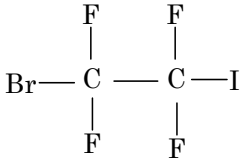
1-Bromo-1,1,2,2-tetrafluoro-2-iodoethane
(1-ﾌﾞﾛﾓ-1,1,2,2-ﾃﾄﾗﾌﾙｵﾛ-2-ﾖｰﾄﾞｴﾀﾝ)

Chemical Name ; 1-Bromo-1,1,2,2-tetrafluoro-2-iodoethane
Synoym ; IBTFE

Molecular Weight ; 306.82
Melting Point ; −
Boiling Point ; 80.5-81℃[CHCD]
Flashing Point ; −
Molecular Formular; $C_2BrF_4I$

Chemical Structure;



CAS No. ; 421-70-5
METI No. ; −
MHLW No. ; 2-(13)-224
Specified Chemical Substances; −

Source of Substance; Ftech Co., Ltd.
Lot No. ; C2BI2418
Purity ; 99.9%

Vehicle ; Air
ExposureCondition ; 37℃, 24hr
Culture Condition ; 37℃, 24hr

Mutagenicity in Bacterial Test; Positive

IARC Evaluation ; not yet cited

| Conc. % | Number of Revertants/plate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Base-substitution | | | | | | Frame-shift | | | |
| | TA100 | | TA1535 | | WP2*uvrA*/pKM101 | | TA98 | | TA1537 | |
| | S9− | S9+ | S9− | S9+ | S9− | S9+ | S9− | S9+ | S9− | S9+ |
| Air | ( 100 ) | ( 112 ) | ( 10 ) | ( 9 ) | ( 68 ) | ( 104 ) | ( 19 ) | ( 24 ) | ( 8 ) | ( 7 ) |
| | 121 | 130 | 60 | 59 | 310 | 255 | 18 | 25 | 9 | 7 |
| | 129 | 155 | 44 | 84 | 282 | 261 | 21 | 23 | 6 | 7 |
| 0 .005 | ( 125 ) | ( 143 ) | ( 52 ) | ( 72 ) | ( 296 ) | ( 258 ) | ( 20 ) | ( 24 ) | ( 8 ) | ( 7 ) |
| | 151 | 153 | 69 | 85 | 436 | 290 | 6 | 23 | 5 | 10 |
| | 159 | 124 | 99 | 72 | 373 | 318 | 17 | 33 | 6 | 10 |
| 0 .01 | ( 155 ) | ( 139 ) | ( 84 ) | ( 79 ) | ( 406 ) | ( 304 ) | ( 12 ) | ( 28 ) | ( 6 ) | ( 10 ) |
| | 31 | 0 | 1 | 11 | 807 | 486 | 0 | 0 | 0 | 0 |
| | 41 | 0 | 1 | 7 | 787 | 450 | 3 | 0 | 0 | 0 |
| 0 .05 | ( 36 ) | ( 0 ) | ( 1 ) | ( 9 ) | ( 797 ) | ( 468 ) | ( 2 ) | ( 0 ) | ( 0 ) | ( 0 ) |
| | 7 * | 0 * | 0 * | 0 * | 22 * | 8 * | 0 * | 0 * | 0 * | 0 * |
| | 8 * | 0 * | 0 * | 0 * | 28 * | 8 * | 0 * | 0 * | 0 * | 0 * |
| 0 .1 | ( 8 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 25 *) | ( 8 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) |
| | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * |
| | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * |
| 0 .5 | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) |
| | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * |
| | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * |
| 1 | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) |
| | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * |
| | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * | 0 * |
| 5 | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) |
| Judgement | − | − | + | + | + | + | − | − | − | − |
| Specific Mutagenicity # | | | 0.005 | 0.005 | 0.005 | 0.005 | | | | |
| Positive Control | AF-2 ( 496 ) | 2-AA ( 1227 ) | $NaN_3$ ( 334 ) | 2-AA ( 286 ) | AF-2 ( 978 ) | 2-AA ( 943 ) | AF-2 ( 715 ) | 2-AA ( 337 ) | 9-AA ( 722 ) | 2-AA ( 231 ) |

* Growth inhibition was observed.
# The concentration which was two times of the negative control value was shown.

