G	D	R	G		_							<u> </u>	mal co		T			<del>-</del>		Huma	n œll	s					Ar	nimal	s					Humans
2 19 1	15	1	10	Α	D	<u> </u>	С	R	G	]C	A	D	L	S	М	С	Α	T	I	D (	3 S	1	М	C /	A T	I	D	G	s	М	С	DL	A	D S M C
·								w	+1				+1	?		+					+	1					_1		+	?	_1			

#### + 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

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

Nonn	amm	nalian	syste	ems									Man	ımalia	an sys	tems	3																							
Proka otes	гу-	Lov	ver aryot	es		Plan	nts		Ins	ects			In vi	tro						•,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				<del> </del>					In	vivo		•	•					<del></del>	<del></del>	
				Π						T		Ĭ	Anir	nal ce	ils						Hu	man e	cells						An	imals	3					H	ımans	<u></u>		
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	Α	T	I	D	G	s	М	С	DL	Α	D	s	М	С	Α
	+		+ 1	_1													+ 1						+1								+ 1	_1			٠					

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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# Summary table of genetic and related effects of halogenated acetonitriles

Nonn	namn	naliar	n sys	stems									N	Иaп	nmalian	sys	tems																												
Proka otes	ary-		wer cary	otes		Pla	nts		Ins	ect	S	· .		n vi						<del></del> .											In	viv	10	•••											
_												T	A	\nir	mal cell	s						Ht	man	cells	<del></del>						A	nim	nals						***	1	Huma	ans			
D	G	D	R	G	Α	D	G	С	R	10	3 C	1	A I		G S	$\perp$	м с	:	A	Т	1	D	G	s	М	C	2 /	4	Т	I	D	1	G	s	М	T	С	DL	. A	I	o s	3	М	С	Α
Brom	ochlo	roac	eton	aitrile																									·									L					1		Щ
	+														+	. 1						+ 1													_1										
Chlor	oacet	tonitr	rile																																-										
	_1														+	1																			_1										
Dibro		etoni	itril	e																																									
	_1									_;	1				+	1						+ 1													_1										
Dichlo	oroac	etoni	trile	e																																									
	+		_1							+	. 1				+	1																			_1										
Trichle		ceton	itril	le																																									
	_1														+	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

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## Summary table of genetic and related effects of bromoethane

Nonm	amn	naliar	syste	ems									Mar	mmal	ian s	ystem	s																							
Proka: otes	гу-	Lov	ver aryot	es		Pla	nts		Inse	ects		•	In v	itro															In	vivo										
				Π							T	T	Ani	mal c	ælls				***		Hu	ıman	cells						An	imals	3					Hu	mans			
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G	s	М	С	Α	T	I	D	G	s	М	С	A	Т	1	D	G	s	М	С	DL	Α	D	s	M	С	A
	+									_1					+ 1		_1																							

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## Summary table of genetic and related effects of chloroethane

Nonmar	mma	alian	syste	ms									Mar	nma	lian s	ystem	ıs						***********																			
Prokary- otes		Lov euk	ver aryot	es		Plai	nts		Ins	ects			In v	itro		·····													I,	n viv	υ						***					_
													Ani	mal o	ælls						Hu	man	cells						A	nim	als						Н	luma	ıns			
D C	}	D	R	G	A	D	G	С	R	G	С	Α	D	G	s	М	С	Α	Т	I	D	G	s	М	С	A	Т	1	E	)	G	s	M	С	DL	Α	D	s	N	1	0	A
+	<b>- 1</b>																		_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

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

Nonma	ımm	alian	syste	ems									Mammalian systems							
Prokar otes		Lov	ver aryot	es		Pla	nts		Ins	ects			In vitro		In vivo			.,.,		
			<u> </u>	Τ			T	T		T			Animal cells	Human cells	Animals	Н	uman	3		
D	G	D	R	G	Α	D	G	С	R	G	С	Α	D G S M C A T I	D G S M C A T I	D G S M C DL A	D	S	М	С	A
	-				+1								+1		?•					

<sup>\*+1</sup> 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

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

Nonr	namn	naliar	syste	ems									Mai	mmal	ian sy	stem	s									~														
Proka otes	агу-	Lov euk	ver aryot	es		Pla	nts		Ins	ects			In v	itro															In	vivo										
													Ani	mal c	ælls						Hı	man	cells						An	imals						Hu	mans	<del></del>		
D	G	D	R	G	Α	D	G	С	R	G	С	A	D	G	s	М	С	A	T	I	D	G	s	М	С	Α	Т	I	D	G	s	М	С	DL	A	D	s	М	С	A
Cobal Cobal	– It sulf It nitz	fate rate	ide +	+			+1	+1					+1	+1	+1						+		+1		-	+1									+1					
Cobal Cobal			nate										<b>4.</b> 1						+1 +1																					

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

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