## CONTENTS

## ENVIRONMENTAL HEALTH CRITERIA FOR 1,2-DIBROMOETHANE

Pre	amble	e	8		
1.	SUN	MMARY	19		
	1.1	Identity, physical and chemical properties,			
		and analytical methods	19		
	1.2	Sources of human and environmental exposure	19		
	1.3	Environmental levels and degradation	19		
		Kinetics and metabolism in laboratory animals	20		
	1.5	Effects on laboratory mammals and in vitro			
		test systems	20		
		Effects on humans	22		
	1.7	Effects on organisms in the environment	22		
2.	IDENTITY, PHYSICAL AND CHEMICAL PROPERTIES,				
	AN	ALYTICAL METHODS	23		
	2.1	Identity	23		
	2.2	Physical and chemical properties	23		
	2.3	Conversion factors	24		
	2.4	Analytical methods	24		
		2.4.1 Air	25		
		2.4.2 Water	25		
		2.4.3 Soils and sediment	28		
		2.4.4 Food	28		
3.	SOURCES OF HUMAN AND ENVIRONMENTAL				
	EXI	POSURE	34		
	3.1	Natural occurrence	34		
	3.2	Anthropogenic sources	34		
		3.2.1 Production levels and processes	34		
		3.2.1.1 World production figures	34		
		3.2.1.2 Manufacturing processes	34		
		3.2.2 Uses	34		
		3.2.2.1 Petrol additive	34		
		3.2.2.2 Fumigant	35		

4.			MENTAL RMATIO	TRANSPORT, DISTRIBUTION AND N	37
	4.1	Transp 4.1.1 4.1.2	Air	istribution between media	37 37 37
5.	EN	VIRON	MENTAL	LEVELS AND HUMAN EXPOSURE	40
	5.1		onmental l	levels	40
		5.1.1	Air		40
			Water		48
			Food		50
	5.2	Occup	ational ex	posure	51
6.	KIN	NETICS	AND ME	ETABOLISM	56
	6.1	Absor	ption		56
	6.2	Distril	oution		56
	6.3	Metab	olic transf	formation	57
	6.4	Elimir	nation and	excretion in expired air, faeces	
		and ur	rine		62
	6.5	Reten	tion and to	urnover	62
	6.6	Reacti	on with b	ody components	62
7.			ON EXPE	ERIMENTAL ANIMALS AND	65
				ST ENIS	
	7.1		exposure		65
		7.1.1	Oral		65
4				Rat	65
				Chicken	65
		7.1.2	Inhalatio		66
				Rat	66
					67
		7.1.3		itoneal injection	67
				Mouse	67
			7.1.3.2		68
	7.2		term expo	osure	68
		7.2.1	Oral	C1.1	68
				Chicken	68
		7.2.2	Inhalatio		68
				Mouse	68
			7.2.2.2	Rat Guinea-nig	69 70
			1111	(*IIInea=nig	7()

		7.2.2.4	Rabbit	70
		7.2.2.5	Monkey	70
7.3	Eve ar	d skin irr		71
	7.3.1	Rabbit		71
7.4		term expo	sure	71
	7.4.1	-		71
		7.4.1.1	Mouse	71
		7.4.1.2		80
	7.4.2	Inhalatio		80
	, , , , _		Mouse	80
		7.4.2.2		81
7.5	Develo	pmental t		82
	7.5.1 Reproduction			82
		•	Effects on sperm	83
			Effects on ova	84
	7.5.2	Teratoge		85
		_	Effects on neonatal behaviour	86
7.6	Mutag		d related end-points	86
	_	In vitro a		94
		In vivo as		95
		Other stu		96
7.7		ogenicity		98
	7.7.1		tration by gavage	99
	, , , , .		Mouse	99
			Rat	99
	7.7.2		tration in drinking-water	100
		7.7.2.1	_	100
	7.7.3			101
	,,,,,		Mouse	101
		7.7.3.2		101
	7.7.4		pplication	101
		7.7.4.1		101
	7.7.5		sformation	102
7.8			dies and species specificity	102
EFF	FECTS (	ON HUM	ANS	104
8 1	Acute	toxicity		104
		ational exp	nosure	104
0.2		Cancer in		105
			ctive effects	105
EFF	FECTS	ON ORGA	ANISMS IN THE ENVIRONMENT	107
0.1	Aquat	c organism	ne	107
7.1	Aqual.	c organisi	113	107

8.

## EHC 177: 1,2-Dibromoethane

	9.1.1 Invertebrates	107
	9.1.2 Fish	109
	9.2 Terrestrial biota	110
	9.3 Microorganisms	111
	9.4 Plants	111
10.	EVALUATION OF HUMAN HEALTH RISKS AND	
	EFFECTS ON THE ENVIRONMENT	113
	10.1 Evaluation of human health risks	113
	10.2 Evaluation of effects on the environment	113
11.	CONCLUSIONS AND RECOMMENDATIONS	114
12.	FURTHER RESEARCH	115
13.	PREVIOUS EVALUATIONS BY INTERNATIONAL	
	BODIES	116
RE	FERENCES	117
RES	SUME	139
RES	SUMEN	145