### Hydrazine (anhydrous) (ヒドラジン (無水))

**Chemical Name:** Hydrazine (anhydrous)

**Synonym:**

**Molecular weight:** 32.05

**Melting point:** 1.4°C

**Boiling point:** 113.5°C

**Flash point:** 52°C

**Chemical Structure:**

\[ \text{H}_2\text{N-NH}_2 \]

**CAS No.:** 302-01-2

**MITL No.:** (1-374)

**Source of Substance:** Tokyo Kasei Kogyo Co., Ltd

**Lot No.:** AY01

**Purity:** 97.5% 以上

**Vehicle:** H₂O

**Mutagenicity in Bacterial Test:** Positive

**IARC Evaluation:** G 2B

### Experimental Data

<table>
<thead>
<tr>
<th>Concentration (µg/plate)</th>
<th>Base-substitution</th>
<th>Number of Revertants/plate</th>
<th>Frame-shift</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TA100 S9⁻ S9⁺</td>
<td>TA1535 S9⁻ S9⁺</td>
<td>WP2uvrA S9⁻ S9⁺</td>
</tr>
<tr>
<td>H₂O</td>
<td>(140) (144) (14) (12) (35) (30)</td>
<td>(15) (24) (7) (8)</td>
<td>165 (166) 9 8 33 30</td>
</tr>
<tr>
<td>0.0763 (172) (155) (8) (8) (31) (33)</td>
<td>(11) (22) (5) (13)</td>
<td>153 (144) 11 15 40 44</td>
<td>17 24 2 6</td>
</tr>
<tr>
<td>0.305 (155) (139) (13) (14) (36) (33)</td>
<td>(13) (23) (4) (10)</td>
<td>169 (145) 17 16 37 40</td>
<td>15 26 10 7</td>
</tr>
<tr>
<td>1.22 (152) (154) (18) (17) (41) (48)</td>
<td>(18) (24) (8) (8)</td>
<td>130 (129) 21 21 71 85</td>
<td>13 24 6 7</td>
</tr>
<tr>
<td>4.88 (136) (145) (23) (21) (78) (110)</td>
<td>(12) (22) (7) (8)</td>
<td>159 (177) 25 47 163 638</td>
<td>15 31 7 6</td>
</tr>
<tr>
<td>19.5 (156) (171) (30) (40) (172) (676)</td>
<td>(17) (27) (8) (6)</td>
<td>142 (221) 46 109 405 1736</td>
<td>20 21 6 8</td>
</tr>
<tr>
<td>78.1 (156) (227) (43) (103) (415) (1657)</td>
<td>(22) (21) (12) (6)</td>
<td>66* (268) 0* 187 596 1783</td>
<td>0* 23 0* 8</td>
</tr>
<tr>
<td>313 (143) (268) (0*) (174) (517) (1575)</td>
<td>(0*) (26) (0*) (8)</td>
<td>0* (180) 0* 172* 0* 2155</td>
<td>0* 15 0* 6*</td>
</tr>
<tr>
<td>1250 (0*) (182) (0*) (161*) (0*) (2317)</td>
<td>(0*) (19) (0*) (8*)</td>
<td>0* 0* 0* 0* 0* 0*</td>
<td>0* 0* 0* 0*</td>
</tr>
<tr>
<td>5000 (0*) (0*) (0*) (0*) (0*) (0*)</td>
<td>(0*) (0*) (0*) (0*)</td>
<td>821 1440 8810 33100</td>
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</tr>
</tbody>
</table>

**Positive:** AF2, 2AA, NaN₃, 2AA, AF2, 2AA, AF2, 2AA, 9AA, 2AA

**Control:** (1158), (1530), (360), (331), (196), (1366), (382), (363), (1219), (113)
<table>
<thead>
<tr>
<th>Concentration (µg/plate)</th>
<th>Base-substitution (TA100)</th>
<th>Base-substitution (TA1535)</th>
<th>WP2uvrA</th>
<th>Frame-shift (TA98)</th>
<th>Frame-shift (TA1537)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S9- / S9+</td>
<td>S9- / S9+</td>
<td>S9- / S9+</td>
<td>S9- / S9+</td>
<td>S9- / S9+</td>
</tr>
<tr>
<td><strong>H₂O</strong></td>
<td>(158) / (144)</td>
<td>(12) / (9)</td>
<td>(24) / (25)</td>
<td>(17) / (24)</td>
<td>(8) / (6)</td>
</tr>
<tr>
<td>4.88</td>
<td>(16) / (17)</td>
<td>(81) / (233)</td>
<td>(17) / (9)</td>
<td>(17) / (9)</td>
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<tr>
<td>9.77</td>
<td>(145) / (29)</td>
<td>(31) / (137)</td>
<td>(534) / (20)</td>
<td>(6) / (6)</td>
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</tr>
<tr>
<td>19.5</td>
<td>(164) / (31)</td>
<td>(46) / (218)</td>
<td>(860) / (21)</td>
<td>(6) / (6)</td>
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</tr>
<tr>
<td>39.1</td>
<td>(167) / (40)</td>
<td>(75) / (407)</td>
<td>(1767) / (16)</td>
<td>(7) / (5)</td>
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</tr>
<tr>
<td>78.1</td>
<td>(173) / (53)</td>
<td>(142) / (545)</td>
<td>(2346) / (41)</td>
<td>(12) / (6)</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>(219) / (51)</td>
<td>(184) / (714)</td>
<td>(1839) / (0)</td>
<td>(24) / (8)</td>
<td></td>
</tr>
</tbody>
</table>

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### Experimental Data

<table>
<thead>
<tr>
<th>µg/plate</th>
<th>TA100</th>
<th>TA1535</th>
<th>WP2uvrA</th>
<th>TA98</th>
<th>TA1537</th>
</tr>
</thead>
<tbody>
<tr>
<td>190 µg</td>
<td>505</td>
<td>1740</td>
<td>2250</td>
<td>11700</td>
<td>52100</td>
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<tr>
<td>265 µg</td>
<td>228</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>1250 µg</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2500 µg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5000 µg</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Judgement**

- Specific mutagenicity
  - Positive
    - AF2
    - 2AA
    - NaN
    - 2AA
    - AF2
    - 2AA
    - AF2
    - 2AA
    - 9AA
    - 2AA

- Control
  - (1240)
  - (1054)
  - (365)
  - (270)
  - (211)
  - (1464)
  - (492)
  - (377)
  - (1189)
  - (134)