

201-15925C

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C Import/Export - File for the
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C International Uniform Chemical Information Database
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C Column 1- 4: Blocknumber / Fieldnumber
C Column 6-80: Blockname / Fieldvalue
C Date      : 10-MAY-2005 08:29:08
C Company   : BBL Sciences 45242 Cincinnati, Ohio
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V   IUCLID-Export V4.00
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CS  ISO-Latin 1
C
NL  GBR
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B005 SUBST_MASTER_TAB
F001 107-18-6
F002 Y26-001
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B006 SUBST_IDENT_TAB
F001 107-18-6
F002 Y28-001
F003 Y27-001
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F005 1
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F002 Y28-002
F003 Y27-006
F004 allyl alcohol
F005 2
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F001 107-18-6
F002 Y28-001
F003 Y27-002
F004 203-470-7
F005 3
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F001 107-18-6
F002 Y28-002
F003 Y27-030
F004 2-Propen-1-ol
F005 4
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F001 107-18-6
F002 Y28-003
F003 Y27-003
F004 C3H6O
F005 102
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B003 DS_ADMIN_TAB
F002 9
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F001 107-18-6
F009 N
F005 12033520
F006 01-09-2003
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F008 01-09-2003
F003 10-05-2005
F101 AA HPV dataset
F102 A35-01
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B004 COMPANY_TAB
F001 12033520
F003 Lyondell Chemical Co.
F004 1221 McKinney Street, #1600
F005 Houston, Texas
F006 77010
F008 A31-024
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C ***** NEW DATA SET *****
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D 9
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B052 DS_COMPONENT_JOIN_TAB
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F007 07-11-2003
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F005 1
F006 11-11-2003
F007 07-11-2003
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F007 07-11-2003
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F007 22-10-2003
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F007 25-11-2003
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F007 20-10-2003
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F003 2.2
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F007 20-10-2003
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F003 2.2
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F006 03-11-2003
F007 20-10-2003
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F007 20-10-2003
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F007 20-10-2003
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F007 20-10-2003
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F003 2.4
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F007 20-10-2003
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F007 22-10-2003
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F007 23-10-2003
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F007 31-10-2003
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F003 3.1.2
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F007 26-04-2005
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F004 1
F005 1
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F007 03-11-2003
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F007 03-11-2003
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F007 22-10-2003
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F006 22-10-2003
F007 10-10-2003
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F003 3.8
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F007 17-10-2003
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F003 3.8
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F007 17-10-2003
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F007 17-10-2003
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F006 03-05-2005
F007 10-10-2003
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F007 25-09-2003
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F003 5.6

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F003 5.6
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F007 09-10-2003
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F007 09-10-2003
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F004 1
F005 1
F006 04-11-2003
F007 01-10-2003
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F001 9
F002 0
F003 5.8.1
F004 2
F005 2
F006 04-11-2003
F007 04-11-2003
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F001 9
F002 0
F003 5.8.2
F004 1
F005 1
F006 03-05-2005
F007 09-10-2003
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F001 9
F002 0
F003 5.8.2
F004 2

F005 2
F006 03-05-2005
F007 27-04-2005

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B051 DS_COMPONENT_TAB

F001 9

F002 0

F003 107-18-6

F012 N

F010 21-11-2003

F004 12033520

F005 01-09-2003

F006 12033520

F007 01-09-2003

F008 AA HPV dataset

F009 A35-01

EOB

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B115 GI_COMPANY_TAB

F001 9

F002 1

F003 26-04-2005

F004 IUC4

F008 Lyondell Chemical Co.

F009 One Houston Center, Suite 700, 1221 McKinney Street

F010 Houston, Texas TX 77010

F013 A31-024

F018 Dr Marcy I Banton

EOB

C

B007 GI_SUBSTANCE_TAB

F001 9

F002 1

F003 07-11-2003

F004 IUC4

F008 C3H6O

F009 58.08

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B101 GI_GENERAL_INFORM_TAB

F001 9

F002 1

F003 25-11-2003

F004 IUC4

F007 A02-05

F008 99

F010 A04-04

F011 A19-02

F014 C02-001

F015 clear, colorless

F016 sharp, mustard-like

F017 C51-001

EOB

C

B102 GI_SYNONYM_TAB

F001 9

F002 1
F003 11-11-2003
F004 IUC4
F007 propenol, 1-propen-3-ol, vinyl carbinol, 3-hydroxypropene, 2-propen-1-ol,
* 2-propenyl alcohol.
EOB
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B103 GI_IMPURITIES_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4
F015 C02-001
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B105 GI_QUANTITY_TAB
F001 9
F002 2
F003 25-11-2003
F004 IUC4
F013 1
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B108 GI_CATEGORY_TAB
F001 9
F002 1
F003 25-11-2003
F004 IUC4
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B109 GI_EXPO_LIMIT_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4
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B201 PC_MELTING_TAB
F001 9
F002 6
F003 03-11-2003
F004 IUC4
F015 A36-003
F016 1
F007 A02-03
F008 -129
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B202 PC_BOILING_TAB
F001 9
F002 4
F003 03-11-2003
F004 IUC4
F016 A36-003
F017 1
F007 A02-03
F008 97

EOR
F001 9
F002 5
F003 03-11-2003
F004 IUC4
F016 A36-003
F017 2
F007 A02-03
F008 96.9
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B203 PC_DENSITY_TAB
F001 9
F002 5
F003 03-11-2003
F004 IUC4
F016 A36-003
F017 1
F007 P05-02
F008 A02-03
F009 .854
F011 P18-01
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F001 9
F002 6
F003 03-11-2003
F004 IUC4
F016 A36-003
F017 2
F007 P05-02
F008 A02-03
F009 .825
F011 P18-01
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B204 PC_VAPOUR_TAB
F001 9
F002 3
F003 03-11-2003
F004 IUC4
F015 A36-003
F016 2
EOB
F001 9
F002 4
F003 03-11-2003
F004 IUC4
F015 A36-003
F016 3
EOB
F001 9
F002 5
F003 03-11-2003
F004 IUC4
F015 A36-003
F016 4
EOB

F001 9
F002 6
F003 03-11-2003
F004 IUC4
F015 A36-003
F016 1
EOB
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B205 PC_PARTITION_TAB
F001 9
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F003 03-11-2003
F004 IUC4
F014 A36-003
F015 1
F007 A02-03
F008 .17
F020 C15-001
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F002 2
F003 03-11-2003
F004 IUC4
F014 A36-003
F007 A02-03
F008 -.25
F020 C15-001
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B206 PC_WATER_SOL_TAB
F001 9
F002 5
F003 03-11-2003
F004 IUC4
F023 A36-003
F024 2
F030 C14-001
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F001 9
F002 6
F003 03-11-2003
F004 IUC4
F023 A36-003
F024 3
F030 C14-001
EOR
F001 9
F002 7
F003 03-11-2003
F004 IUC4
F023 A36-003
F024 1
F030 C14-001
EOB
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B207 PC_FLASH_TAB
F001 9

F002 2
F003 03-11-2003
F004 IUC4
F013 A36-003
F007 A02-03
F008 21
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F001 9
F002 3
F003 03-11-2003
F004 IUC4
F013 A36-003
F014 1
F007 A02-03
F008 21.1
F009 P10-02
EOR
F001 9
F002 4
F003 03-11-2003
F004 IUC4
F013 A36-003
F014 2
F007 A02-03
F008 23.9
F009 P10-01
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B301 EN_PHOTODEGRADATION_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4
F045 A36-003
F008 F01-02
F010 1991
F043 A03-02
EOR
F001 9
F002 2
F003 05-11-2003
F004 IUC4
F045 A36-003
F008 F01-01
F010 1993
EOR
F001 9
F002 3
F003 31-10-2003
F004 IUC4
F045 A36-003
F008 F01-01
F011 F03-03: high pressure mercury vapor lamp
F012 A02-03
F013 300
F014 230
EOR

F001 9
F002 4
F003 31-10-2003
F004 IUC4
F045 A36-003
F008 F01-02
F010 1989
F043 A03-02

EOB

F001 9
F002 5
F003 18-11-2003
F004 IUC4
F045 A36-003
F008 F01-01
F010 1993
F043 A03-02

EOB

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B302 EN_STABILITY_IN_WATER_TAB

F001 9
F002 1
F003 26-04-2005
F004 IUC4
F041 1

EOB

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B305 EN_TRANSPORT_TAB

F001 9
F002 1
F003 10-05-2005
F004 IUC4
F011 A36-003
F012 1
F007 F20-05

F009 F21-01: Level 1 Mackay Fugacity Model Version 2.11, August 1999 from
* <http://www.trentu.ca/cemc/models.html>.

EOB

F001 9
F002 2
F003 21-11-2003
F004 IUC4
F011 A36-003
F012 2
F007 F20-07

F009 F21-01: Level 1 Mackay Fugacity Model Version 2.11, August 1999 from
* <http://www.trentu.ca/cemc/models.html>.

EOB

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B308 EN_BIODEGRADATION_TAB

F001 9
F002 2
F003 15-11-2003
F004 IUC4
F047 A36-003
F008 F25-01
F010 1995

F046 A03-02
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F001 9
F002 3
F003 21-11-2003
F004 IUC4
F047 A36-003
F008 F25-02
F010 1995
F046 A03-02
EOR
F001 9
F002 5
F003 21-11-2003
F004 IUC4
F047 A36-003
F048 1
F008 F25-01
F010 1989
F011 F27-0166: settled sewage seed
F012 2.5
F013 F28-05
F014 F29-03
F021 A02-03
F023 9
F024 5
F025 F31-01
F026 A02-03
F028 55
F029 10
F030 F31-01
F031 A02-03
F033 78
F034 15
F035 F31-01
F036 A02-03
F038 82
F039 20
F040 F31-01
F046 A03-02
EOR
F001 9
F002 6
F003 18-11-2003
F004 IUC4
F047 A36-003
F048 2
F008 F25-01
F010 1992
F046 A03-02
EOB
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B309 EN_BOD_COD_TAB
F001 9
F002 1
F003 22-10-2003
F004 IUC4

F022 A36-003
F007 F32-03: standard dilution method
F008 1955
F009 A03-01
EOR
F001 9
F002 2
F003 22-10-2003
F004 IUC4
F022 A36-003
F023 1
F007 F32-03: APHA Standard Method No 219 (1971)
F008 1979
F009 A03-01
F015 F33-03: ASTM D 1252-67 (1974)
F016 1979
F017 A03-01

EOB

C

B310 EN_BIOACCUMULATION_TAB
F001 9
F002 1
F003 18-11-2003
F004 IUC4
F021 A36-003
F008 E02-0161: predicted value
F016 A02-03
F017 3.16

EOB

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B311 EN_OTHER_TAB
F001 9
F002 1
F003 04-11-2003
F004 IUC4
F008 A36-005
F009 Predicted half-life in soil
EOR
F001 9
F002 2
F003 04-11-2003
F004 IUC4
F008 A36-005
F010 1
F009 Predicted half-life in air
EOR
F001 9
F002 3
F003 04-11-2003
F004 IUC4
F008 A36-005
F010 2
F009 Predicted half-life in surface water
EOR
F001 9
F002 4
F003 04-11-2003

F004 IUC4
F008 A36-005
F009 Predicted aqueous half life (aerobic biodegradation)
EOR
F001 9
F002 6
F003 04-11-2003
F004 IUC4
F008 A36-005
F009 Predicted aqueous half life (anaerobic biodegradation)
EOB

C
B401 EC_FISHTOX_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4
F033 A36-003
F007 A01-01
F008 E01-03: Acute toxicity - fish
F009 E02-0015
F010 E03-05: APHA Method 231 (1971)
F011 1979
F012 24
F013 E04-02
F014 E05-02
F021 A02-06
F022 1
F031 A03-03
F032 A03-01
F045 E35-01

EOR
F001 9
F002 2
F003 03-05-2005
F004 IUC4
F033 A36-003
F034 1
F007 A01-01
F008 E01-03: Acute toxicity - fish
F009 E02-0119
F011 1986
F012 96
F013 E04-02
F014 E05-02
F021 A02-03
F022 .32
F031 A03-01
F032 A03-02
F045 E35-01

EOB
C
B402 EC_DAPHNIATOX_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4

F032 A36-003
F033 1
F007 A01-01
F008 E06-0010
F010 1986
F011 96
F012 E04-02
F013 E05-02
F020 A02-03
F021 .25
F022 .4
F030 A03-01
F031 A03-02
F042 E01-03: Acute toxicity - aquatic invertebrate
F045 E35-01
EOR
F001 9
F002 2
F003 10-05-2005
F004 IUC4
F032 A36-002
F033 2
F007 A01-01
F008 E06-0010
F009 E07-04: OECD Guideline 202 (Part I) - Daphnia sp., Acute immobilization
* test and reproduction test
F010 2005
F011 48
F012 E04-02
F013 E05-02
F020 A02-03
F021 1.65
F026 EC50 (24 hr)
F027 A02-03
F028 3.66
F030 A03-03
F031 A03-03
F042 E01-03: Acute toxicity - aquatic invertebrate
F045 E35-02
F047 E35-02
EOB
C
B403 EC_ALGAETOX_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4
F036 A36-002
F037 1
F007 A01-01
F008 E08-0063: Pseudokirchmeriella subcapitata (green algae)
F009 E09-03
F010 2005
F011 E10-02
F012 72
F013 E04-02
F014 E05-02

F027 A02-03
F028 5.38
F030 EC50 Biomass
F031 A02-03
F032 2.25
F034 A03-03
F035 A03-03
F050 E35-02
F051 E35-02

EOB

C

B017 TO_META_MAM_TAB

F001 9

F002 1

F003 03-05-2005

F004 IUC4

F005 A36-003

F006 1

F007 C08-002

F008 C13-004

F009 T02-24

F035 1972

F036 A03-01

F037 A01-01

EOR

F001 9

F002 2

F003 03-05-2005

F004 IUC4

F005 A36-003

F006 2

F007 C08-002

F008 C13-004

F009 T02-24

F035 1983

F036 A03-02

F037 A01-01

EOB

C

B501 TO_ACUTE_ORAL_TAB

F001 9

F002 1

F003 26-04-2005

F004 IUC4

F017 A36-003

F007 A01-01

F008 T01-03

F009 T02-24

F011 1958

F012 A02-03

F013 99

F014 105

F015 T04-01

F016 A03-01

F019 T24-02

F020 5

F021 T52-007

F022 T23-24
F023 75-130 mg/kg bw; 79-140 mg/kg bw
EOR
F001 9
F002 2
F003 25-09-2003
F004 IUC4
F017 A36-003
F007 A01-01
F008 T01-03
F009 T02-18
F011 1958
F012 A02-03
F013 96
F015 T04-01
F016 A03-01
F019 T24-02
F020 6
F021 T52-007
F022 T23-45
F023 84-110 mg/kg bw
EOR
F001 9
F002 3
F003 06-10-2003
F004 IUC4
F017 A36-005
F007 A01-01
F008 T01-03
F009 T02-24
F011 1948
F012 A02-03
F013 64
F015 T04-01
F016 A03-01
F019 T24-04
F022 T23-40
EOR
F001 9
F002 5
F003 03-05-2005
F004 IUC4
F017 A36-003
F018 1
F007 A01-01
F008 T01-03
F009 T02-24
F011 1964
F012 A02-03
F013 70
F015 T04-01
F016 A03-01
F019 T24-03
F020 10
F021 T52-007
F022 T23-32
EOB

C

B502 TO_ACUTE_INHAL_TAB

F001 9

F002 1

F003 22-10-2003

F004 IUC4

F019 A36-003

F020 1

F007 A01-01

F008 T05-03

F009 T02-24

F011 1958

F012 A02-03

F013 125

F014 140

F015 T07-02

F016 4

F017 T08-01

F018 A03-01

F021 T24-02

F022 6

F024 T23-24

F025 127-225 ppm (nominal)

EOR

F001 9

F002 2

F003 15-11-2003

F004 IUC4

F019 A36-005

F020 2

F007 A01-01

F008 T05-03

F009 T02-24

F011 1949

F012 A02-06

F013 250

F015 T07-02

F016 4

F017 T08-01

F018 A03-01

F021 T24-03

F022 6

F024 T23-40

EOR

F001 9

F002 4

F003 15-11-2003

F004 IUC4

F019 A36-005

F007 A01-01

F008 T05-01

F011 1932

F018 A03-01

EOB

C

B503 TO_ACUTE_DERMAL_TAB

F001 9

F002 1
F003 22-10-2003
F004 IUC4
F017 A36-003
F007 A01-01
F008 T01-03
F009 T02-23
F011 1958
F012 A02-03
F013 89
F015 T04-01
F016 A03-01
F019 T24-02
F020 3
F022 T23-48: albino (no further details)
F023 25-200 mg/kg bw (4 treatment levels)