| Conc. % | Number of Revertants/plate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Base-substitution | | | | | | Frame-shift | | | |
| | TA100 | | TA1535 | | WP2*uvrA*/pKM101 | | TA98 | | TA1537 | |
| | S9− | S9+ | S9− | S9+ | S9− | S9+ | S9− | S9+ | S9− | S9+ |
| Air | ( 106 ) | ( 117 ) | ( 10 ) | ( 8 ) | ( 71 ) | ( 97 ) | ( 19 ) | ( 22 ) | ( 8 ) | ( 9 ) |
| | 139 | 104 | 43 | 21 | 128 | 134 | 15 | 15 | 6 | 7 |
| | 141 | 116 | 25 | 17 | 123 | 153 | 14 | 21 | 13 | 6 |
| 0 .0001 | ( 140 ) | ( 110 ) | ( 34 ) | ( 19 ) | ( 126 ) | ( 144 ) | ( 15 ) | ( 18 ) | ( 10 ) | ( 7 ) |
| | 121 | 106 | 17 | 9 | 90 | 150 | 20 | 28 | 9 | 8 |
| | 94 | 127 | 6 | 11 | 102 | 123 | 15 | 22 | 3 | 7 |
| 0 .0005 | ( 108 ) | ( 117 ) | ( 12 ) | ( 10 ) | ( 96 ) | ( 137 ) | ( 18 ) | ( 25 ) | ( 6 ) | ( 8 ) |
| | 115 | 133 | 18 | 15 | 126 | 138 | 17 | 20 | 6 | 11 |
| | 121 | 108 | 17 | 17 | 123 | 123 | 14 | 23 | 8 | 11 |
| 0 .001 | ( 118 ) | ( 121 ) | ( 18 ) | ( 16 ) | ( 125 ) | ( 131 ) | ( 16 ) | ( 22 ) | ( 7 ) | ( 11 ) |
| | 152 | 170 | 34 | 29 | 232 | 179 | 9 | 23 | 2 | 13 |
| | 135 | 151 | 39 | 30 | 223 | 200 | 17 | 23 | 5 | 14 |
| 0 .005 | ( 144 ) | ( 161 ) | ( 37 ) | ( 30 ) | ( 228 ) | ( 190 ) | ( 13 ) | ( 23 ) | ( 4 ) | ( 14 ) |
| | 163 | 170 | 93 | 71 | 358 | 316 | 9 | 29 | 5 | 9 |
| | 167 | 200 | 112 | 96 | 402 | 371 | 25 | 29 | 10 | 10 |
| 0 .01 | ( 165 ) | ( 185 ) | ( 103 ) | ( 84 ) | ( 380 ) | ( 344 ) | ( 17 ) | ( 29 ) | ( 8 ) | ( 10 ) |
| | 112 | 1 | 3 | 1 | 890 | 603 | 2 | 0 | 1 | 1 |
| | 100 | 2 | 3 | 3 | 799 | 541 | 1 | 0 | 1 | 0 |
| 0 .05 | ( 106 ) | ( 2 ) | ( 3 ) | ( 2 ) | ( 845 ) | ( 572 ) | ( 2 ) | ( 0 ) | ( 1 ) | ( 1 ) |
| | 5 * | 0 * | 1 * | 0 * | 13 * | 3 * | 0 * | 0 * | 0 * | 0 * |
| | 7 * | 0 * | 3 * | 0 * | 14 * | 5 * | 0 * | 0 * | 0 * | 0 * |
| 0 .1 | ( 6 *) | ( 0 *) | ( 2 *) | ( 0 *) | ( 14 *) | ( 4 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) |
| Judgement | − | − | + | + | + | + | − | − | − | − |
| Specific Mutagenicity # | | | 0.005 | 0.005 | 0.005 | 0.01 | | | | |
| Positive Control | AF-2 ( 520 ) | 2-AA ( 1155 ) | $NaN_3$ ( 308 ) | 2-AA ( 252 ) | AF-2 ( 807 ) | 2-AA ( 928 ) | AF-2 ( 647 ) | 2-AA ( 339 ) | 9-AA ( 578 ) | 2-AA ( 192 ) |

* Growth inhibition was observed.

\# The concentration which was two times of the negative control value was shown.

