

1,2-Dichloroethane (1,2-ジクロロエタン)

Chemical Name	: <u>1,2-Dichloroethane</u>	
Synonym	: <u>Ethylene chloride</u> <u>Ethylene dichloride</u>	
Molecular Weight	: 98.96	
Melting Point	: -35.3°C	[CHCD]
Boiling Point	: 83-84 °C	[CHCD]
Flashing Point	: 13°C(c.c.), 18°C(o.c.)[Merck]	
Molecular Formular:	C ₂ H ₄ Cl ₂	
Chemical Structure:	CH ₂ ClCH ₂ Cl	
CAS No.	: 107-06-2	
METI No.	: (2)-54	
MHLW No.	: 2-(13)-23	
Specified Chemical Substances:	-	
Source of Substance:	Tokyo Kasei Kogyo Co., Ltd.	
Lot No.	: GI01	
Purity	: 99.50%	
Vehicle	: DMSO	

Mutagenicity in Bacterial Test: Positive

IARC Evaluation : Group 2B

Conc. μ g/plate	Number of Revertants/plate									
	Base-substitution						Frame-shift			
	TA100		TA1535		WP2uvrA/pKM101		TA98		TA1537	
DMSO	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+
		(101)	(103)	(13)	(11)	(83)	(121)	(16)	(27)	(6)
1 .22	111	130	10	13	78	84	28	34	9	9
	94	114	15	11	62	134	18	32	10	14
	(103)	(122)	(13)	(12)	(70)	(109)	(23)	(33)	(10)	(12)
4 .88	107	111	7	9	72	119	18	20	7	10
	114	133	14	6	70	124	15	24	10	10
	(111)	(122)	(11)	(8)	(71)	(122)	(17)	(22)	(9)	(10)
19 .5	109	134	7	11	75	122	17	16	8	13
	98	116	9	7	75	108	20	24	6	7
	(104)	(125)	(8)	(9)	(75)	(115)	(19)	(20)	(7)	(10)
78 .1	112	98	16	13	82	135	15	21	8	10
	112	120	9	20	75	131	22	17	7	7
	(112)	(109)	(13)	(17)	(79)	(133)	(19)	(19)	(8)	(9)
313	109	127	10	36	78	133	18	15	6	9
	126	119	14	34	59	111	14	16	15	7
	(118)	(123)	(12)	(35)	(69)	(122)	(16)	(16)	(11)	(8)
1250	127	181	17	111	67	119	17	26	11	6
	102	192	18	102	51	121	17	25	3	15
	(115)	(187)	(18)	(107)	(59)	(120)	(17)	(26)	(7)	(11)
5000	119	130	13	53	72	102	14	31	6	14
	137	120	17	75	55	116	18	24	5	10
	(128)	(125)	(15)	(64)	(64)	(109)	(16)	(28)	(6)	(12)
Judgement	-	-	-	+	-	-	-	-	-	-
Specific Mutagenicity				76.8						
Positive Control	AF-2	2-AA	NaN ₃	2-AA	AF-2	2-AA	AF-2	2-AA	9-AA	2-AA
	(684)	(1090)	(469)	(208)	(1510)	(745)	(399)	(392)	(230)	(163)

Experimental Data-2

(B0009-2/3)

Conc. μ g/plate	Number of Revertants/plate			
	Base-substitution		Frame-shift	
	TA1535	WP2 _{avrA} /pKM101	TA98	TA1537
DMSO	S9+	S9+	S9-	S9-
	(13)	(100)	(14)	(10)
1 .22	9	89	10	7
	11 (10)	111 (100)	14 (12)	16 (12)
4 .88	14	79	13	7
	16 (15)	78 (79)	15 (14)	9 (8)
19 .5	17	78	11	10
	15 (16)	89 (84)	14 (13)	15 (13)
78 .1	24	84	15	7
	23 (24)	94 (89)	18 (17)	14 (11)
313	59	92	18	17
	47 (53)	85 (89)	14 (16)	7 (12)
1250	109	111	7	13
	120 (115)	111 (111)	14 (11)	11 (12)
5000	8	66	7	8
	7 (8)	81 (74)	9 (8)	6 (7)
Judgement	+	-	-	-
Specific Mutagenicity	128			
Positive Control	2-AA (238)	2-AA (780)	AF-2 (499)	9-AA (242)

Experimental Data-3

Conc. μ g/plate	Number of Revertants/plate									
	Base-substitution						Frame-shift			
	TA100		TA1535		WP2uvrA/pKM101		TA98		TA1537	
DMSO	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+
	(113)	(120)	(9)	(12)	(72)	(109)	(17)	(23)	(9)	(14)
78 .1	()	()	()	(17)	()	()	()	()	()	()
156	()	()	()	(23)	()	()	()	()	()	()
313	116 115 (116)	155 170 (163)	13 16 (15)	39 34 (37)	53 79 (66)	107 127 (117)	18 18 (18)	23 25 (24)	11 8 (10)	3 11 (7)
625	130 126 (128)	176 178 (177)	21 13 (17)	59 51 (55)	66 64 (65)	106 105 (106)	10 10 (10)	24 30 (27)	13 15 (14)	13 11 (12)
1250	143 152 (148)	229 178 (204)	21 44 (33)	98 113 (106)	67 75 (71)	122 128 (125)	14 23 (19)	31 23 (27)	7 2 (5)	11 14 (13)
2500	141 153 (147)	207 233 (220)	40 37 (39)	78 127 (103)	85 76 (81)	107 112 (110)	11 24 (18)	28 28 (28)	9 8 (9)	11 13 (12)
5000	96 * 86 * (91 *)	119 * 87 * (103 *)	16 * 5 * (11 *)	()	49 * 69 * (59 *)	85 * 75 * (80 *)	14 * 25 * (20 *)	21 * 21 * (21 *)	3 * 9 * (6 *)	8 * 8 * (8 *)
Judgement	-	-	+	+	-	-	-	-	-	-
Specific Mutagenicity			19.2	79.9						
Positive Control	AF-2 (663)	2-AA (918)	NaN ₃ (410)	2-AA (253)	AF-2 (1360)	2-AA (686)	AF-2 (432)	2-AA (412)	9-AA (309)	2-AA (160)

* Growth inhibition was observed.

Experimental Data-4 (B0009-3/3)

Conc. μ g/plate	Number of Revertants/plate
	Frame-shift
	TA1535
DMSO	(13)
313	11 16 (14)
625	22 21 (22)
1250	31 33 (32)
2500	33 34 (34)
5000	21 * 21 * (21 *)
Judgement	+
Specific Mutagenicity	15.2
Positive Control	AF-2 (390)

* Growth inhibition was observed.