EOR

F001 9
F002 2
F003 22-10-2003
F004 IUC4
F017 A36-005
F007 A01-01
F008 T01-03
F009 T02-23
F011 1948
F012 A02-03
F013 .053
F015 T04-02
F016 A03-01
F019 T24-04
F022 T23-47

EOB

C

B505 TO_SKIN_IRRITATION_TAB

F001 9
F002 1
F003 17-10-2003
F004 IUC4
F014 A36-003
F007 A01-01
F008 T02-23
F009 T14-02
F010 1958
F012 T46-07
F013 A03-01
F017 T49-001
F018 T50-001
F019 24
F020 T55-001
F021 3

EOB

C

B506 TO_EYE_IRRITATION_TAB

F001 9
F002 1
F003 17-10-2003

F004 IUC4
F014 A36-003
F007 A01-01
F008 T02-23
F009 T16-02
F010 1958
F012 T46-04
F013 A03-01
F017 T49-001
F018 .05
F019 T56-001
F020 48
F021 T08-01
F022 3
EOR
F001 9
F002 2
F003 03-05-2005
F004 IUC4
F014 A36-005
F007 A01-01
F008 T02-23
F010 1946
F012 T46-04
F013 A03-01
EOR
F001 9
F002 3
F003 15-11-2003
F004 IUC4
F014 A36-003
F015 1
F007 A01-01
F008 T02-23
F009 T16-01
F010 1989
F012 T46-04
F013 A03-02
F017 T49-001
F018 .1
F019 T56-001
F020 4
F021 T08-01
F022 6
F024 T59-003
EOB
C
B508 TO_REPEATED_DOSE_TAB
F001 9
F002 1
F003 03-05-2005
F004 IUC4
F030 A36-003
F007 A01-01
F008 T02-24
F009 T23-46
F010 T24-03

F011 T25-02
F013 1978
F014 15 wk
F015 daily
F016 none
F017 0, 50, 100, 200 or 800 ppm
F018 T27-05
F019 A02-03
F020 50
F022 T28-05
F029 A03-01
F032 C07-002
EOR
F001 9
F002 2
F003 15-11-2003
F004 IUC4
F030 A36-003
F007 A01-01
F008 T02-24
F009 T23-24
F010 T24-02
F011 T25-08
F013 1958
F014 12 wk
F015 7 hr/d, 5 d/wk
F017 0 (air), 1, 5, 20 ppm; 0 (air), 40, 60 ppm ; 0 (air), 100, 150 ppm
F018 T27-05
F019 A02-03
F020 20
F022 T28-05
F024 A02-03
F025 40
F027 T28-05
F029 A03-01
F032 C07-002
EOR
F001 9
F002 3
F003 25-11-2003
F004 IUC4
F030 A36-003
F007 A01-01
F008 T02-24
F009 T23-24
F010 T24-03
F011 T25-02
F013 1958
F014 13 wk
F015 continuous
F017 0 (water), 1, 5, 50, 100 or 250 ppm; 0, 500 or 1000 ppm
F018 T27-05
F019 A02-03
F020 100
F022 T28-05
F024 A02-03
F025 250

F027 T28-05
F029 A03-01
F032 C07-002
EOR
F001 9
F002 5
F003 25-11-2003
F004 IUC4
F007 A01-03
F008 T02-24
F009 T23-16
F010 T24-03
F011 T25-03
F014 13 wk
F017 0, 1.5, 3, 6, 12 or 25 mg/kg bwt/d
F029 A03-03
F032 C07-002
EOR
F001 9
F002 6
F003 25-11-2003
F004 IUC4
F007 A01-01
F008 T02-18
F009 T23-03
F010 T24-03
F011 T25-03
F014 13 wk
F017 0, 3, 6, 12, 25 or 50 mg/kg bwt/d
F029 A03-03
F032 C07-002
EOR
F001 9
F002 7
F003 15-11-2003
F004 IUC4
F030 A36-005
F007 A01-01
F008 T02-24
F009 T23-47
F010 T24-04
F011 T25-08
F013 1932
F029 A03-01
F032 C07-001
EOB
C
B509 TO_GENETIC_IN_VITRO_TAB
F001 9
F002 1
F003 26-04-2005
F004 IUC4
F016 A36-005
F017 6
F007 A01-01
F008 T30-11
F010 1990

F011 V79 cells, 6-thioguanine resistance
F012 T32-01
F013 T33-03
F014 A03-02
F015 1 or 2 μ M (equivalent to 58 or 116 ng/ml)
F018 >2 μ M
EOR
F001 9
F002 2
F003 03-05-2005
F004 IUC4
F016 A36-003
F017 4
F007 A01-01
F008 T30-05
F010 1981
F011 *Salmonella typhimurium* TA1535, TA1537, TA1538, TA98, TA100
F012 T32-03
F013 T33-02
F014 A03-01
F015 0.025, 0.05, 0.10 μ l/plate
F018 >0.10 μ l/plate
EOR
F001 9
F002 3
F003 26-04-2005
F004 IUC4
F016 A36-003
F017 5
F007 A01-01
F008 T30-03
F010 1981
F011 *Streptomyces coelicolor*, resistance to streptomycin
F012 T32-04
F013 T33-02
F014 A03-01
F015 2-100 μ l/plate
F018 >100 μ l/plate
EOR
F001 9
F002 4
F003 26-04-2005
F004 IUC4
F016 A36-003
F017 7
F007 A01-01
F008 T30-19: fungal point mutation
F010 1981
F011 *Aspergillus nidulans*
F012 T32-04
F013 T33-02
F014 A03-01
F015 10-40 μ l/plate
F018 >40 μ l/plate
EOR
F001 9
F002 5

F003 22-10-2003
F004 IUC4
F016 A36-003
F017 1
F007 A01-01
F008 T30-05
F010 1980
F011 Salmonella typhimurium TA1535, TA1537, TA1538, TA98 and TA100
F012 T32-03
F013 T33-03
F014 A03-01
F015 10-500 ug/plate
F018 500 ug/plate
EOR
F001 9
F002 6
F003 22-10-2003
F004 IUC4
F016 A36-003
F017 2
F007 A01-01
F008 T30-05
F010 1982
F011 Salmonella typhimurium TA100
F012 T32-03
F013 T33-03
F014 A03-02
F015 up to 0.15 umol/2 ml incubation (equivalent to approx. 9 ug/2 ml)
F018 <50% survival at 0.075 umol/2 ml incubation (approx. 4.5 ug/2 ml)
EOR
F001 9
F002 7
F003 03-05-2005
F004 IUC4
F016 A36-003
F017 3
F007 A01-01
F008 T30-05
F009 T31-18: US-NTP standard protocol
F010 2003
F011 Salmonella typhimurium TA100, TA1535, TA97, TA98
F012 T32-03
F013 T33-02
F014 A03-03
F015 0.3-166 ug/plate or 3-333 ug/plate
F018 333 ug/plate
EOR
F001 9
F002 8
F003 03-05-2005
F004 IUC4
F016 A36-002
F017 8
F007 A01-01
F008 T30-05
F009 T31-18: OECD Guideline 471. Bacterial Reverse Mutation Assay, and USEPA
* Health Effects Test Guideline OPPTS 870.5100. Bacterial Reverse Mutation

* Test.
F010 2004
F011 Salmonella typhimurium TA1535, TA1537, TA98 and TA100 Escherichia coli
* WPuvrA (PKM101)
F012 T32-03
F013 T33-02
F014 A03-03
F015 5.0-200 ug/plate (TA1535, TA1537, TA98 and TA100 ±S9 mix)
** 100-5000 ug/plate (WP2 uvrA (pKM101) -S9 mix)
** 50-2500 ug/plate (WP2 uvrA (pKM101) +S9 mix)
F018 200 ug/plate (TA1535, TA1537, TA98 and TA100 ±S9 mix)
** 5000 ug/plate (WP2 uvrA (pKM101) -S9 mix)
** 2500 ug/plate (WP2 uvrA (pKM101) +S9 mix)
EOR
F001 9
F002 9
F003 03-05-2005
F004 IUC4
F016 A36-002
F017 9
F007 A01-01
F008 T30-11
F009 T31-18: OECD Guideline 476. In Vitro Mammalian Cell Gene Mutation Test;
* EU Annex V to Council Directive 67/548/EEC published in the 26th
* Adaptation, Commission Directive 2000/32/EC of May 19, 2000, OJ L136
* 8.6.2000. B17: In Vitro Mammal
F010 2004
F011 Mouse Lymphoma Cells L5178Y
F012 T32-03
F013 T33-03
F014 A03-03
F015 5-40 ug/mL (with S9 mix)
** 50-581 ug/mL (without S9 mix)
F018 30 ug/mL (with S9 mix)
** 581 ug/mL (without S9 mix)
EOR
F001 9
F002 10
F003 03-05-2005
F004 IUC4
F016 A36-002
F017 10
F007 A01-01
F008 T30-20
F009 T31-18: OECD Guideline 473. In Vitro Mammalian Chromosome Aberration Test
* and EU Annex V to Council Directive 67/548/EEC published in the 26th
* Adaptation, Commission Directive 2000/32/EC of May 19, 2000, OJ L136
* 8.6.2000. B10: In Vitro
F010 2004
F011 Human lymphocytes
F012 T32-03
F013 T33-03
F014 A03-03
F015 25-200 and 100-581 ug/mL (with S9 mix)
** 100-581 ug/mL (without S9 mix)
F018 581 ug/mL
EOB

C

B510 TO_GENETIC_IN_VIVO_TAB

F001 9

F002 1

F003 16-11-2003

F004 IUC4

F018 A36-003

F007 A01-01

F008 T34-01

F009 T02-24

F010 T23-16

F011 T37-15: US-NTP standard protocol

F012 2001

F013 T24-02

F014 T25-05

F015 72 hr

F016 0, 5, 10, 20, 40, 60 or 80 mg/kg bw

F017 A03-03

F020 T33-02

EOB

F001 9

F002 2

F003 03-05-2005

F004 IUC4

F018 A36-003

F007 A01-01

F008 T34-01

F009 T02-18

F010 T23-03

F011 T37-15: US-NTP standard protocol

F012 2001

F013 T24-03

F014 T25-03

F015 13 wk

F016 0, 3, 6, 12, 25 or 50 mg/kg bw/d

F017 A03-03

F020 T33-02

EOB

F001 9

F002 3

F003 03-05-2005

F004 IUC4

F018 A36-003

F007 A01-01

F008 T34-12: enhanced dominant lethal test (with karyotypic evaluation)

F009 T02-24

F010 T23-42

F011 T37-15: research investigation

F012 1990

F013 T24-02

F014 T25-03

F015 33 wk

F016 25 mg/kg bw

F017 A03-01

F020 T33-02

EOB

C

B511 TO_CARCIINOGENICITY_TAB

F001 9
F002 1
F003 04-11-2003
F004 IUC4
F020 A36-003
F021 1
F007 A01-01
F008 T02-24
F009 T23-16
F010 T24-03
F011 T38-02
F013 1987
F014 106 wk
F016 until natural death
F017 0 or 300 mg/l
F018 T27-05
F019 A03-02
F022 T33-02

EOR

F001 9
F002 2
F003 17-10-2003
F004 IUC4
F020 A36-005
F021 2
F007 A01-01
F008 T02-04
F010 T24-02
F011 T38-03
F013 1987
F014 60 wk
F016 until natural death
F017 0 or 2 mg/day
F018 T27-05
F019 A03-02
F022 T33-02

EOB

C

B512 TO_REPRODUCTION_TAB

F001 9
F002 1
F003 04-11-2003
F004 IUC4
F037 A36-003
F007 A01-01
F008 T41-04
F009 T02-24
F010 T23-42
F011 T24-02
F012 T25-03
F036 up to 15 wk
F013 T40-05: research investigation
F014 1990
F015 7 d/wk
F016 up to 11 wk
F017 untreated

F035 A03-01
EOR
F001 9
F002 2
F003 04-11-2003
F004 IUC4
F037 A36-003
F038 1
F007 A01-01
F008 T41-04
F009 T02-24
F010 T23-46
F011 T24-02
F012 T25-02
F036 15 wk
F014 1978
F035 A03-01

EOB

C

B513 TO_DEVELOPMENTAL_TAB

F001 9
F002 1
F003 03-05-2005
F004 IUC4
F030 A36-005
F007 A01-01
F008 T02-24
F009 T23-42
F010 T24-01
F011 T25-11: intraamniotic injection
F013 1985
F029 A03-01

EOR

F001 9
F002 2
F003 03-05-2005
F004 IUC4
F030 A36-002
F031 1
F007 A01-01
F008 T02-24
F009 T23-48: Crl:CD® (Sprague-Dawley) IGS BR
F010 T24-01
F011 T25-03
F012 T44-03: EPA Health Effects Testing Guidelines OPPTS 870.3700 and OECD
* Guideline 414 - Prenatal Developmental Toxicity Study
F013 2005
F015 Gestation day 6 through 19
F016 daily
F017 0, 10, 35, or 50 mg/kg bwt day
F018 T27-07
F019 A02-01
F020 10
F022 T43-02
F023 A02-03
F024 10
F026 T43-02

F029 A03-03
F032 T58-003
F033 A02-03
F034 10
F036 T43-02
F037 T58-004
F038 A02-03
F039 35
F041 T43-02
EOB
C
B601 TEXT_TAB
F002 9
F010 1.1.1
F004 1
F005 RE
F006 Lyondell Chemical Company (2003) Allyl Alcohol - Product
** Safety Bulletin, November 2003, pp69.
F007 Lyondell Chemical Company (2003) Allyl Alcohol - Product
** Safety Bulletin, November 2003, pp69.
F020 1082
EOR
F002 9
F010 1.1.1
F004 1
F005 RE
F006 Lyondell Chemical Company (undated) Product Application Data
** for Alyl Alcohol, pp2.
F007 Lyondell Chemical Company (undated) Product Application Data
** for Alyl Alcohol, pp2.
F020 1083
EOR
F002 9
F010 1.2
F004 1
F005 RE
F006 Lyondell Chemical Company (2003) Allyl Alcohol - Product
** Safety Bulletin, November 2003, pp69.
F007 Lyondell Chemical Company (2003) Allyl Alcohol - Product
** Safety Bulletin, November 2003, pp69.
F020 1084
EOR
F002 9
F010 1.3
F004 1
F005 RE
F006 Lyondell Chemical Company (2003) Allyl Alcohol - Product
** Safety Bulletin, November 2003, pp69.
F007 Lyondell Chemical Company (2003) Allyl Alcohol - Product
** Safety Bulletin, November 2003, pp69.
F020 1085
EOR
F002 9
F010 1.3
F004 1
F005 RM
F006 Typical impurities:

** n-propanol 0.75% w/w max
** water 0.30% w/w max
** propionaldehyde 0.01% w/w max

F007 Typical impurities:

** n-propanol 0.75% w/w max
** water 0.30% w/w max
** propionaldehyde 0.01% w/w max

F020 1086

EOR

F002 9

F010 1.5

F004 2

F005 RM

F006 Allyl alcohol (CAS 107-18-6) is an intermediate chemical
** manufactured by Lyondell Chemical Company at sites in the
** U.S. and The Netherlands. Projected global production is
** estimated at 175 million pounds. Approximately 140 million
** pounds

F007 Allyl alcohol (CAS 107-18-6) is an intermediate chemical
** manufactured by Lyondell Chemical Company at sites in the
** U.S. and The Netherlands. Projected global production is
** estimated at 175 million pounds. Approximately 140 million
** pounds will be used captively by Lyondell for manufacture of
** downstream derivatives.

**

** Allyl alcohol is also produced in Asia mainly by two
** Japanese producers, Showa Denka and Daicel. Estimated total
** Asian production is about 125 million pounds.

F020 1087

EOR

F002 9

F010 1.7

F004 1

F005 RM

F006 Allyl Alcohol is an isomer of propylene oxide, and is a
** bifunctional molecule used by chemical manufacturers for a
** multitude of purposes by reaction of the alkene
** functionality, the hydroxy functionality, or both.

**

** A significant use for A

F007 Allyl Alcohol is an isomer of propylene oxide, and is a
** bifunctional molecule used by chemical manufacturers for a
** multitude of purposes by reaction of the alkene
** functionality, the hydroxy functionality, or both.