| Conc. % | Number of Revertants/plate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Base-substitution | | | | | | Frame-shift | | | |
| | TA100 | | TA1535 | | WP2*uvrA*/pKM101 | | TA98 | | TA1537 | |
| | S9− | S9+ | S9− | S9+ | S9− | S9+ | S9− | S9+ | S9− | S9+ |
| Air | ( 117 ) | ( 116 ) | ( 8 ) | ( 7 ) | ( 70 ) | ( 92 ) | ( 21 ) | ( 22 ) | ( 6 ) | ( 8 ) |
| | 121 | 120 | 11 | 11 | 68 | 96 | 20 | 26 | 10 | 13 |
| | 98 | 117 | 9 | 5 | 81 | 86 | 15 | 24 | 3 | 3 |
| 0 .00001 | ( 110 ) | ( 119 ) | ( 10 ) | ( 8 ) | ( 75 ) | ( 91 ) | ( 18 ) | ( 25 ) | ( 7 ) | ( 8 ) |
| | 115 | 98 | 15 | 9 | 72 | 117 | 16 | 17 | 2 | 6 |
| | 111 | 96 | 5 | 7 | 90 | 115 | 20 | 30 | 3 | 6 |
| 0 .00005 | ( 113 ) | ( 97 ) | ( 10 ) | ( 8 ) | ( 81 ) | ( 116 ) | ( 18 ) | ( 24 ) | ( 3 ) | ( 6 ) |
| | 122 | 131 | 16 | 13 | 85 | 112 | 17 | 26 | 6 | 2 |
| | 117 | 128 | 14 | 16 | 115 | 115 | 29 | 21 | 6 | 16 |
| 0 .0001 | ( 120 ) | ( 130 ) | ( 15 ) | ( 15 ) | ( 100 ) | ( 114 ) | ( 23 ) | ( 24 ) | ( 6 ) | ( 9 ) |
| | 115 | 106 | 14 | 15 | 62 | 96 | 22 | 25 | 8 | 8 |
| | 123 | 106 | 8 | 8 | 87 | 114 | 20 | 26 | 8 | 6 |
| 0 .0005 | ( 119 ) | ( 106 ) | ( 11 ) | ( 12 ) | ( 75 ) | ( 105 ) | ( 21 ) | ( 26 ) | ( 8 ) | ( 7 ) |
| | 127 | 151 | 14 | 16 | 99 | 142 | 18 | 20 | 5 | 3 |
| | 120 | 133 | 10 | 20 | 89 | 144 | 24 | 20 | 5 | 5 |
| 0 .001 | ( 124 ) | ( 142 ) | ( 12 ) | ( 18 ) | ( 94 ) | ( 143 ) | ( 21 ) | ( 20 ) | ( 5 ) | ( 4 ) |
| | 174 | 176 | 54 | 51 | 299 | 215 | 15 | 21 | 5 | 7 |
| | 177 | 160 | 52 | 43 | 329 | 235 | 14 | 20 | 5 | 14 |
| 0 .005 | ( 176 ) | ( 168 ) | ( 53 ) | ( 47 ) | ( 314 ) | ( 225 ) | ( 15 ) | ( 21 ) | ( 5 ) | ( 11 ) |
| | 199 | 199 | 93 | 63 | 439 | 336 | 28 | 18 | 11 | 6 |
| | 207 | 204 | 84 | 64 | 436 | 425 | 22 | 30 | 6 | 11 |
| 0 .01 | ( 203 ) | ( 202 ) | ( 89 ) | ( 64 ) | ( 438 ) | ( 381 ) | ( 25 ) | ( 24 ) | ( 9 ) | ( 9 ) |
| | 126 | 2 | 3 | 5 | 807 | 692 | 5 | 0 | 0 | 2 |
| | 101 | 1 | 3 | 2 | 818 | 573 | 3 | 3 | 0 | 0 |
| 0 .05 | ( 114 ) | ( 2 ) | ( 3 ) | ( 4 ) | ( 813 ) | ( 633 ) | ( 4 ) | ( 2 ) | ( 0 ) | ( 1 ) |
| | 10 * | 0 * | 0 * | 2 * | 31 * | 6 * | 0 * | 0 * | 0 * | 0 * |
| | 13 * | 0 * | 0 * | 0 * | 29 * | 6 * | 0 * | 0 * | 0 * | 0 * |
| 0 .1 | ( 12 *) | ( 0 *) | ( 0 *) | ( 1 *) | ( 30 *) | ( 6 *) | ( 0 *) | ( 0 *) | ( 0 *) | ( 0 *) |
| Judgement | − | − | + | + | + | + | − | − | − | − |
| Specific Mutagenicity # | | | 0.005 | 0.001 | 0.005 | 0.005 | | | | |
| Positive Control | AF-2 ( 543 ) | 2-AA ( 1171 ) | $NaN_3$ ( 357 ) | 2-AA ( 238 ) | AF-2 ( 945 ) | 2-AA ( 885 ) | AF-2 ( 726 ) | 2-AA ( 313 ) | 9-AA ( 580 ) | 2-AA ( 203 ) |

* Growth inhibition was observed.

\# The concentration which was two times of the negative control value was shown.