APPENDIX 1

SUMMARY TABLES OF GENETIC AND RELATED EFFECTS

Summary table of genetic and related effects of strong acid mists and acid pH, including sulfuric acid

Nonma	mmali	ian sy	stems									Mar	nmalia	ın sy	stem	s																				••••			
Proka- ryotes		wer karyot	es		Plar	nts		Inse	ects			In vi	itro		**********													In	vivo										
												Anii	mal ce	lls						Hui	man c	ælls						Ar	nimal	s ^a				******	Hu	mans		•	_
) G	D	R	G	A	D	G	С	R	G	С	A	D	G	s	М	С	Α	T	1	D	G	S	М	С	Α	T	I	D	G	s	М	С	DL	A	D	S	М	С	1
<u>-</u>		+1	-				+						+ 1			+		+								-			****			·				- - 1	<u>+ 1</u>	<u>+</u> 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
- 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)

[&]quot;Chromosomal aberrations, sea urchins, +

Summary table of genetic and related effects of sulfur dioxide and sodium bisulfite

Nonma	mmal	lian sy	stems									Mar	mmali	an sy	/stem	s																					
Proka- ryotes		wer karyot	es		Plan	nts		Inse	ects	***		In v	itro				**********	· · · · · · · · · · · · · · · · · · · 					-					In v	rivo	·							
								Π				Ani	mal ce	ells						Hui	man c	ælls				***********		Ani	mals					Hur	nans		
o 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	Α	Т	1	D	G	s	М	С	DL A	D	S	M	С
+		_1	+			+ 1	+					_1	_	+		_1		+				+1	-	+1	****		1			_	·		- L.,		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; sperm abnormality, mouse
- 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 hydrochloric acid

Non	mamı	malia	an sy	stems									Mar	nmalian :	systen	ıs						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,																	_
Prok ryote		Lov euk	ver aryot	es		Pla	nts		Inse	ects			In v	itro														In v	ivo				•						
				T									Ani	mal cells						Hu	man	ælls						Ani	mals						Hur	nans		****	
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G S	М	С	Α	Т	I	D	G	s	М	С	Α	T	I	D	G	s	М	С	DL	Α	D	S	М	C 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

- + 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; sperm abnormality, mouse
- considered to be negative
- -i 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 diethyl sulfate

Nonman	ımali	an sy	stems									Mar	nmal	lian s	ysten	ns															• • • • • • • • • • • • • • • • • • • •							
roka- yotes	Lov euk	wer aryot	es		Pla	nts		Ins	ects			In vi	tro	**														In 1	rivo					-	· · · · · · · · · · · · · · · · · · ·			
												Aniı	nal c	ælls						Hu	man	cells			-			Ani	mals						Hum	ans	······································	
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	M	С	DL	Α	+		мС	
+		+1	+ 1		+1	+ 1	+	+1	+	_1	_1	+	+	+1	+	+ 1				+ 1			+1	+				+	+ 1a		+	+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; sperm abnormality, mouse
- 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)

Inconclusive result in the mouse spot test and weakly positive at one dose in the mouse specific locus test without dose-dependence

Summary table of genetic and related effects of 1,3-butadiene and metabolites

Non	man	nmali	ian s	ystems									Ma	mmal	ian s	ysten	15																								
Prol ryot		Lov		otes		Plar	nts		Inse	ects			In v	ritro					 						*****************				In	vivo											
										Π			An	imal c	ælls					***********	Hui	man o	ælls						An	imals	s						Hun	nans			
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	T	I	D	G	s	М	To	2 1	DL /	A	D	s	М	С	Α
1,3-	Buta	diene	e																																						
	+									_1				_1	+ 1								?						+		+	+	+	+ -	+1 -	-					
1,2-	Epox	cy-3-b	outen	ie																																					
	+												_1		+ 1								+ 1								+ 1	ı	-	+ 1							
1,2:	3,4-D)iepo:	xybu	tane																																					
+	+		+	+					+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; sperm abnormality, mouse
- 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)

 *Sperm abnormality, mouse +1