**

** A significant use for Allyl Alcohol is as an intermediate in
** the production of 1,4-Butanediol (CAS 110-63-4) and
** 2-Methyl-1,3-Propanediol (CAS 2163-42-0). Other commercial
** uses of allyl alcohol include manufacture of allyl diglycol
** carbonate (CAS 142-22-3), used in optical resins; allyl
** glycidyl ether (CAS 106-92-3) used as silane coupling agents
** for a multitude of applications, such as water treatment and
** glass adhesion, diallyl phthalate (CAS 131-17-9), which may
** be used as a plasticizer, and allyl methacrylate (CAS
** 96-05-9) and styrene allyl alcohol (CAS 25119-62-4) resins
** for coatings applications.

F020 1088

EOR

F002 9

F010 1.8.1

F004 1

F005 RE

F006 Lyondell Chemical Company (2003) Allyl Alcohol - Product

** Safety Bulletin, November 2003, pp69.

F007 Lyondell Chemical Company (2003) Allyl Alcohol - Product

** Safety Bulletin, November 2003, pp69.

F020 1089

EOR

F002 9

F010 1.8.1

F004 1

F005 RM

F006 Occupational exposure limits:

**

** Source/Data ppm mg/m³ -- Type -- -- Notation --
** US (ACGIH)/2001 0.5 1.19 8 hr TWA Skin (Carc, N/L)

**

** MAK (AT)/1994 2 5 8 hr TWA Skin
** 4 10 30 min STEL Skin

**

** OEL (BE)/2000 2 4.9 8 hr TWA Skin
** 4 9.6 15 mi

F007 Occupational exposure limits:

**

** Source/Data ppm mg/m³ -- Type -- -- Notation --
** US (ACGIH)/2001 0.5 1.19 8 hr TWA Skin (Carc, N/L)

**

** MAK (AT)/1994 2 5 8 hr TWA Skin
** 4 10 30 min STEL Skin

**

** OEL (BE)/2000 2 4.9 8 hr TWA Skin
** 4 9.6 15 min STEL Skin

**

** MAK (DA)/1996 2 5 8 hr TWA Skin

**

** ELV (FI)/1998 2 4.8 8 hr TWA Skin
** 4 9.6 15 min STEL Skin

**

** INRS (FR)/1999 2 5 8 hr TWA Skin
** 4 9.6 15 min STEL Skin

**

** TRGS 900/2000 2 4.8 8 hr TWA Skin
** 4 9.6 15 min STEL Skin

**

** ELV (IE)/1999 2 5 8 hr TWA Skin
** 4 10 15 min STEL Skin

**

** OEL (IT)/1999 2 4.8 8 hr TWA Skin
** 5 12.1 15 min STEL Skin

**

** MAC (NL)/2000 2 5 8 hr TWA Skin

**

** ELV (NO)/1996 2 5 8 hr TWA Skin, Sen

**

**	VAL (ES)/2000		0.5	1.2	8 hr TWA	Skin
**						
**	TLV (SE)/2000		2	5	8 hr TWA	Skin
**		6	14	15 min STEL	Skin	
**						
**	SUVA/1999		2	5	8 hr TWA	Skin
**		4	10	15 min STEL	Skin	
**						
**	EH40 (OES)/2000		2	4.8	8 hr TWA	Skin
**		4	9.7	15 min STEL	Skin	

F020 1090

EOR

F002 9

F010 2.1

F004 6

F005 RE

F006 Howard, PH (1989) Allyl Alcohol. In Handbook of
 ** Environmental Fate and Exposure Data for Organic Chemicals.
 ** Lewis Publishers, pp38-43

F007 Howard, PH (1989) Allyl Alcohol. In Handbook of
 ** Environmental Fate and Exposure Data for Organic Chemicals.
 ** Lewis Publishers, pp38-43

F020 1091

EOR

F002 9

F010 2.1

F004 6

F005 RE

F006 JETOC (1992) Biodegradation and bioaccumulation data of
 ** existing chemicals based on the CSCL Japan. Japan Chemical
 ** Industry Ecology-Toxicology and Information Center (JETOC),
 ** compiled under the supervision of the Chemical Products and
 ** Safet

F007 JETOC (1992) Biodegradation and bioaccumulation data of
 ** existing chemicals based on the CSCL Japan. Japan Chemical
 ** Industry Ecology-Toxicology and Information Center (JETOC),
 ** compiled under the supervision of the Chemical Products and
 ** Safety Division, Basic Industries Bureau, Ministry of
 ** International Trade, Japan.

F020 1092

EOR

F002 9

F010 2.1

F004 6

F005 RE

F006 Verschueren, K (1996) Handbook of Environmental Data on
 ** Organic Chemicals, Van Nostrand Reinhold NY, p158.

F007 Verschueren, K (1996) Handbook of Environmental Data on
 ** Organic Chemicals, Van Nostrand Reinhold NY, p158.

F020 1093

EOR

F002 9

F010 2.1

F004 6

F005 RL

F006 Secondary literature (handbook or compilation of data)

F007 Secondary literature (handbook or compilation of data)

F020 1094
EOR
F002 9
F010 2.1
F004 6
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1095
EOR
F002 9
F010 2.2
F004 4
F005 RE
F006 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F007 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F020 1096
EOR
F002 9
F010 2.2
F004 4
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1097
EOR
F002 9
F010 2.2
F004 4
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1098
EOR
F002 9
F010 2.2
F004 5
F005 RE
F006 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F007 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F020 1099
EOR
F002 9
F010 2.2
F004 5
F005 RL
F006 Secondary literature (handbook or compilation of data)

F007 Secondary literature (handbook or compilation of data)
F020 1100
EOR
F002 9
F010 2.2
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1101
EOR
F002 9
F010 2.3
F004 5
F005 RE
F006 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F007 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F020 1102
EOR
F002 9
F010 2.3
F004 5
F005 RE
F006 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F007 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F020 1103
EOR
F002 9
F010 2.3
F004 5
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1104
EOR
F002 9
F010 2.3
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1105
EOR
F002 9
F010 2.3

F004 6
F005 RE
F006 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F007 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F020 1106
EOR
F002 9
F010 2.3
F004 6
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1107
EOR
F002 9
F010 2.3
F004 6
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1108
EOR
F002 9
F010 2.4
F004 3
F005 RE
F006 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F007 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F020 1109
EOR
F002 9
F010 2.4
F004 3
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1110
EOR
F002 9
F010 2.4
F004 3
F005 RM
F006 23.8 mm Hg at 25 degrees C
F007 23.8 mm Hg at 25 degrees C
F020 1111
EOR
F002 9
F010 2.4
F004 3

F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1112
EOR
F002 9
F010 2.4
F004 4
F005 RE
F006 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F007 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F020 1113
EOR
F002 9
F010 2.4
F004 4
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1114
EOR
F002 9
F010 2.4
F004 4
F005 RM
F006 20 mm Hg at 20 degrees C
**
** 32 mm Hg at 30 degrees C
F007 20 mm Hg at 20 degrees C
**
** 32 mm Hg at 30 degrees C
F020 1115
EOR
F002 9
F010 2.4
F004 4
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1116
EOR
F002 9
F010 2.4
F004 5
F005 RE
F006 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F007 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43

F020 1117
EOR
F002 9
F010 2.4
F004 5
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1118
EOR
F002 9
F010 2.4
F004 5
F005 RM
F006 23.5 mm Hg at 25 degrees C
F007 23.5 mm Hg at 25 degrees C
F020 1119
EOR
F002 9
F010 2.4
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1120
EOR
F002 9
F010 2.4
F004 6
F005 RE
F006 EPI Suite (^TM) v.3.10 (2000) US-EPA Office of Pollution
** Prevention and Toxics and Syracuse Research Corporation.
F007 EPI Suite (^TM) v.3.10 (2000) US-EPA Office of Pollution
** Prevention and Toxics and Syracuse Research Corporation.
F020 1121
EOR
F002 9
F010 2.4
F004 6
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1122
EOR
F002 9
F010 2.4
F004 6
F005 RM
F006 Vapor Pressure = 26.1 mm Hg (experimental)
**
** Equivalent to 3,480 Pa.
F007 Vapor Pressure = 26.1 mm Hg (experimental)
**
** Equivalent to 3,480 Pa.
F020 1123

EOR
F002 9
F010 2.4
F004 6
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1124
EOR
F002 9
F010 2.5
F004 1
F005 RE
F006 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F007 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F020 1125
EOR
F002 9
F010 2.5
F004 1
F005 RE
F006 Sangster, J (1989) Octanol-water partition coefficients of
** simple organic compounds. J Phys Chem Ref data 18,
** 1111-1229.
F007 Sangster, J (1989) Octanol-water partition coefficients of
** simple organic compounds. J Phys Chem Ref data 18,
** 1111-1229.
F020 1126
EOR
F002 9
F010 2.5
F004 1
F005 RE
F006 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F007 Verschueren, K (1996) Handbook of Environmental Data on
** Organic Chemicals, Van Nostrand Reinhold NY, p158.
F020 1127
EOR
F002 9
F010 2.5
F004 1
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1128
EOR
F002 9
F010 2.5
F004 1
F005 RM

F006 Method described as 'direct'.
F007 Method described as 'direct'.
F020 1129
EOR
F002 9
F010 2.5
F004 1
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1130
EOR
F002 9
F010 2.5
F004 2
F005 RE
F006 Lipnick, RL, Watson, KR and Strausz, AK (1987) A QSAR study
** of the acute toxicity of some industrial organic chemicals
** to goldfish. Narcosis, electrophile and proelectrophile
** mechanisms. Xenobiotica 17, 1011-1025.
F007 Lipnick, RL, Watson, KR and Strausz, AK (1987) A QSAR study
** of the acute toxicity of some industrial organic chemicals
** to goldfish. Narcosis, electrophile and proelectrophile
** mechanisms. Xenobiotica 17, 1011-1025.
F020 1131
EOR
F002 9
F010 2.5
F004 2
F005 RL
F006 Secondary literature
F007 Secondary literature
F020 1132
EOR
F002 9
F010 2.5
F004 2
F005 RM
F006 CLOGP3 calculation
**
** Method: Leo and Weininger (1985) Medchem Software Release
** 3.33, Medicinal Chemistry Project, Pomona College,
** Claremont, CA.
F007 CLOGP3 calculation
**
** Method: Leo and Weininger (1985) Medchem Software Release
** 3.33, Medicinal Chemistry Project, Pomona College,
** Claremont, CA.
F020 1133
EOR
F002 9
F010 2.5
F004 2
F005 TS
F006 Described as allyl alcohol; no further information

** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1134
EOR
F002 9
F010 2.6.1
F004 5
F005 RE
F006 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F007 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F020 1135
EOR
F002 9
F010 2.6.1
F004 5
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1136
EOR
F002 9
F010 2.6.1
F004 5
F005 RM
F006 Described as miscible;
**
** Constant boiling mixture (Bpt 87.5 degrees C) formed from
** 72.3% allyl alcohol + 27.7% water
F007 Described as miscible;
**
** Constant boiling mixture (Bpt 87.5 degrees C) formed from
** 72.3% allyl alcohol + 27.7% water
F020 1137
EOR
F002 9
F010 2.6.1
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1138
EOR
F002 9
F010 2.6.1
F004 6
F005 RE
F006 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F007 Howard, PH (1989) Allyl Alcohol. In Handbook of

** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F020 1139
EOR
F002 9
F010 2.6.1
F004 6
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1140
EOR
F002 9
F010 2.6.1
F004 6
F005 RM
F006 Described as miscible.
F007 Described as miscible.
F020 1141
EOR
F002 9
F010 2.6.1
F004 6
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1142
EOR
F002 9
F010 2.6.1
F004 7
F005 RE
F006 EPI Suite (^TM) v.3.10 (2000) US-EPA Office of Pollution
** Prevention and Toxics and Syracuse Research Corporation.
F007 EPI Suite (^TM) v.3.10 (2000) US-EPA Office of Pollution
** Prevention and Toxics and Syracuse Research Corporation.
F020 1143
EOR
F002 9
F010 2.6.1
F004 7
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1144
EOR
F002 9
F010 2.6.1
F004 7
F005 RS
F006 Water solubility = 1E+006 g/m^3 (experimental)
F007 Water solubility = 1E+006 g/m^3 (experimental)
F020 1145
EOR
F002 9

F010 2.6.1
F004 7
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1146
EOR
F002 9
F010 2.7
F004 2
F005 RE
F006 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F007 Weast, RC and Astle, MJ (1985) CRC Handbook of Data on
** Organic Compounds, Vol.1, CRC Press, Inc Boca Raton, Fl,
** p603.
F020 1147
EOR
F002 9
F010 2.7
F004 2
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1148
EOR
F002 9
F010 2.7
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1149
EOR
F002 9
F010 2.7
F004 3
F005 RE
F006 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F007 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F020 1150
EOR
F002 9
F010 2.7
F004 3
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)

F020 1151
EOR
F002 9
F010 2.7
F004 3
F005 RM
F006 Reported as 70 degrees F (open cup).
F007 Reported as 70 degrees F (open cup).
F020 1152
EOR
F002 9
F010 2.7
F004 3
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1153
EOR
F002 9
F010 2.7
F004 4
F005 RE
F006 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F007 Windholz, M, Budavari, S, Blumetti, RF and Otterbein, ES
** (1983) The Merck Index, 10th Edition, Merck and Co., Inc,
** Rahway NJ, p277.
F020 1154
EOR
F002 9
F010 2.7
F004 4
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1155
EOR
F002 9
F010 2.7
F004 4
F005 RM
F006 Reported as 75 degrees F (closed cup).
F007 Reported as 75 degrees F (closed cup).
F020 1156
EOR
F002 9
F010 2.7
F004 4
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1157

EOR
F002 9
F010 3.1.1
F004 1
F005 RE
F006 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F007 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F020 1158
EOR
F002 9
F010 3.1.1
F004 1
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1159
EOR
F002 9
F010 3.1.1
F004 1
F005 RM
F006 Photoxidation half life, water = 334 d to 37 yr
**
** Basis: "Based upon measured rate constant for reaction with
** hydroxyl radical in water."
**
**
** Photoxidation half life, air = 2.2-22 hr
**
** Basis: "Scientific judgment based upon estimated rate
** const
F007 Photoxidation half life, water = 334 d to 37 yr
**
** Basis: "Based upon measured rate constant for reaction with
** hydroxyl radical in water."
**
**
** Photoxidation half life, air = 2.2-22 hr
**
** Basis: "Scientific judgment based upon estimated rate
** constant with hydroxyl radical in air."
F020 1160
EOR
F002 9
F010 3.1.1
F004 1
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1161
EOR

F002 9
F010 3.1.1
F004 2
F005 RE
F006 Grosjean, D, Grosjean, E and Williams, EL (1993) Atmospheric
** chemistry of unsaturated alcohols. Environ Sci Technol 27,
** 2478-2485.
F007 Grosjean, D, Grosjean, E and Williams, EL (1993) Atmospheric
** chemistry of unsaturated alcohols. Environ Sci Technol 27,
** 2478-2485.
F020 1162
EOR
F002 9
F010 3.1.1
F004 2
F005 RL
F006 Study available for review. Experimental study. Reasonably
** well reported methods and results, suitable for assessment.
F007 Study available for review. Experimental study. Reasonably
** well reported methods and results, suitable for assessment.
F020 1163
EOR
F002 9
F010 3.1.1
F004 2
F005 RM
F006 Study examined atmospheric oxidation of allyl alcohol.
** Carbonyl products of reaction of allyl alcohol with ozone
** and cyclohexane, isolated as their 2,4-dinitrophenyl
** hydrazones, were determined using HPLC analysis (cyclohexane
** added to sca
F007 Study examined atmospheric oxidation of allyl alcohol.
** Carbonyl products of reaction of allyl alcohol with ozone
** and cyclohexane, isolated as their 2,4-dinitrophenyl
** hydrazones, were determined using HPLC analysis (cyclohexane
** added to scavenge OH; reaction carried out in the dark in
** purified, humid air). Carbonyl products' presence confirmed
** using 430/360 nm absorbance ratio; quantitation involved use
** of external standards and construction of calibration
** curves.
F020 1164
EOR
F002 9
F010 3.1.1
F004 2
F005 RS
F006 Carbonyl products of reaction of allyl alcohol with ozone
** were formaldehyde (average molar yield 0.50 ± 0.03),
** hydroxyacetaldehyde (average molar yield 0.30 ± 0.03), and
** an unidentified monofunctional carbonyl formed in low yield.
F007 Carbonyl products of reaction of allyl alcohol with ozone
** were formaldehyde (average molar yield 0.50 ± 0.03),
** hydroxyacetaldehyde (average molar yield 0.30 ± 0.03), and
** an unidentified monofunctional carbonyl formed in low yield.
F020 1165
EOR
F002 9

