CONTENTS

ENVIRONMENTAL HEALTH CRITERIA FOR DIFLUBENZURON

Pre	ambl	e	8	
1.	SUMMARY AND EVALUATION; CONCLUSIONS AND RECOMMENDATIONS			
	1.1	Summary		
		1.1.1 Identity, physical and chemical properties,		
		and analytical methods	21	
		1.1.2 Sources of human and environmental exposure	21	
		1.1.3 Environmental transport, distribution and		
		transformation	21	
		1.1.4 Environmental levels and human exposure	22	
		1.1.5 Kinetics and metabolism in laboratory animals	22	
		1.1.6 Effects on laboratory mammals and in vitro test		
		systems	23	
		1.1.7 Effects on humans	24	
		1.1.8 Effects on other organisms in the laboratory and field	24	
	1.2	Evaluation	24 25	
	1.2	1.2.1 Evaluation of human health risks	25	
		1.2.1 Evaluation of Human health risks 1.2.2 Evaluation of effects on the environment	25	
		1.2.3 Toxicological criteria for setting guidance	23	
		values	27	
	13	Conclusions and recommendations	27	
	1.5	Conclusions and recommendations	_ ,	
2.	IDE	ENTITY, PHYSICAL AND CHEMICAL PROPERTIES,		
		ALYTICAL METHODS	30	
	2.1	Identity	30	
		Physical and chemical properties	30	
		Conversion factor	31	
	2.4	Analytical methods	31	
2	202	ID CEC OF HILMAN AND ENVIRONMENTAL		
3.		JRCES OF HUMAN AND ENVIRONMENTAL POSURE	35	
	EA	FOSURE	33	
	3.1	Natural occurrence	35	
	151 511	Anthropogenic sources	35	
		3.2.1 Production levels and processes	35	
		A second		

EHC 184: Diflubenzuron

			Formulations	35 36	
		3.2.3	Uses	30	
4.	ENV TRA	VIRON ANSFO	MENTAL TRANSPORT, DISTRIBUTION, RMATION AND FATE	38	
	4.1	Appra	isal	38	
	4.2	Transi	port and distribution between media	38	
		4.2.1		38	
		4.2.2	Dissipation	39	
			Evaporation	40	
			Crop residue data	40	
	4.3	Transf	formation	41	
		4.3.1	Abiotic degradation	41	
			4.3.1.1 Photolysis	41	
			4.3.1.2 Hydrolysis	41	
		4.3.2	Biodegradation	42	
			4.3.2.1 Water	42	
			4.3.2.2 Soil	44	
			cumulation and biomagnification	49	
	4.5		ction with other physical, chemical or		
		_	ical factors	50	
	4.6	Ultim	ate fate following use	52	
5.	ENVIRONMENTAL LEVELS AND HUMAN EXPOSURE				
	5.1	Envir	onmental levels	53	
		5.1.1	Air	53	
		5.1.2	Water	53	
		5.1.3	Food and feed	54	
		5.1.4	Forest plants and litter	56	
			Aquatic organisms	57	
	5.2	Gener	ral population exposure	57	
	5.3	Occup	pational exposure during manufacture,		
		formu	ulation or use	57	
6.	KII	NETICS	S AND METABOLISM IN LABORATORY		
	AN	IMALS	S AND HUMANS	59	
	6.1	Absor	rption	59	
		Distri		59	
			bolic transformation	60	
	5.5	6.3.1			
		5.5.4	retention and turnover	62	
	6.4	Elimi	nation and excretion	63	

	6.5	Retention and turnover	65
		6.5.1 Biological half-life	65
7.	EFI	FECTS ON LABORATORY MAMMALS AND	
•		VITRO TEST SYSTEMS	66
	224	THO IEST STSTEMS	00
		Single exposure	66
	7.2	Short-term exposure	66
		Long-term exposure	74
		Skin and eye irritation; sensitization	76
	7.5	Reproductive toxicity, embryotoxicity and	
		teratogenicity	76
		Mutagenicity and related end-points	79
		Carcinogenicity	79
	7.8	Other special studies	79
		7.8.1 Special studies on met- and	
		sulfhaemoglobin formation	88
	7.9	Toxicity of metabolites	91
		7.9.1 Carcinogenicity studies with 4-chloroaniline	92
8.	EFF	FECTS ON HUMANS	95
).	FFF	FECTS ON OTHER ORGANISMS IN THE	
•		BORATORY AND FIELD	96
	9.1		96
		9.1.1 Microorganisms	96
		9.1.1.1 Water	96
		9.1.1.2 Soil	96
		9.1.2 Aquatic organisms	97
		9.1.2.1 Microorganisms	97
		9.1.2.2 Plants	97
		9.1.2.3 Invertebrates	97
		9.1.2.4 Vertebrates	105
		9.1.3 Terrestrial organisms	109
		9.1.3.1 Plants	109
		9.1.3.2 Invertebrates	109
		9.1.3.3 Vertebrates	110
	9.2	Field observations	112
		9.2.1 Microorganisms	112
		9.2.1.1 Water	112
		9.2.1.2 Soil	112
		9.2.2 Aquatic organisms	112
	,	9.2.2.1 Plant	112
		9.2.2.2 Invertebrates	113

EHC 184: Diflubenzuron

	9.2.3		Vertebrates rial organisms	121 122
			Invertebrates	122
		9.2.3.2	Vertebrates	123
10.	PREVIOUS BODIES	S EVAL	UATIONS BY INTERNATIONA	L 125
RE	FERENCES			127
RES	SUME			154
RES	SUMEN			160