F010 3.1.1
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1166
EOR
F002 9
F010 3.1.1
F004 3
F005 CL
F006 No photolysis is expected to occur in troposphere.
F007 No photolysis is expected to occur in troposphere.
F020 1167
EOR
F002 9
F010 3.1.1
F004 3
F005 ME
F006 100 ppm allyl alcohol vapor irradiated with light source in
** glass chamber. Degradation products (CO2 and CO) measured
** using nondispersive IR gas chromatography and gas
** chromatography on a molecular sieve using an ultrasound
** detector, respe
F007 100 ppm allyl alcohol vapor irradiated with light source in
** glass chamber. Degradation products (CO2 and CO) measured
** using nondispersive IR gas chromatography and gas
** chromatography on a molecular sieve using an ultrasound
** detector, respectively.
F020 1168
EOR
F002 9
F010 3.1.1
F004 3
F005 RE
F006 Hustert, K and Parlar, H (1981) Ein testverfahren zum
** photochemischen abbau von umweltchemikalien in der
** gasphase. Chemosphere 10, 1045-1050.
F007 Hustert, K and Parlar, H (1981) Ein testverfahren zum
** photochemischen abbau von umweltchemikalien in der
** gasphase. Chemosphere 10, 1045-1050.
F020 1169
EOR
F002 9
F010 3.1.1
F004 3
F005 RL
F006 Study available for review. Experimental study. Reasonably
** well reported methods and results, suitable for assessment.
F007 Study available for review. Experimental study. Reasonably
** well reported methods and results, suitable for assessment.
F020 1170
EOR
F002 9
F010 3.1.1

F004 3
F005 RS
F006 No photolysis occurred at wavelengths > 300 nm. At
** wavelengths between 230 nm and 300 nm, 39.7 % of the initial
** concentration of allyl alcohol was broken down into CO2 and
** CO after 2 hrs of illumination. The concentrations of CO2
** and CO a
F007 No photolysis occurred at wavelengths > 300 nm. At
** wavelengths between 230 nm and 300 nm, 39.7 % of the initial
** concentration of allyl alcohol was broken down into CO2 and
** CO after 2 hrs of illumination. The concentrations of CO2
** and CO after 2 hrs of illumination were 32 ppm and 87 ppm.
F020 1171
EOR
F002 9
F010 3.1.1
F004 3
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1172
EOR
F002 9
F010 3.1.1
F004 4
F005 RE
F006 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F007 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F020 1173
EOR
F002 9
F010 3.1.1
F004 4
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1174
EOR
F002 9
F010 3.1.1
F004 4
F005 RM
F006 Release of allyl alcohol to the atmosphere is expected to
** result mainly in reaction with photochemically generated
** hydroxyl radicals with estimated half lives of 6.03-14.7 hr.
F007 Release of allyl alcohol to the atmosphere is expected to
** result mainly in reaction with photochemically generated
** hydroxyl radicals with estimated half lives of 6.03-14.7 hr.
F020 1175
EOR
F002 9

F010 3.1.1
F004 4
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1176
EOR
F002 9
F010 3.1.1
F004 5
F005 RE
F006 Grosjean, D, Grosjean, E and Williams, EL (1993) Rate
** constants for the gas-phase reactions of ozone with
** unsaturated alcohols, esters, and carbonyls. Int J Chem
** Kinetics 25, 783-794.
F007 Grosjean, D, Grosjean, E and Williams, EL (1993) Rate
** constants for the gas-phase reactions of ozone with
** unsaturated alcohols, esters, and carbonyls. Int J Chem
** Kinetics 25, 783-794.
F020 1177
EOR
F002 9
F010 3.1.1
F004 5
F005 RL
F006 Study available for review. Experimental study. Reasonably
** well reported methods and results, suitable for assessment.
F007 Study available for review. Experimental study. Reasonably
** well reported methods and results, suitable for assessment.
F020 1178
EOR
F002 9
F010 3.1.1
F004 5
F005 RM
F006 Study examined kinetics of gas-phase reaction of ozone with
** allyl alcohol investigated at atmospheric pressure, ambient
** temperature, and in presence of cyclohexane to scavenge
** hydroxyl radicals produced during reaction.
**
** Initial allyl alcohol
F007 Study examined kinetics of gas-phase reaction of ozone with
** allyl alcohol investigated at atmospheric pressure, ambient
** temperature, and in presence of cyclohexane to scavenge
** hydroxyl radicals produced during reaction.
**
** Initial allyl alcohol concentration of 1.75 - 2.0 ppm,
** initial ozone concentrations of 174 - 200 ppb and
** cyclohexane concentrations of 200 or 400 ppm. Ozone was
** monitored continuously by ultraviolet photometry. Reaction
** rate constant for allyl alcohol, corrected for the measured
** loss of ozone to the chamber walls, was $14.4 \pm 2.0 \text{ E-18}$
** $\text{cm}^3/\text{molecule}/\text{sec}$.
**
**

```

** Hydroxyl radicals reaction:
** Overall OH rate constant = 2.59 E-11 cm3/molecule-sec
** Removal by OH half-life = 0.31 days or 7.44 hr (1.0 E6
** OH/cm3)
**
** Removal by ozone half-life = 0.23 days or 5.52 hr (100 ppb
** ozone)
F020 1179
EOR
F002 9
F010 3.1.1
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1180
EOR
F002 9
F010 3.1.2
F004 1
F005 RM
F006 Allyl alcohol lacks functional groups that are susceptible to hydrolysis.
F007 Allyl alcohol lacks functional groups that are susceptible to hydrolysis.
F020 1461
EOR
F002 9
F010 3.3.1
F004 1
F005 ME
F006 INPUT DATA:
** Molecular weight = 58.08
** Data temperature = 25 degrees C
** Log Kow = 0.17 (experimental)
** Water solubility = 1E+006 g/m^3 (experimental)
** Vapour pressure = 3,480 Pa (experimental)
** Melting point = -129 degrees C (experimental)
F007 INPUT DATA:
** Molecular weight = 58.08
** Data temperature = 25 degrees C
** Log Kow = 0.17 (experimental)
** Water solubility = 1E+006 g/m^3 (experimental)
** Vapour pressure = 3,480 Pa (experimental)
** Melting point = -129 degrees C (experimental)
F020 1181
EOR
F002 9
F010 3.3.1
F004 1
F005 RE
F006 Armstrong, T (2003) Allyl alcohol fate and transport
** modeling. Unpublished study (modeling) for Lyondell Chemical
** Co., 24 October 2003.
F007 Armstrong, T (2003) Allyl alcohol fate and transport
** modeling. Unpublished study (modeling) for Lyondell Chemical
** Co., 24 October 2003.

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F020 1182
EOR
F002 9
F010 3.3.1
F004 1
F005 RL
F006 Study performed according to accepted principles using USEPA
** recommended model.
F007 Study performed according to accepted principles using USEPA
** recommended model.
F020 1183
EOR
F002 9
F010 3.3.1
F004 1
F005 RS
F006 The percentage environmental distribution calculated from
** the above parameters using the Mackay level 1 model was as
** follows:
**
** Air 3.9119%
** Soil 0.1257%
** Water 95.9596%
** Fish 7.10E
F007 The percentage environmental distribution calculated from
** the above parameters using the Mackay level 1 model was as
** follows:
**
** Air 3.9119%
** Soil 0.1257%
** Water 95.9596%
** Fish 7.10E-06%
** Sediment 0.0028%
** Suspended Sediment 8.73E-05%
** Aerosol 1.35E-07%
F020 1184
EOR
F002 9
F010 3.3.1
F004 2
F005 ME
F006 The Level III program was also used, with the default model,
** using the same input parameters given in the preceding
** record.
F007 The Level III program was also used, with the default model,
** using the same input parameters given in the preceding
** record.
F020 1185
EOR
F002 9
F010 3.3.1
F004 2
F005 RE
F006 Armstrong, T (2003) Allyl alcohol fate and transport
** modeling. Unpublished study (modeling) for Lyondell Chemical
** Co., 24 October 2003.
F007 Armstrong, T (2003) Allyl alcohol fate and transport

** modeling. Unpublished study (modeling) for Lyondell Chemical
** Co., 24 October 2003.

F020 1186

EOR

F002 9

F010 3.3.1

F004 2

F005 RL

F006 Study performed according to accepted principles using USEPA
** recommended model.

F007 Study performed according to accepted principles using USEPA
** recommended model.

F020 1187

EOR

F002 9

F010 3.3.1

F004 2

F005 RM

F006 The distribution between compartments obtained was as
** follows:

**

** Release:	To air	To water	To soil
** % in air	71.5%	0.0426%	0.151%
** % in soil	12.4%	0.0074%	79.6%
** % in water	16.1%	99.8%	20.2%

F007 The distribution between compartments obtained was as
** follows:

**

** Release:	To air	To water	To soil
** % in air	71.5%	0.0426%	0.151%
** % in soil	12.4%	0.0074%	79.6%
** % in water	16.1%	99.8%	20.2%
** % in sediment	0.0276%	0.171%	0.0346%

**

** The results reflect that most allyl alcohol released to the
** air would remain in the air. In water, allyl alcohol is not
** expected to sorb to sediment. If released to the soil,
** allyl alcohol is likely to remain in the soil.

F020 1188

EOR

F002 9

F010 3.5

F004 2

F005 CL

F006 Under aerobic test conditions, allyl alcohol was degraded by
** sediment microorganisms.

F007 Under aerobic test conditions, allyl alcohol was degraded by
** sediment microorganisms.

F020 1189

EOR

F002 9

F010 3.5

F004 2

F005 ME

F006 ORIGIN OF SAMPLE

** Sediment and water was collected from Kern County Canal, an
** irrigation canal in an agricultural region of California,

** USA. Sediment was sandy loam with 0.5% organic matter.

**

** DEGRADATION TEST

** 1:2 sediment to water ratio in

F007 ORIGIN OF SAMPLE

** Sediment and water was collected from Kern County Canal, an

** irrigation canal in an agricultural region of California,

** USA. Sediment was sandy loam with 0.5% organic matter.

**

** DEGRADATION TEST

** 1:2 sediment to water ratio in 2 Erlenmeyer flasks fitted

** with Dreschel caps with inlet and outlet ports for air

** (aerobic biodegradation test). [14C]acrolein (15 mg/L)

** added using a gastight syringe to the water phase of each

** test system. Experiment carried out in dark at 25 ± 1°C.

** Each flask was connected to a series of trapping vessels to

** collect biodegradation products: one Tenax trap to

** collect volatile products and two 1.0 N NaOH traps to

** collect [14C]CO₂.

**

** ANALYTICAL METHODS

** Three HPLC-RAM methods were used to separate acrolein and

** its degradation products in the water, sediment, and the

** traps: ion exchange chromatography, reversed phase

** chromatography, and anion-exchange chromatography. Liquid

** scintillation counting was used to confirm HPLC-RAM

** recoveries. Analytical reference standards included oxalic

** acid, malonic acid, glyceric acid, glyceraldehyde, glycidol,

** allyl alcohol, aconitic acid, lactic acid, glycerol,

** 3-hydroxypropanal, 1,3-propanediol, acrylic acid, and

** acrolein.

F020 1190

EOR

F002 9

F010 3.5

F004 2

F005 RE

F006 Smith, AM, Mao, J, Doane, RA and Kovacs, MF (1995) Metabolic

** fate of [14]Cacrolein under aerobic and anaerobic aquatic

** conditions. J Agric Fd Chem 43, 2497-2503.

F007 Smith, AM, Mao, J, Doane, RA and Kovacs, MF (1995) Metabolic

** fate of [14]Cacrolein under aerobic and anaerobic aquatic

** conditions. J Agric Fd Chem 43, 2497-2503.

F020 1191

EOR

F002 9

F010 3.5

F004 2

F005 RL

F006 Study available for review. Non-guideline, non-GLP

** experimental study. Reasonably well reported methods and

** results, suitable for assessment.

F007 Study available for review. Non-guideline, non-GLP

** experimental study. Reasonably well reported methods and

** results, suitable for assessment.

F020 1192

EOR

F002 9
F010 3.5
F004 2
F005 RM
F006 Allyl alcohol was a transient breakdown product of acrolein.
** Propanol was a transient breakdown product of allyl alcohol.
** Oxalic acid was a stable breakdown product of allyl alcohol
** and propanol. Aerobic microbial biomass at the conclusion
F007 Allyl alcohol was a transient breakdown product of acrolein.
** Propanol was a transient breakdown product of allyl alcohol.
** Oxalic acid was a stable breakdown product of allyl alcohol
** and propanol. Aerobic microbial biomass at the conclusion of
** study was 5 x 10⁷ cfu/g sediment.
F020 1193
EOR
F002 9
F010 3.5
F004 2
F005 RS
F006 [14C]acrolein was reduced to allyl alcohol, which was
** further degraded to oxalic acid and CO₂.
F007 [14C]acrolein was reduced to allyl alcohol, which was
** further degraded to oxalic acid and CO₂.
F020 1194
EOR
F002 9
F010 3.5
F004 2
F005 TS
F006 Radiolabeled [2,3-¹⁴C] acrolein, lot 032H9223, specific
** activity 16.4 mCi/mmol from Sigma. Radiochemical purity
** 92.2% (HPLC).
F007 Radiolabeled [2,3-¹⁴C] acrolein, lot 032H9223, specific
** activity 16.4 mCi/mmol from Sigma. Radiochemical purity
** 92.2% (HPLC).
F020 1195
EOR
F002 9
F010 3.5
F004 3
F005 CL
F006 Under anaerobic test conditions, allyl alcohol was degraded
** by sediment microorganisms.
F007 Under anaerobic test conditions, allyl alcohol was degraded
** by sediment microorganisms.
F020 1196
EOR
F002 9
F010 3.5
F004 3
F005 ME
F006 ORIGIN OF SAMPLE
** Sediment and water was collected from Kern County Canal, an
** irrigation canal in an agricultural region of California,
** USA. Sediment was sandy loam with 0.5% organic matter.
**
** DEGRADATION TEST

** 1:2 sediment to water ratio in
F007 ORIGIN OF SAMPLE
** Sediment and water was collected from Kern County Canal, an
** irrigation canal in an agricultural region of California,
** USA. Sediment was sandy loam with 0.5% organic matter.
**
** DEGRADATION TEST
** 1:2 sediment to water ratio in 2 Erlenmeyer flasks fitted
** with Dreschel caps with inlet and outlet ports for nitrogen
** (anaerobic biodegradation test) exchange. [14C]acrolein (15
** mg/L) added using a gastight syringe to the water phase of
** each test system. Experiment carried out in dark at 25 ±
** 1°C. Each flask was connected to a series of trapping
** vessels to collect biodegradation products: one Tenax
** trap to collect volatile products and two 1.0 N NaOH traps
** to collect [14C]CO₂.
**
** Analytical methods
** Three HPLC-RAM methods were used to separate acrolein and
** its degradation products in the water, sediment, and the
** traps: ion exchange chromatography, reversed phase
** chromatography, and anion-exchange chromatography. Liquid
** scintillation counting was used to confirm HPLC-RAM
** recoveries. Analytical reference standards included oxalic
** acid, malonic acid, glyceric acid, glyceraldehyde, glycidol,
** allyl alcohol, aconitic acid, lactic acid, glycerol,
** 3-hydroxypropanal, 1,3-propanediol, acrylic acid, and
** acrolein.
F020 1197
EOR
F002 9
F010 3.5
F004 3
F005 RE
F006 Smith, AM, Mao, J, Doane, RA and Kovacs, MF (1995) Metabolic
** fate of [14]CACrolein under aerobic and anaerobic aquatic
** conditions. J Agric Fd Chem 43, 2497-2503.
F007 Smith, AM, Mao, J, Doane, RA and Kovacs, MF (1995) Metabolic
** fate of [14]CACrolein under aerobic and anaerobic aquatic
** conditions. J Agric Fd Chem 43, 2497-2503.
F020 1198
EOR
F002 9
F010 3.5
F004 3
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1199
EOR
F002 9
F010 3.5
F004 3

F005 RM
F006 Allyl alcohol was a transient breakdown product of acrolein.
** Propanol was a transient breakdown product of allyl alcohol.
** Oxalic acid was a stable breakdown product of allyl alcohol
** and propanol. Anaerobic microbial biomass at the conclusio
F007 Allyl alcohol was a transient breakdown product of acrolein.
** Propanol was a transient breakdown product of allyl alcohol.
** Oxalic acid was a stable breakdown product of allyl alcohol
** and propanol. Anaerobic microbial biomass at the conclusion
** of the study was 3×10^7 cfu/g sediment.
F020 1200
EOR
F002 9
F010 3.5
F004 3
F005 RS
F006 Under anaerobic aquatic conditions, [^{14}C]acrolein was
** reduced to allyl alcohol, which was further degraded to
** propanol and ultimately to oxalic acid and CO_2 .
F007 Under anaerobic aquatic conditions, [^{14}C]acrolein was
** reduced to allyl alcohol, which was further degraded to
** propanol and ultimately to oxalic acid and CO_2 .
F020 1201
EOR
F002 9
F010 3.5
F004 3
F005 TS
F006 Radiolabeled [2,3- ^{14}C] acrolein, lot 032H9223, specific
** activity 16.4 mCi/mmol from Sigma. Radiochemical purity
** 92.2% (HPLC).
F007 Radiolabeled [2,3- ^{14}C] acrolein, lot 032H9223, specific
** activity 16.4 mCi/mmol from Sigma. Radiochemical purity
** 92.2% (HPLC).
F020 1202
EOR
F002 9
F010 3.5
F004 5
F005 RE
F006 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F007 Howard, PH (1989) Allyl Alcohol. In Handbook of
** Environmental Fate and Exposure Data for Organic Chemicals.
** Lewis Publishers, pp38-43
F020 1203
EOR
F002 9
F010 3.5
F004 5
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1204
EOR
F002 9

F010 3.5
F004 5
F005 RM
F006 Results presented as percentage theoretical BOD.
F007 Results presented as percentage theoretical BOD.
F020 1205
EOR
F002 9
F010 3.5
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1206
EOR
F002 9
F010 3.5
F004 6
F005 ME
F006 Sludge: 30 mg/l
** Substance: 100 mg/l
** Period 2 wk
**
** (No further details)
F007 Sludge: 30 mg/l
** Substance: 100 mg/l
** Period 2 wk
**
** (No further details)
F020 1207
EOR
F002 9
F010 3.5
F004 6
F005 RE
F006 JETOC (1992) Biodegradation and bioaccumulation data of
** existing chemicals based on the CSCL Japan. Japan Chemical
** Industry Ecology-Toxicology and Information Center (JETOC),
** complied under the supervision of the Chemical Products and
** Safet
F007 JETOC (1992) Biodegradation and bioaccumulation data of
** existing chemicals based on the CSCL Japan. Japan Chemical
** Industry Ecology-Toxicology and Information Center (JETOC),
** complied under the supervision of the Chemical Products and
** Safety Division, Basic Industries Bureau, Ministry of
** International Trade, Japan.
F020 1208
EOR
F002 9
F010 3.5
F004 6
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1209

EOR
F002 9
F010 3.5
F004 6
F005 RS
F006 86% degradation by BOD
F007 86% degradation by BOD
F020 1210
EOR
F002 9
F010 3.5
F004 6
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1211
EOR
F002 9
F010 3.6
F004 1
F005 RE
F006 Huekelekian, H and Rand, MC (1955) Biochemical oxygen demand
** of pure organic compounds. Sewage and Industrial Wastes 27,
** 1040-1053.
F007 Huekelekian, H and Rand, MC (1955) Biochemical oxygen demand
** of pure organic compounds. Sewage and Industrial Wastes 27,
** 1040-1053.
F020 1212
EOR
F002 9
F010 3.6
F004 1
F005 RL
F006 Secondary literature
F007 Secondary literature
F020 1213
EOR
F002 9
F010 3.6
F004 1
F005 RM
F006 BOD (10 d) = 1.6 g/g (using sewage seed)
**
** Source reference: Mills, EJ and Stack, VT jr (1953)
** Biological oxidation of synthetic organic chemicals.
** Proceedings of the 8th Purdue Industrial Waste Conference
** (1953), p 492 (Unavailable for review)
F007 BOD (10 d) = 1.6 g/g (using sewage seed)
**
** Source reference: Mills, EJ and Stack, VT jr (1953)
** Biological oxidation of synthetic organic chemicals.
** Proceedings of the 8th Purdue Industrial Waste Conference
** (1953), p 492 (Unavailable for review)
F020 1214
EOR

F002 9
F010 3.6
F004 2
F005 ME
F006 BOD
** Tests were conducted in accordance with the standard
** dilution method of APHA at 20 degrees C for 5 d.
** Allylthiourea (0.5 mg/l) was added to inhibit nitrification.
** Filtered effluent (10 ml; unadapted) from a waste water
** treatment plant w
F007 BOD
** Tests were conducted in accordance with the standard
** dilution method of APHA at 20 degrees C for 5 d.
** Allylthiourea (0.5 mg/l) was added to inhibit nitrification.
** Filtered effluent (10 ml; unadapted) from a waste water
** treatment plant was used as inoculum, in a total volume of
** 500 ml. Glucose and glutamic acid were run in parallel as
** control substances. (No further details)
**
** COD
** Tests were performed in accordance with the standard
** potassium dichromate method described by ASTM. (No further
** details)
**
** ThOD
** Theoretical oxygen demand was obtained by calculation. (No
** further details)
F020 1215
EOR
F002 9
F010 3.6
F004 2
F005 RE
F006 Bridie, AL, Wolff, CJM and Winter, M (1979) BOD and COD of
** some petrochemicals. Water Research 13, 627-630.
F007 Bridie, AL, Wolff, CJM and Winter, M (1979) BOD and COD of
** some petrochemicals. Water Research 13, 627-630.
F020 1216
EOR
F002 9
F010 3.6
F004 2
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1217
EOR
F002 9
F010 3.6
F004 2
F005 RS
F006 ThOD = 2.21 g/g
**

** BOD = 1.79 g/g (81% of ThOD)
**
** COD = 2.12 (96% of ThOD)
F007 ThOD = 2.21 g/g
**
** BOD = 1.79 g/g (81% of ThOD)
**
** COD = 2.12 (96% of ThOD)
F020 1218
EOR
F002 9
F010 3.6
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1219
EOR
F002 9
F010 3.7
F004 1
F005 CL
F006 Allyl alcohol is not likely to bioaccumulate.
F007 Allyl alcohol is not likely to bioaccumulate.
F020 1220
EOR
F002 9
F010 3.7
F004 1
F005 RE
F006 Armstrong, T (2003) Allyl alcohol bioaccumulation model.
** Unpublished study (modeling) for Lyondell Chemical Co., 17
** November 2003.
F007 Armstrong, T (2003) Allyl alcohol bioaccumulation model.
** Unpublished study (modeling) for Lyondell Chemical Co., 17
** November 2003.
F020 1221
EOR
F002 9
F010 3.7
F004 1
F005 RE
F006 EPI Suite (^TM) v.3.10 (2000) US-EPA Office of Pollution
** Prevention and Toxics and Syracuse Research Corporation.
F007 EPI Suite (^TM) v.3.10 (2000) US-EPA Office of Pollution
** Prevention and Toxics and Syracuse Research Corporation.
F020 1222
EOR
F002 9
F010 3.7
F004 1
F005 RE
F006 Meylan, WM, Howard, PH, Boethling, RS, Aronson, D, Printup,
** H and Gouchie, S (1999) Improved method for estimating
** bioconcentration/bioaccumulation factor from octanol/water

** partition coefficient. Environ Toxicol Chem 18, 664-672.
F007 Meylan, WM, Howard, PH, Boethling, RS, Aronson, D, Printup,
** H and Gouchie, S (1999) Improved method for estimating
** bioconcentration/bioaccumulation factor from octanol/water
** partition coefficient. Environ Toxicol Chem 18, 664-672.
F020 1223
EOR
F002 9
F010 3.7
F004 1
F005 RL
F006 Study performed according to accepted principles using USEPA
** recommended model.
F007 Study performed according to accepted principles using USEPA
** recommended model.
F020 1224
EOR
F002 9
F010 3.7
F004 1
F005 RM
F006 METHOD
** BCFWin v2.14 in EPIWin v3.10 from the USEPA and Syracuse
** Research Corporation, as described by Meylan et al. (1999).
**
** INPUT DATA
** CAS No. 107-18-6
** Log Kow = 0.17 (from EPIWin experimental database)
**
** RESULTS
** Estimated BCF = 3.162 (log
F007 METHOD
** BCFWin v2.14 in EPIWin v3.10 from the USEPA and Syracuse
** Research Corporation, as described by Meylan et al. (1999).
**
** INPUT DATA
** CAS No. 107-18-6
** Log Kow = 0.17 (from EPIWin experimental database)
**
** RESULTS
** Estimated BCF = 3.162 (log BCF = 0.500)
F020 1225
EOR
F002 9
F010 3.8
F004 1
F005 RE
F006 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F007 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F020 1226
EOR
F002 9
F010 3.8

F004 1
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1227
EOR
F002 9
F010 3.8
F004 1
F005 RM
F006 Predicted soil half life = 1-7 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation rate."
F007 Predicted soil half life = 1-7 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation rate."
F020 1228
EOR
F002 9
F010 3.8
F004 2
F005 RE
F006 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F007 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F020 1229
EOR
F002 9
F010 3.8
F004 2
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1230
EOR
F002 9
F010 3.8
F004 2
F005 RM
F006 Predicted air half life = 2.2-22 hr
**
** Basis: "Scientific judgment based upon estimated
** photooxidation half-life in air."
F007 Predicted air half life = 2.2-22 hr
**
** Basis: "Scientific judgment based upon estimated
** photooxidation half-life in air."
F020 1231
EOR
F002 9
F010 3.8
F004 3

F005 RE
F006 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F007 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F020 1232
EOR
F002 9
F010 3.8
F004 3
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1233
EOR
F002 9
F010 3.8
F004 3
F005 RM
F006 Predicted surface water half life = 2-14 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation half-life."
F007 Predicted surface water half life = 2-14 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation half-life."
F020 1234
EOR
F002 9
F010 3.8
F004 4
F005 RE
F006 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F007 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F020 1235
EOR
F002 9
F010 3.8
F004 4
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1236
EOR
F002 9
F010 3.8
F004 4
F005 RM
F006 Predicted aerobic half life (biodegradation) = 1-7 d
**

** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation screening test
** data."
**
**
** Removal/secondary treatment = 73%
**
** Basis: "Based upon biological oxyg
F007 Predicted aerobic half life (biodegradation) = 1-7 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation screening test
** data."
**
**
** Removal/secondary treatment = 73%
**
** Basis: "Based upon biological oxygen demand results from
** activated sludge dispersed seed aeration treatment
** simulator."
F020 1237
EOR
F002 9
F010 3.8
F004 6
F005 RE
F006 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F007 Howard, PH, Boethling, RS, Jarvis, WF, Meylan, WM and
** Michalenko, EM (1991) Handbook of environmental degradation
** rates.
F020 1238
EOR
F002 9
F010 3.8
F004 6
F005 RL
F006 Secondary literature (handbook or compilation of data)
F007 Secondary literature (handbook or compilation of data)
F020 1239
EOR
F002 9
F010 3.8
F004 6
F005 RM
F006 Predicted anaerobic half life (biodegradation) = 4-28 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation half life."
F007 Predicted anaerobic half life (biodegradation) = 4-28 d
**
** Basis: "Scientific judgment based upon estimated
** unacclimated aqueous aerobic biodegradation half life."
F020 1240
EOR
F002 9

F010 4.1
F004 1
F005 CL
F006 Under the conditions of the test, the 24 hr LC50 of allyl
** alcohol in goldfish is 1 mg/l.
F007 Under the conditions of the test, the 24 hr LC50 of allyl
** alcohol in goldfish is 1 mg/l.
F020 1241
EOR
F002 9
F010 4.1
F004 1
F005 ME
F006 EXPOSURE CONDITIONS
** Static conditions. Groups of 6 goldfish (*Carassius auratus*, mean length
* 6.2 +/- 0.7 cm, mean weight 3.3 +/- 1.0 g) were placed in all glass tanks
* (42 x 28 x 28 cm) containing 25 l of tap water at 20 ± 1°C. The exposure
F007 EXPOSURE CONDITIONS
** Static conditions. Groups of 6 goldfish (*Carassius auratus*, mean length
* 6.2 +/- 0.7 cm, mean weight 3.3 +/- 1.0 g) were placed in all glass tanks
* (42 x 28 x 28 cm) containing 25 l of tap water at 20 ± 1°C. The exposure
* lasted 24 hr.
**
** Analysis of tap water was as follows (mg/l):
** Cl⁻: 65
** NO₂⁻: 0
** NO₃⁻: 4
** SO₄²⁻: 35
** PO₄³⁻: 0.15
** HCO₃⁻: 25
** SiO₂: 25
** NH₄⁺: 0
** Fe: 0.05
** Mn: 0
** Ca²⁺: 100
** Mg²⁺: 8
** alkali: 30 (as Na⁺)
** pH: 7.8
**
** ANALYSIS
** The concentration of allyl alcohol in test medium was
** determined before and after each test, using either total
** organic carbon analysis or extraction/GC analysis (no
** further details). Comment: The concentration range used, and
** the recovery of added test substance, is not reported.
**
** DETERMINATION OF LC50
** Results were obtained by interpolation after plotting log
** exposure concentration versus mortality.
**
** Comment: The test medium was not aerated to avoid
** evaporative loss of the test substance. It is noted that the
** oxygenation concentration did not fall below 4 mg/l.
F020 1242
EOR
F002 9
F010 4.1

F004 1
F005 RE
F006 Bridie, AL, Wolff, CJM and Winter, M (1979) The acute
** toxicity of some petrochemicals to goldfish. Water Research
** 13, 623-626.
F007 Bridie, AL, Wolff, CJM and Winter, M (1979) The acute
** toxicity of some petrochemicals to goldfish. Water Research
** 13, 623-626.
F020 1243
EOR
F002 9
F010 4.1
F004 1
F005 RL
F006 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.
F007 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.
F020 1244
EOR
F002 9
F010 4.1
F004 1
F005 RS
F006 24 hr LC50 = 1 mg/l
F007 24 hr LC50 = 1 mg/l
F020 1245
EOR
F002 9
F010 4.1
F004 1
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1246
EOR
F002 9
F010 4.1
F004 2
F005 CL
F006 Under the conditions of this study (static conditions), the
** 96 hr LC50 for allyl alcohol in the fathead minnow
** (Pimephales promelas) was 0.32 mg/l.
F007 Under the conditions of this study (static conditions), the
** 96 hr LC50 for allyl alcohol in the fathead minnow
** (Pimephales promelas) was 0.32 mg/l.
F020 1247
EOR
F002 9
F010 4.1
F004 2
F005 ME
F006 EXPOSURE CONDITIONS

** Static multi-species bioassays were performed in seamless
** Pyrex glass vessels (30.5 x 30.5 x 30.5 cm) containing 20 l
** test solution. Water (industrial service water, Lake
** Ontario) was active-carbon-filtered, dechlorinate

F007 EXPOSURE CONDITIONS

** Static multi-species bioassays were performed in seamless
** Pyrex glass vessels (30.5 x 30.5 x 30.5 cm) containing 20 l
** test solution. Water (industrial service water, Lake
** Ontario) was active-carbon-filtered, dechlorinated and
** tempered before use; total hardness 130 mg/l; pH 7.4
** (detailed chemical composition provided). Determinations of the
* temperature, dissolved oxygen and pH of each test solution were made (but
* not reported) in conjunction with the daily biological observations. Test
* temperature target was 20 ± 1°C. If the dissolved oxygen fell below 40%
* of the starting level (not reported), the test was re-run with glass
* sparger aeration (0.05 l/min). All tests were conducted within the
* extremes of 6.5 to 8.5 pH units. The photoperiod duration was 16 hours of
* light. The air-water interface of each tank received approximately 50
* ft-c of cool-white fluorescent light.

** Organisms were exposed to nominal concentrations of 0, 0.1, 1, 10 or 100
* mg allyl alcohol/l test medium.

**

** GENERAL TEST METHOD

** This non-standard test method simultaneously exposed 7
** organisms (pillbug, water flea, flatworm, sideswimmer,
** snail, segmented worm, fathead minnow) to the test
** substance. Fish and snails were placed free in the tanks.
** The remaining organism were segregated in stainless steel
** wirecloth basket (5.5 cm diameter x 7.5 cm depth) suspended
** around the circumference of the vessel (baskets raised and
** lowered in the water column at 1 rpm). Total biological
** loading (all species combined) was 0.5 g/l test medium. The
** water temperature during the test was 20 degrees, with a 16
** hr photoperiod. Each test was performed twice.

**

** TEST ORGANISMS

** Fathead minnow (*Pimephales promelas*), approx. 0.2-0.5 g (10
** per exposure concentration). The fish were acclimated to
** control diluent water in breeding/rearing tanks, and food
** withheld for 24 hr preceding the test.

**

** BIOLOGICAL OBSERVATIONS

** Survival, condition and behavior were recorded daily. Dead
** organisms were removed when observed. All species were
** exposed for 96 hr. If during the test more than 5/10 of any
** one species of test species were found dead, additional
** aquaria containing lower concentrations of test solution
** were set up.

**

** DETERMINATION OF LC50

** LC50 values were calculated (computer model) based upon the
** log exposure concentration and the angle transformed percent
** mortality.

F020 1248

EOR

F002 9

F010 4.1
F004 2
F005 RE
F006 Ewell, WS, Gorsuch, JW, Kringle, RO, Robillard, KA and
** Spiegel, RC (1986) Simultaneous evaluation of the acute
** effects of chemicals on seven aquatic species. Envir Tox
** Chem 5, 831-840.
F007 Ewell, WS, Gorsuch, JW, Kringle, RO, Robillard, KA and
** Spiegel, RC (1986) Simultaneous evaluation of the acute
** effects of chemicals on seven aquatic species. Envir Tox
** Chem 5, 831-840.
F020 1249
EOR
F002 9
F010 4.1
F004 2
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1250
EOR
F002 9
F010 4.1
F004 2
F005 RS
F006 Trial 1 LC50 = 0.32 mg/l
**
** Trial 2 LC50 = 0.32 mg/l
**
** (Results presented in tabular form, no further information)
F007 Trial 1 LC50 = 0.32 mg/l
**
** Trial 2 LC50 = 0.32 mg/l
**
** (Results presented in tabular form, no further information)
F020 1251
EOR
F002 9
F010 4.1
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1252
EOR
F002 9
F010 4.2
F004 1
F005 CL
F006 Under the conditions of this study (static conditions), the
** 96 hr EC50 for allyl alcohol in the water flea (Daphnia

** magna) was in the range 0.25-0.40 mg/l.
F007 Under the conditions of this study (static conditions), the
** 96 hr EC50 for allyl alcohol in the water flea (Daphnia
** magna) was in the range 0.25-0.40 mg/l.
F020 1253
EOR
F002 9
F010 4.2
F004 1
F005 ME
F006 EXPOSURE CONDITIONS
** Static multi-species bioassays were performed in seamless
** Pyrex glass vessels (30.5 x 30.5 x 30.5 cm) containing 20 l
** test solution. Water (industrial service water, Lake
** Ontario) was active-carbon-filtered, dechlorinate
F007 EXPOSURE CONDITIONS
** Static multi-species bioassays were performed in seamless
** Pyrex glass vessels (30.5 x 30.5 x 30.5 cm) containing 20 l
** test solution. Water (industrial service water, Lake
** Ontario) was active-carbon-filtered, dechlorinated and
** tempered before use; total hardness 130 mg/l; pH 7.4
** (detailed chemical composition provided). If the dissolved
** oxygen fell below 40% of the starting level (not reported),
** the test was re-run with glass sparger aeration (0.05
** l/min).
**
** Organisms were exposed to nominal concentrations of 0, 0.1,
** 1, 10 or 100 mg allyl alcohol/l test medium.
**
** GENERAL TEST METHOD
** This non-standard test method simultaneously exposed 7
** organisms (pillbug, water flea, flatworm, sideswimmer,
** snail, segmented worm, fathead minnow) to the test
** substance. Fish and snails were placed free in the tanks.
** The remaining organism were segregated in stainless steel
** wirecloth basket (5.5 cm diameter x 7.5 cm depth) suspended
** around the circumference of the vessel (baskets raised and
** lowered in the water column at 1 rpm). Total biological
** loading (all species combined) was 0.5 g/l test medium. The
** water temperature during the test was 20 ± 1°C, with a 16
** hr photoperiod. Each test was performed twice.
**
** TEST ORGANISMS
** The first and second larval instar of the water flea
** (daphnia magna, 10 per exposure concentration) was used in
** this investigation. The organisms were acclimated to control
** diluent water in breeding/rearing tanks, and food withheld
** for 24 hr preceding the test.
**
** PHYS-CHEM PARAMETERS
** Water temperature, dissolved oxygen and pH were recorded
** daily (but not reported).
**
** BIOLOGICAL OBSERVATIONS
** Survival and behavior were recorded daily. Dead daphnia were
** removed when observed. All species were exposed for 96 hr.
** If during the test more than 5/10 of any one species of test

** species were found dead, additional aquaria containing lower
** concentrations of test solution were set up.
**
** DETERMINATION OF LC50
** LC50 values were calculated (computer model) based upon the
** log exposure concentration and the angle transformed percent
** mortality.
F020 1254
EOR
F002 9
F010 4.2
F004 1
F005 RE
F006 Ewell, WS, Gorsuch, JW, Kringle, RO, Robillard, KA and
** Spiegel, RC (1986) Simultaneous evaluation of the acute
** effects of chemicals on seven aquatic species. Envir Tox
** Chem 5, 831-840.
F007 Ewell, WS, Gorsuch, JW, Kringle, RO, Robillard, KA and
** Spiegel, RC (1986) Simultaneous evaluation of the acute
** effects of chemicals on seven aquatic species. Envir Tox
** Chem 5, 831-840.
F020 1255
EOR
F002 9
F010 4.2
F004 1
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1256
EOR
F002 9
F010 4.2
F004 1
F005 RS
F006 Trial 1 LC50 = 0.25 mg/l
**
** Trial 2 LC50 = 0.40 mg/l
**
** (Results presented in tabular form, no further information)
F007 Trial 1 LC50 = 0.25 mg/l
**
** Trial 2 LC50 = 0.40 mg/l
**
** (Results presented in tabular form, no further information)
F020 1257
EOR
F002 9
F010 4.2
F004 1
F005 TS
F006 Described as allyl alcohol; no further information
** available.

F007 Described as allyl alcohol; no further information

** available.

F020 1258

EOR

F002 9

F010 4.2

F004 2

F005 CL

F006 Under the conditions of this study (static conditions) and based on the
* nominal concentrations, the 24 and 48 hour EC50 for allyl alcohol in the
* water flea (*Daphnia magna*) were 3.7 mg/L and 1.8 mg/L, respectively,
* while the 48 hour NOEC was

F007 Under the conditions of this study (static conditions) and based on the
* nominal concentrations, the 24 and 48 hour EC50 for allyl alcohol in the
* water flea (*Daphnia magna*) were 3.7 mg/L and 1.8 mg/L, respectively,
* while the 48 hour NOEC was 1.3 mg/L.

**

** Under the conditions of this study (static conditions) and based on the
* adjusted mean measured concentrations, the 24 and 48 hour EC50 for allyl
* alcohol in the water flea (*Daphnia magna*) were 3.66 mg/L and 1.65 mg/L,
* respectively, while the 48 hour NOEC was 1.06 mg/L.

**

** The slope of the concentration-response line at 48 hours was 16.

F020 1465

EOR

F002 9

F010 4.2

F004 2

F005 ME

F006 EXPOSURE CONDITIONS

** Static bioassays were performed in 250-mL glass beakers containing 200 mL
* of test water. Water was aged laboratory fresh water prepared by blending
* naturally hard well water with well water that was demineralized by reve

F007 EXPOSURE CONDITIONS

** Static bioassays were performed in 250-mL glass beakers containing 200 mL
* of test water. Water was aged laboratory fresh water prepared by blending
* naturally hard well water with well water that was demineralized by
* reverse osmosis.

**

** Organisms were exposed to nominal concentrations of 0 (control), 0.33,
* 0.65, 1.3, 2.5, 5.0, or 10 mg allyl alcohol/L test medium. Measured mean
* test concentrations adjusted for analytical recovery were < 0.040
* (control, sample quantitation limit), 0.373, 0.516, 1.06, 2.58, 4.85, or
* 10.5 mg/L. All test solutions appeared clear with no color associated
* with the test substance, and no visible precipitates, surface films, or
* undissolved test substance.

**

** GENERAL TEST METHOD

** Each treatment was replicated four times. The test beakers were placed in
* a temperature controlled water bath. Fluorescent lighting was maintained
* on a 16-hour daylight photoperiod with 30-minute simulated dawn and dusk
* periods. The light intensity, measured with a LI-COR Model LI-189 light
* meter equipped with a photometric sensor, ranged from 600 to 718 lux. The
* test was conducted for 48 hours commencing when daphnids were added to
* the test chambers. Daphnids were impartially added one at a time to
* labeled containers until each contained 5 daphnids. Each container was
* randomly assigned to a treatment replicate using a random number

* generator. Daphnids were then transferred from the containers to the
* appropriate test chamber, beginning with the control test chambers and
* proceeding to the highest test substance treatment. Five daphnids were
* transferred to each test chamber resulting in a total of 20 daphnids for
* control and test substance treatment. Impartial placement of daphnids
* was completed within 30 minutes after preparation of test solutions.
* Daphnids were observed for immobilization and sub lethal responses once
* every 24 hours thereafter for the remainder of the test. At approximately
* 24 hours after initiation, the daphnids were transferred from the old
* solutions (prepared at initiation) into new solutions (prepared 24 hours
* after initiation).

**
** TEST ORGANISMS

** First instar *Daphnia magna* neonates (< 24 hours old) obtained from an
* in-house culture < 24 hours prior to beginning of the test were used in
* this investigation. The organisms were not acclimated as the daphnids
* were cultured under test conditions. The daphnids were not fed during the
* test.

**
** WATER QUALITY

** Water temperature, dissolved oxygen and pH were recorded
** daily. Water quality parameters remained within acceptable limits for
* *Daphnia magna* throughout the test. Water temperature during the 48 hour
* exposure ranged from 19.7-21.0 °C. Dissolved oxygen concentrations ranged
* from 8.1-9.0 mg/L during the test, representing 93-103% of saturation.
* The pH of the test solutions ranged from range 8.4-8.6. Hardness,
* alkalinity and conductivity, measured in a sample of the dilution water
* at test initiation and approximately 24 hours after initiation were 150
* and 156 mg/L as CaCO₃, 164 and 168 mg/L as CaCO₃, and 315 and 316 uS,
* respectively.

**
** BIOLOGICAL OBSERVATIONS

** Observations of immobilization and/or mortality were recorded for all
* treatments. Observations were made at 24 and 48 hours from test
* initiation. Water fleas counted as dead were those that were immobilized
* (i.e., no observed movement of appendages or post abdomen within 15
* seconds after gentle agitation of the test chamber or direct gentle
* disturbance of the daphnid).

**
** ANALYTICAL CONFIRMATION

** Samples were collected from the parent solutions prepared at 0 and 24
* hours, and from pooled aged solutions at 24 and 48 hours. The pooled
* aged solution samples were collected after combining replicate test
* solutions by treatment. The fresh control and all fresh test substance
* treatments were sampled at 0 hour and the aged control and all test
* substance treatments sampled at 24 hours. The 24-hour fresh and 48-hour
* aged control and test substance treatments were sampled with the
* exception of the 10 mg total product treatment which was not sampled due
* to 100% immobilization in this treatment following 24 hours of exposure.
* Sampling began with the control and continued up to the highest test
* substance treatment. Each sample volume was approximately 50 mL. Each
* sample was acidified to pH <2.0 with HCL. Each acidified sample was
* transferred into an appropriately labeled clear, glass, 40 mL vial,
* filling the vial completely, and sealing the vial with no headspace.
* Samples were shipped to Environmental Chemistry, Inc (Houston, Texas) for
* analyses. The samples were analyzed in accordance with EPA Method 8620
* using GC/MS. Sample introduction was accomplished using the heated purge

* and trap Method 5030.

**

** STATISTICAL ANALYSIS

** Statistical analysis of the nominal concentrations versus immobility data
* was performed using an EC50 SAS program. The program calculated the EC50
* statistic and its 95% confidence limits using the probit method and
* Spearman-Karber method. Since the probit method could not perform the
* EC50 calculations based on the observed immobilization during the test,
* the values of the untrimmed Spearman-Karber method were reported. The
* no-observable-effect-concentration (NOEC) was based on the absence of any
* abnormal (sub lethal) effects or immobility. The slope of the
* concentration-response line was calculated by least-squares regression
* analysis of immobilization versus log of the nominal concentration.

F020 1462

EOR

F002 9

F010 4.2

F004 2

F005 RE

F006 Hicks, S.L. (2005). Acute toxicity of allyl alcohol 20906MB (Lyondell
* lot number CX30609214) to the water flea, *Daphnia magna*, determined under
* static-renewal test conditions. ABC Study No. 48909, ABC Laboratories,
* Inc., Columbia, Missouri

F007 Hicks, S.L. (2005). Acute toxicity of allyl alcohol 20906MB (Lyondell
* lot number CX30609214) to the water flea, *Daphnia magna*, determined under
* static-renewal test conditions. ABC Study No. 48909, ABC Laboratories,
* Inc., Columbia, Missouri. Sponsored by the Lyondell Chemical Company,
* Houston, TX.

F020 1474

EOR

F002 9

F010 4.2

F004 2

F005 RL

F006 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F007 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F020 1467

EOR

F002 9

F010 4.2

F004 2

F005 RS

F006 After 48 hours of exposure, immobility was 0, 0, 0, 0, 100, 100, and 100%
* in the 0 (control), 0.33, 0.65, 1.3, 2.5, 5.0, and 10 mg/L treatments,
* respectively. Quiescence was observed in the 2.5 and 5.0 mg allyl
* alcohol/L treatments at 24 h

F007 After 48 hours of exposure, immobility was 0, 0, 0, 0, 100, 100, and 100%
* in the 0 (control), 0.33, 0.65, 1.3, 2.5, 5.0, and 10 mg/L treatments,
* respectively. Quiescence was observed in the 2.5 and 5.0 mg allyl
* alcohol/L treatments at 24 hours. No other sub lethal effects were
* observed during the exposure.

**

** Results Based on Nominal Concentrations:

**

** 24-Hr EC50: 3.7 mg/L (95% confidence limits: 3.4 and 3.9 mg/L)

** 48-Hr EC50: 1.8 mg/L (95% confidence limit estimates: 1.3 and 2.5 mg/L)
** 48-Hr NOEC based on absence of immobility and sub lethal effects: 1.3 mg/L
** Slope of the 48-Hr Concentration-Response Line: 16
**

** Results Based on Mean Measured Concentrations
** (Adjusted for Analytical Recovery):
**

** 24-Hr EC50: 3.66 mg/L (95% confidence limits: 3.42 and 3.92 mg/L)
** 48-Hr EC50: 1.65 mg/L (95% confidence limit estimates: 1.06 and 2.58 mg/L)
** 48-Hr NOEC based on absence of immobility and sub lethal effects: 1.06
* mg/L

F020 1463

EOR

F002 9

F010 4.2

F004 2

F005 TS

F006 Allyl alcohol; 99.38% (Lyondell lot number CX30609214)

F007 Allyl alcohol; 99.38% (Lyondell lot number CX30609214)

F020 1464

EOR

F002 9

F010 4.3

F004 1

F005 CL

F006 Under the conditions of this study and based on the nominal
* concentrations, the 72-hour EbC50 and ErC50 for allyl alcohol in green
* alga (*Pseudokirchneriella subcapitata*) were 2.4 mg/L and 3.8 mg/L,
* respectively, while the 78 hour NOECs wer

F007 Under the conditions of this study and based on the nominal
* concentrations, the 72-hour EbC50 and ErC50 for allyl alcohol in green
* alga (*Pseudokirchneriella subcapitata*) were 2.4 mg/L and 3.8 mg/L,
* respectively, while the 78 hour NOECs were 1.3 mg/L.
**

** Under the conditions of this study and based on the geometric mean of
* measured concentrations (adjusted for analytical recovery), the 72-hour
* EbC50 and ErC50 for allyl alcohol in green alga (*Pseudokirchneriella*
* *subcapitata*) were 2.25 mg/L and 5.38 mg/L, respectively, while the 78
* hour NOECs were 0.930 mg/L.

F020 1471

EOR

F002 9

F010 4.3

F004 1

F005 ME

F006 EXPOSURE CONDITIONS

** Bioassays were performed in 250-mL Erlenmeyer flasks. The test medium was
* filtered (0.45 micrometers) freshwater algal growth medium prepared with
* laboratory reagent water and reagent grade chemicals.
**

** The algal cells

F007 EXPOSURE CONDITIONS

** Bioassays were performed in 250-mL Erlenmeyer flasks. The test medium was
* filtered (0.45 micrometers) freshwater algal growth medium prepared with
* laboratory reagent water and reagent grade chemicals.
**

** The algal cells were exposed to nominal concentrations of 0 (control),

* 0.65, 1.3, 2.5, 5.0, or 10 mg allyl alcohol/L test medium. Geometric
* measured mean test concentrations adjusted for analytical recovery were <
* 0.040 (control, sample quantitation limit), 0.343, 0.930, 2.41, 6.03, or
* 9.12 mg/L. All test solutions appeared clear with no color associated
* with the test substance, and no visible precipitates, surface films, or
* undissolved test substance.

**
** GENERAL TEST METHOD

** Each treatment was replicated three times and each replicate contained
* 100 mL of the appropriate parent solution. An additional replicate of the
* lowest test substance treatment, containing 100 mL of the appropriate
* parent solution, was also prepared and used to evaluate incorporation of
* the test substance into the algal biomass. At test initiation each
* replicate was inoculated with 1.0 mL of an algal concentrate containing
* approximately 1.0×10^6 cells/mL, resulting in a final density of
* approximately 1.0×10^4 cells/mL for each flask. At 24, 48, and 72
* hours, cell density was measured in all replicates of each treatment by
* direct microscopic counting with a hemacytometer. All cell density
* measurements, with the exception of the 72 hour cell density
* measurements, were performed ± 1 hour from test initiation. The cell
* density measurements at 72 hours were performed 10 minutes prior to the
* observation point required by the protocol, but this deviation did not
* affect the integrity of the study. During the three-day exposure period,
* the flasks were randomly positioned using a computer generated random
* number table and incubated at $24 \pm 2^\circ\text{C}$ in a temperature controlled
* environmental chamber under continuous cool-white fluorescent lighting.
* A continuous recording of environmental chamber temperature was made from
* one uninoculated blank flask using an electronic datalogger with
* thermistor probe. Light intensity was measured daily with a LI-COR Model
* LI-189 light meter equipped with a photometric sensor and ranged from
* 8,561 to 8,679 lux. The flasks were swirled on an orbital shaker table at
* approximately 100 rpm throughout the test. Temperature and pH were
* measured in parent solutions prior to distribution of the solutions to
* the test flasks. At 72 hours, temperature and pH were measured in one
* replicate of all treatments. Temperature and pH were measured with a WTW
* pH 330i meter.

**
** TEST ORGANISMS

** Pseudokirchneriella subcapitata (UTEX 1648) was obtained from an
* established laboratory culture which originated with an inoculum received
* from the University of Texas, Austin, Texas.

**
** WATER QUALITY

** Test solution temperature during the 72 hour exposure ranged from
* 22.5-24.0 °C. Dissolved oxygen concentrations ranged from 8.1-9.0 mg/L
* during the test, representing 93-103% of saturation. The pH of the test
* solutions at 72 hours ranged from range 7.7-9.2. The pH of the control
* and test substance treatments = 1.3 mg allyl alcohol/L at 72 hours
* deviated more than 1 pH unit from the initial pH as a result of the algal
* biomass present at 72 hours. The pH deviation of more than 1 pH unit did
* not affect the integrity of the test since acceptable growth (16X
* increase) was observed in the control.

**
** BIOLOGICAL OBSERVATIONS

** Cell density was determined for each replicate of the control and each
* test concentration at 24, 48, and 72 hours to evaluate algal growth
* (inhibition or enhancement). Cell density determinations were

* accomplished using a hemacytometer and an optical microscope. In
* addition to cell density determinations, microscopic examinations were
* conducted to determine any morphological and physical effects on the
* algal cells.

**

** ANALYTICAL CONFIRMATION

** Samples were collected from the control and each test substance treatment
* at 0 and 72 hours of the test. The 0 hour samples were collected from the
* parent solutions. The 72 hour samples were collected from the pooled
* solutions after combining replicate solutions. At 72 hours, a sample
* from the 0.65 mg allyl alcohol/L abiotic treatment was collected directly
* from the test flask. Sampling began with the control and continued up to
* the highest test substance treatment. Each sample volume was
* approximately 50 mL. Each sample was acidified to pH <2.0 with HCL. Each
* acidified sample was transferred into an appropriately labeled clear,
* glass, 40 mL vial, filling the vial completely, and sealing the vial with
* no headspace. Samples were shipped to Environmental Chemistry, Inc
* (Houston, Texas) for analyses. The samples were analyzed in accordance
* with EPA Method 8620 using GC/MS. Sample introduction was accomplished
* using the heated purge and trap Method 5030.

**

** STATISTICAL ANALYSIS

** The NOECs, based on cell density, area under the growth curve, and growth
* rate, were estimated using a one-way analysis of variance (ANOVA)
* procedure and a two-tailed Dunnett's test. The alternate hypothesis was
* the mean for the growth parameter was reduced or enhanced in comparison
* to the pooled control mean. Prior to the Dunnett's test, a
* Shapiro-Wilk's test and a Levene's test were conducted to test for
* normality and homogeneity of variance, respectively, over treatments at
* each time point. If the results of the Shapiro-Wilk's and Levene's test
* indicated normality and insignificant heterogeneity, the analysis was
* performed on the non-transformed raw data. In instances of non-normality
* or heterogeneity, a square root transformation was performed. If both
* the non-transformed raw data and the transformed data exhibited
* non-normality or inequality of variance, a non-parametric analysis of
* variance was performed on the ranks of the raw data values.
* Non-parametric analyses were performed on the 48 and 72 hour growth rate
* data. Parametric analyses were performed on the 24, 48 and 72 hour area
* under the growth curve data and the 24 hour growth rate data.

F020 1468

EOR

F002 9

F010 4.3

F004 1

F005 RE

F006 Hicks, S.L. (2005). Toxicity of allyl alcohol 20906MB (Lyondell lot
* number CX30609214) to the unicellular green alga, *Pseudokirchneriella*
* *subcapitata*. ABC Study No. 48910, ABC Laboratories, Inc., Columbia,
* Missouri. Sponsored by the Lyond

F007 Hicks, S.L. (2005). Toxicity of allyl alcohol 20906MB (Lyondell lot
* number CX30609214) to the unicellular green alga, *Pseudokirchneriella*
* *subcapitata*. ABC Study No. 48910, ABC Laboratories, Inc., Columbia,
* Missouri. Sponsored by the Lyondell Chemical Company, Houston, TX.

F020 1473

EOR

F002 9

F010 4.3

F004 1
F005 RL
F006 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.
F007 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.
F020 1472
EOR
F002 9
F010 4.3
F004 1
F005 RS
F006 After 72 hours of exposure, the mean cell density in the control was 118
* x 10E+04 cells/mL. This value represented an increase of 118 times the
* initial target inoculation density and demonstrated control growth was
* acceptable for the test.
F007 After 72 hours of exposure, the mean cell density in the control was 118
* x 10E+04 cells/mL. This value represented an increase of 118 times the
* initial target inoculation density and demonstrated control growth was
* acceptable for the test. The mean cell density at 72 hours ranged from
* 1.0 x 10E+04 in the 10 mg/L treatment to 124 x 10E+04 in the 0.65 mg/L
* treatment. Percent differences in cell density, as compared to the
* control, ranged from -99% in the 10 mg/L treatment to +5% in the 0.65
* mg/L treatment.
**
** Results Based on Nominal Concentrations:
**
** Hour / EC Type / EC Value (mg/L) / 95% Confidence Limit (mg/L) / NOEC
* (mg/L)
**
** 24 EbC50 2.2 2.0 and 2.3 0.65
** 24 ErC50 2.3 2.0 and 2.7 1.3
**
** 48 EbC50 2.2 2.1 and 2.4 1.3
** 48 ErC50 3.3 2.7 and 3.8 1.3
**
** 72 EbC50 2.4 2.3 and 2.4 1.3
** 72 ErC50 3.8 3.5 and 4.0 1.3
**
** Results Based on the Geometric Mean of the Measured Concentrations
* (Adjusted for Analytical Recovery):
**
** Hour / EC Type / EC Value (mg/L) / 95% Confidence Limit (mg/L) / NOEC
* (mg/L)
**
** 24 EbC50 2.09 1.95 and 2.23 0.343
** 24 ErC50 2.26 1.90 and 2.61 0.930
**
** 48 EbC50 2.11 1.77 and 2.46 0.930
** 48 ErC50 5.14 4.79 and 5.50 0.930
**
** 72 EbC50 2.25 2.21 and 2.30 0.930
** 72 ErC50 5.38 5.28 and 5.47 0.930
F020 1469
EOR
F002 9
F010 4.3

F004 1

F005 TS

F006 Allyl alcohol; 99.38% (Lyondell lot number CX30609214)

F007 Allyl alcohol; 99.38% (Lyondell lot number CX30609214)

F020 1470

EOR

F002 9

F010 5.0

F004 1

F005 CL

F006 Results from these studies indicate that both binding of
** 14C-allyl alcohol to liver macromolecules and subsequent
** periportal hepatic necrosis are mediated by a metabolite of
** allyl alcohol. This conclusion is compatible with the
** hypothesis t

F007 Results from these studies indicate that both binding of
** 14C-allyl alcohol to liver macromolecules and subsequent
** periportal hepatic necrosis are mediated by a metabolite of
** allyl alcohol. This conclusion is compatible with the
** hypothesis that the toxic metabolite is acrolein.

F020 1260

EOR

F002 9

F010 5.0

F004 1

F005 ME

F006 ANIMALS AND TREATMENTS

** Male SD rats (200g) were pretreated with either saline (0.5
** ml i.p.) or pyrazole (375 mg/kg bwt i.p.; inhibitor of
** hepatic alcohol dehydrogenase) 2 hr prior to administration
** of allyl alcohol (0.05 ml/kg bwt i.p.; 2.4

F007 ANIMALS AND TREATMENTS

** Male SD rats (200g) were pretreated with either saline (0.5
** ml i.p.) or pyrazole (375 mg/kg bwt i.p.; inhibitor of
** hepatic alcohol dehydrogenase) 2 hr prior to administration
** of allyl alcohol (0.05 ml/kg bwt i.p.; 2.46 mCi/mmmole).

**

** Comment: Assuming a density of 0.85, this regime was
** equivalent to approx. 42.5 mg allyl alcohol/kg bwt.

**

** AUTORADIOGRAPHY

** Paraffin sections from liver, lung and kidney were coated
** with Kodak NTB-2 emulsion, developed for 4 wk and later
** stained with hemotoxylin and eosin. Comment: since no steps
** were taken to prevent extraction of unbound radiolabel from
** the tissue into the organic solvents used to embed the
** tissues, the author assumed that most of the exposed grains
** of the emulsion were indicative of label covalently bound to
** tissue sections.

**

** COVALENT BINDING

** Animals were sacrificed 6, 8 or 24 hr post-treatment with
** allyl alcohol. Samples of liver, lung and kidney were
** homogenized in 4 volumes of water, and protein/nucleic acid
** precipitated with an equal volume ice cold 20%
** trichloroacetic acid. The precipitate was extracted 5 times
** with 10 ml methanol (60 degrees C) to remove radioactivity

** (further extractions ineffective at removing any additional
** label). The pellet was dissolved in NaOH (1.0 N) and
** aliquots taken for liquid scintillation counting.

F020 1261
EOR
F002 9
F010 5.0
F004 1
F005 RE
F006 Reid, W (1972) Mechanism of allyl alcohol-induced hepatic
** necrosis. *Experientia* 28, 1058-1061.
F007 Reid, W (1972) Mechanism of allyl alcohol-induced hepatic
** necrosis. *Experientia* 28, 1058-1061.

F020 1262
EOR
F002 9
F010 5.0
F004 1
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.

F020 1263
EOR
F002 9
F010 5.0
F004 1
F005 RS
F006 Photomicrographs included in the publication show that
** extensive periportal necrosis was present 24 hr after
** administration of allyl alcohol, whereas no microscopic
** changes were visible in lungs or kidney (photomicrographs
** not presented).
**
F007 Photomicrographs included in the publication show that
** extensive periportal necrosis was present 24 hr after
** administration of allyl alcohol, whereas no microscopic
** changes were visible in lungs or kidney (photomicrographs
** not presented).
**
** Covalent binding studies demonstrated a time-dependent
** decrease in amount of label bound in liver, whereas little
** radioactivity was present in lung and kidney. Autoradiograms
** (included in report) demonstrated that most of the binding
** occurred in the periportal zone, with little present in the
** centrilobular region.
**
** Inhibition of alcohol dehydrogenase fully prevented hepatic
** necrosis, and decreased the amount of label bound to liver
** by approx. 80%. Autoradiograms confirmed that binding of
** ¹⁴C-allyl alcohol was markedly reduced in periportal
** hepatocytes. Covalent binding in lung was also decreased by
** pretreatment with pyrazole, whereas renal binding was
** unaffected.

**
**

** Covalent binding data:

** Treatment (n) Time (hr) pmol 14C-allyl alcohol/mg protein
** Liver Lung Kidney
** Control (5) 8 119.5 16.1 10.7
** Pyrazole (2) 8 21.6* 11.2 4.2
**
** Control (2) 24 80.2 10.5 3.6
** Pyrazole (2) 24 12.9* 4.9* 2.4
** * P<0.05, test not stated

F020 1264

EOR

F002 9

F010 5.0

F004 1

F005 TS

F006 Described as 14C-allyl alcohol, specific activity 2.46

** mCi/mmol; no further information available.

F007 Described as 14C-allyl alcohol, specific activity 2.46

** mCi/mmol; no further information available.

F020 1265

EOR

F002 9

F010 5.0

F004 2

F005 CL

F006 Rats given a single i.p. treatment of allyl alcohol

** exhibited greater hepatic necrosis, elevated levels of
** plasma GPT and greater covalent binding to liver protein
** than rats given an equivalent dose of deuterated allyl
** alcohol. These differ

F007 Rats given a single i.p. treatment of allyl alcohol

** exhibited greater hepatic necrosis, elevated levels of
** plasma GPT and greater covalent binding to liver protein
** than rats given an equivalent dose of deuterated allyl
** alcohol. These differences correlated with significantly
** greater formation of acrolein and acrylic acid by liver
** fractions in vitro when allyl alcohol was substrate compared
** to that seen with deuterated allyl alcohol. These
** NADH-dependent reactions were sensitive to inhibition by
** pyrazole and disulfiram, indicating a role for alcohol- and
** aldehyde dehydrogenases in the hepatic metabolism of allyl
** alcohol.

F020 1266

EOR

F002 9

F010 5.0

F004 2

F005 ME

F006 ANIMALS AND TREATMENTS

** Male SD rats (200-220g; n=4) were treated (0.05 ml, i.p.)

** with either allyl alcohol or deuterated allyl alcohol

** (d2-allyl alcohol). After 24 hr, surviving animals were

** killed by exsanguination (blood collected in hepa

F007 ANIMALS AND TREATMENTS

** Male SD rats (200-220g; n=4) were treated (0.05 ml, i.p.)
** with either allyl alcohol or deuterated allyl alcohol
** (d2-allyl alcohol). After 24 hr, surviving animals were
** killed by exsanguination (blood collected in heparinised
** beakers) and the liver excised.

** Comment: Assuming a density of 0.85, 0.05 ml is equivalent
** to approx. 42.5 mg/kg bwt.

** ASSESSMENT OF LIVER DAMAGE

** Samples of liver were fixed (buffered formalin), paraffin
** sections prepared and stained with hemotoxylin and eosin.
** Cellular damage was assessed by the method of Mitchell et
** al. (1973) J Pharmacol Exp Ther, 187, 185. Glutamyl-pyruvate
** transferase levels (GPT) in plasma were determined by a
** external laboratory (Pathologists Central Laboratory,
** Seattle).

** COVALENT BINDING

** The extent of covalent binding was determined in rats given
** 0.05 ml (i.p.) 14C-allyl alcohol or d2-14C-allyl alcohol as
** described by Reid (1972): see preceding record.

** IN VITRO METABOLISM

** Metabolism of allyl alcohol and d2-allyl alcohol by hepatic
** 9000 g supernatant (+/- pyrazole; alcohol dehydrogenase
** inhibitor), 104,000 g cytosol (+/- disulfiram; inhibitor of
** aldehyde dehydrogenase) and microsomal fraction (+/- NADPH;
** epoxidation of allyl alcohol to glycidol) was followed using
** the semicarbazide reaction (formation chromophore absorbing
** at 257 nm). Standards containing known amounts of acrolein
** were run in parallel.

F020 1267

EOR

F002 9

F010 5.0

F004 2

F005 RE

F006 Patel, JM, Gordon, WP, Nelson, SD and Leibman, KC (1983)

** Comparison of hepatic biotransformation and toxicity of
** allyl alcohol and [1,1-2H2]allyl alcohol in rats. Drug Metab
** Disp 11, 164-166.

F007 Patel, JM, Gordon, WP, Nelson, SD and Leibman, KC (1983)

** Comparison of hepatic biotransformation and toxicity of
** allyl alcohol and [1,1-2H2]allyl alcohol in rats. Drug Metab
** Disp 11, 164-166.

F020 1268

EOR

F002 9

F010 5.0

F004 2

F005 RL

F006 Study available for review. Non-guideline, non-GLP

** experimental study. Reasonably well reported methods and
** results, suitable for assessment.

F007 Study available for review. Non-guideline, non-GLP

** experimental study. Reasonably well reported methods and

** synthesis and purified by preparative gas chromatography
** (>99.5% pure).
**
** 14C-allyl alcohol was purchased from ICN Chemical and
** Radioisotope Division (Irvine, CA) with a specific activity
** of 10.8 mCi/mmol.
**
** Deuterated 14C-allyl alcohol (0.75 mCi/mmol) was prepared by
** micro custom synthesis from 1-14C-acrylic acid.

F020 1271
EOR
F002 9
F010 5.1.1
F004 1
F005 CL
F006 Under the conditions of the test, an oral LD50 of 99-105
** mg/kg bw was obtained in male rats given allyl alcohol by
** oral gavage.
F007 Under the conditions of the test, an oral LD50 of 99-105
** mg/kg bw was obtained in male rats given allyl alcohol by
** oral gavage.

F020 1272
EOR
F002 9
F010 5.1.1
F004 1
F005 ME
F006 Graded amounts of a 1% solution of allyl alcohol were
** administered by gavage (dosing needle) to groups of 5 male
** rats (body weights: 111-143 g or 170-252 g; two studies).
** Surviving animals were observed for up to 10 days. No information pr
F007 Graded amounts of a 1% solution of allyl alcohol were
** administered by gavage (dosing needle) to groups of 5 male
** rats (body weights: 111-143 g or 170-252 g; two studies).
** Surviving animals were observed for up to 10 days. No information
* presented on body weights. Animals that died on study and representative
* survivors at the end of the observation period were euthanized and
* subjected to necropsy. Thorough examination of tissues was made, and
* specimens of all viscera were preserved in 10% formalin for microscopic
* examination.
**
** No further experimental details provided.
**
** The LD50 was calculated according to the method of Weil
** (1952) Biometrics, 8, 343.

F020 1273
EOR
F002 9
F010 5.1.1
F004 1
F005 RE
F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F020 1274

EOR

F002 9

F010 5.1.1

F004 1

F005 RL

F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.

F007 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.

F020 1275

EOR

F002 9

F010 5.1.1

F004 1

F005 RS

F006 The main clinical sign was described as apathy, along with
** anxiety. Coma and diarrhea preceded death in moribund
** animals.

** Gross post mortem findings in decedent animals included:
** - edema and congestion of the lungs
** - visceral congestion
** -

F007 The main clinical sign was described as apathy, along with
** anxiety. Coma and diarrhea preceded death in moribund
** animals.

** Gross post mortem findings in decedent animals included:
** - edema and congestion of the lungs
** - visceral congestion
** - presence of mucus in the intestinal tract
** - discolored liver (some necrosis)
** - swollen, discolored kidneys
**

** Histopathological examination of tissue from decedent
** animals revealed:
** - lung congestion
** - liver damage (congestion and necrosis of periportal
** sinusoids, central pallor and necrosis)
** - presence of heme casts and cloudy swelling in the kidney.
** Similar (but less frequent) lesions were present in animals
** that survived the 10 d observation period.
**

** Calculated oral LD50 values of 99 mg/kg bw (for animals
** weighing 170-252 g) and 105 mg/kg bw (for animals weighing
** 111-143 g) were obtained from the study.

F020 1276

EOR

F002 9

F010 5.1.1

F004 1

F005 TS

F006 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.

F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.

F020 1277
EOR
F002 9
F010 5.1.1
F004 2
F005 CL
F006 Under the conditions of the test, an oral LD50 of 96 mg/kg
** bw was obtained in male mice given allyl alcohol by oral
** gavage.
F007 Under the conditions of the test, an oral LD50 of 96 mg/kg
** bw was obtained in male mice given allyl alcohol by oral
** gavage.
F020 1278
EOR
F002 9
F010 5.1.1
F004 2
F005 ME
F006 Graded amounts of a 1% solution of allyl alcohol were
** administered by gavage (dosing needle) to groups of 6 male
** mice (17.5-22.5 g). Surviving animals were observed for up
** to 10 days.
**
** No further experimental details provided.
**
** The LD50 was
F007 Graded amounts of a 1% solution of allyl alcohol were
** administered by gavage (dosing needle) to groups of 6 male
** mice (17.5-22.5 g). Surviving animals were observed for up
** to 10 days.
**
** No further experimental details provided.
**
** The LD50 was calculated according to the method of Weil
** (1952) Biometrics, 8, 343.
F020 1279
EOR
F002 9
F010 5.1.1
F004 2
F005 RE
F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F020 1280
EOR
F002 9
F010 5.1.1
F004 2
F005 RL
F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F007 Study available for review. Early investigation, briefly

** reported methods and findings but considered suitable for
** assessment.

F020 1281
EOR
F002 9
F010 5.1.1
F004 2
F005 RS
F006 The main clinical sign was described as apathy preceded by
** excitability. Ataxia was occasionally present.
**
** Gross post mortem findings in decedent animals included:
** - occasional edema and congestion of the lungs
** - no other abnormalities pre
F007 The main clinical sign was described as apathy preceded by
** excitability. Ataxia was occasionally present.
**
** Gross post mortem findings in decedent animals included:
** - occasional edema and congestion of the lungs
** - no other abnormalities present
**
** No microscopic changes were detected.
**
** The calculated oral LD50 was 96 mg/kg bw.

F020 1282
EOR
F002 9
F010 5.1.1
F004 2
F005 TS
F006 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.

F020 1283
EOR
F002 9
F010 5.1.1
F004 3
F005 RE
F006 Smyth, HF and Carpenter, CP (1948) Further experience with
** the range finding test in the industrial toxicology
** laboratory. J Ind Hyg Toxicol 30, 63-68.
F007 Smyth, HF and Carpenter, CP (1948) Further experience with
** the range finding test in the industrial toxicology
** laboratory. J Ind Hyg Toxicol 30, 63-68.

F020 1284
EOR
F002 9
F010 5.1.1
F004 3
F005 RL
F006 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.
F007 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but

** supports overall hazard assessment.

F020 1285
EOR
F002 9
F010 5.1.1
F004 3
F005 RM
F006 No information on methods or findings available.
F007 No information on methods or findings available.
F020 1286
EOR
F002 9
F010 5.1.1
F004 3
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1287
EOR
F002 9
F010 5.1.1
F004 5
F005 CL
F006 Under the conditions of the test, an oral LD50 of 70 mg/kg
** bw was obtained in male rats given allyl alcohol by oral
** gavage.
F007 Under the conditions of the test, an oral LD50 of 70 mg/kg
** bw was obtained in male rats given allyl alcohol by oral
** gavage.
F020 1288
EOR
F002 9
F010 5.1.1
F004 5
F005 ME
F006 Groups of young Osborne-Mendel rats (5 per sex per dose
** level) were fasted (18 hr) prior to administration of 2%
** aqueous allyl alcohol by gavage (dose levels tested not stated). Animals
* were observed for clinical signs and time of death onl
F007 Groups of young Osborne-Mendel rats (5 per sex per dose
** level) were fasted (18 hr) prior to administration of 2%
** aqueous allyl alcohol by gavage (dose levels tested not stated). Animals
* were observed for clinical signs and time of death only for up to 2
* weeks. No information presented on body weights or necropsy findings.
* The LD50 was calculated according to the method of Litchfield and
* Wilcoxon (1949) J Pharmacol 96, 99.
F020 1289
EOR
F002 9
F010 5.1.1
F004 5
F005 RE
F006 Jenner, PM, Hagan, EC, Taylor, JM, Cook, EL and Fitzhugh, OG
** (1964) Food flavourings and compounds of related structure.
** I. Acute oral toxicity. Fd Cosmet Toxicol 2, 327-343.

F007 Jenner, PM, Hagan, EC, Taylor, JM, Cook, EL and Fitzhugh, OG
** (1964) Food flavourings and compounds of related structure.
** I. Acute oral toxicity. Fd Cosmet Toxicol 2, 327-343.
F020 1290
EOR
F002 9
F010 5.1.1
F004 5
F005 RL
F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F007 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F020 1291
EOR
F002 9
F010 5.1.1
F004 5
F005 RS
F006 LD50 = 70 mg/kg bw (95% CI=63-79).
**
** Clinical signs: depression, colorless secretion from eyes,
** diarrhea, unkempt appearance.
**
** Onset of death: between 4 hr and 4 d.
F007 LD50 = 70 mg/kg bw (95% CI=63-79).
**
** Clinical signs: depression, colorless secretion from eyes,
** diarrhea, unkempt appearance.
**
** Onset of death: between 4 hr and 4 d.
F020 1292
EOR
F002 9
F010 5.1.1
F004 5
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1293
EOR
F002 9
F010 5.1.2
F004 1
F005 CL
F006 Under the conditions of the test, an acute LC50 of 125-140
** ppm (295-330 mg/m³) was obtained for male rats exposed to
** allyl alcohol vapor by inhalation for 4 hr.
F007 Under the conditions of the test, an acute LC50 of 125-140
** ppm (295-330 mg/m³) was obtained for male rats exposed to
** allyl alcohol vapor by inhalation for 4 hr.
F020 1294
EOR

F002 9
F010 5.1.2
F004 1
F005 ME
F006 Groups of 6 male rats (100-200 g) were exposed for 1, 4 or 8
** hr to 40-2300 ppm+ allyl alcohol vapor in a glass chamber
** (nominal volume 19.5 l). Animals were observed for 10 days
** post-treatment.
** [+ equivalent to 95-5450 mg/m³; based upon 1
F007 Groups of 6 male rats (100-200 g) were exposed for 1, 4 or 8
** hr to 40-2300 ppm+ allyl alcohol vapor in a glass chamber
** (nominal volume 19.5 l). Animals were observed for 10 days
** post-treatment.
** [+ equivalent to 95-5450 mg/m³; based upon 1 ppm = 2.37
** mg/m³; Bevan (2001), Patty's Toxicology, 5th edition, p463]
**
** The test atmosphere was generated by passing liquid allyl
** alcohol via a syringe pump into an evaporation chamber
** through which air flowed at 8.6 to 12.9 l/min, depending on
** the desired exposure concentration. The atmosphere within
** the chamber was allowed to equilibrate to 95-99% of the
** desired concentration before introduction of the animals.
** The nominal concentration in the chamber was calculated
** according to Jacobs (1949) The Analytical Chemistry of
** Industrial Poisons, Hazards and Solvents, 2nd edition,
** Interscience Publishers Inc., NY.
**
** Glass bottles of 1 l capacity containing distilled water
** were connected to the sampling port of the chamber and vapor
** drawn through the water by suction. 0.01N bromine in acetic
** acid and a mercuric acetate catalyst were added to the
** sample, the excess bromine reduced to by iodide and the
** iodide titrated with 0.01N thiosulfate (Reid and Beddard
** (1954) Analyst, 79, 456)
**
** The LC50 was calculated according to the method of Weil
** (1952) Biometrics, 8, 343.
F020 1295
EOR
F002 9
F010 5.1.2
F004 1
F005 RE
F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F020 1296
EOR
F002 9
F010 5.1.2
F004 1
F005 RL
F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for

** assessment.
F007 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F020 1297
EOR
F002 9
F010 5.1.2
F004 1
F005 RS
F006 Coma and diarrhea preceded death in moribund animals.
**
** Gross post mortem findings in decedent animals included:
** - edema and congestion of the lungs
** - visceral congestion
** - presence of mucus in the intestinal tract
** - discolored liver (some
F007 Coma and diarrhea preceded death in moribund animals.
**
** Gross post mortem findings in decedent animals included:
** - edema and congestion of the lungs
** - visceral congestion
** - presence of mucus in the intestinal tract
** - discolored liver (some necrosis)
** - swollen, discolored kidneys
**
** Histopathological examination of tissue from decedent
** animals revealed:
** - lung congestion
** - liver damage (congestion and necrosis of periportal
** sinusoids, central pallor and necrosis)
** - presence of heme casts and cloudy swelling in the kidney.
** Similar (but less frequent) lesions were present in animals
** that survived the 10 d observation period.
**
** A calculated 4 hr LC50 value of 165 ppm (nominal) was
** obtained from the study.
**
** Chemical analysis of vapor drawn from the exposure chamber
** revealed a 15-25% loss of allyl alcohol. After correction
** therefore, the LC50 was in a range 125-140 ppm.
F020 1298
EOR
F002 9
F010 5.1.2
F004 1
F005 TS
F006 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F020 1299
EOR
F002 9
F010 5.1.2
F004 2
F005 CL

F006 Under the conditions of the test, an acute LC50 of 250 ppm
** (590 mg/m³) was obtained for male rats exposed to allyl
** alcohol vapor by inhalation for 4 hr.

F007 Under the conditions of the test, an acute LC50 of 250 ppm
** (590 mg/m³) was obtained for male rats exposed to allyl
** alcohol vapor by inhalation for 4 hr.

F020 1300
EOR
F002 9
F010 5.1.2
F004 2
F005 ME

F006 Six male or female Sherman rats (approx. 100 - 150 g) were
** exposed to allyl alcohol vapor (nominal concentrations up to
** 250 ppm) for 4 hr, and the animals observed for a 14 d.
**
** The test atmosphere was generated by passing liquid allyl
** alcohol

F007 Six male or female Sherman rats (approx. 100 - 150 g) were
** exposed to allyl alcohol vapor (nominal concentrations up to
** 250 ppm) for 4 hr, and the animals observed for a 14 d.
**
** The test atmosphere was generated by passing liquid allyl
** alcohol into an heated evaporation chamber through which
** metered air was forced. Rats were exposed in a 9 l
** desiccator fitted with inlet and outlet ports.
**
** The reported values are nominal (based on weight of material
** evaporated) and not verified analytically.

F020 1301
EOR
F002 9
F010 5.1.2
F004 2
F005 RE

F006 Carpenter, CP, Smyth, HF, and Pozzani, UC (1949) The assay
** of acute vapor toxicity, and the grading and interpretation
** of results on 96 chemical compounds. J Ind Hyg Toxicol 31,
** 343-346.

F007 Carpenter, CP, Smyth, HF, and Pozzani, UC (1949) The assay
** of acute vapor toxicity, and the grading and interpretation
** of results on 96 chemical compounds. J Ind Hyg Toxicol 31,
** 343-346.

F020 1302
EOR
F002 9
F010 5.1.2
F004 2
F005 RL

F006 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.

F007 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.

F020 1303
EOR

F002 9
F010 5.1.2
F004 2
F005 RS
F006 Tabulated summary information included in the report notes
** that exposure to 250 ppm allyl alcohol resulted in mortality
** in 2/6, 3/6 or 4/6 rats.
F007 Tabulated summary information included in the report notes
** that exposure to 250 ppm allyl alcohol resulted in mortality
** in 2/6, 3/6 or 4/6 rats.
F020 1304
EOR
F002 9
F010 5.1.2
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1305
EOR
F002 9
F010 5.1.2
F004 4
F005 CL
F006 Under the conditions of the test, rats survived a 7 hr
** exposure to 50 ppm (approx. 120 mg/m³) allyl alcohol vapor.
F007 Under the conditions of the test, rats survived a 7 hr
** exposure to 50 ppm (approx. 120 mg/m³) allyl alcohol vapor.
F020 1306
EOR
F002 9
F010 5.1.2
F004 4
F005 RE
F006 McCord, CP (1932) The toxicity of allyl alcohol J Am Med
** Assoc 98, 2269-2270.
F007 McCord, CP (1932) The toxicity of allyl alcohol J Am Med
** Assoc 98, 2269-2270.
F020 1307
EOR
F002 9
F010 5.1.2
F004 4
F005 RL
F006 Study available for review. Early investigation, briefly
** reported methods and findings, supports hazard
** characterization.
F007 Study available for review. Early investigation, briefly
** reported methods and findings, supports hazard
** characterization.
F020 1308
EOR
F002 9
F010 5.1.2
F004 4

F005 RM

F006 Three groups of white rats (sex, strain not specified) were
** exposed to 50 ppm (n=5), 200 ppm (n=4) or 1000 ppm (n=6)
** allyl alcohol vapor for 7 hr/d until death.

**
** All animals from the 1000 ppm exposure group died within 3
** hr of the start of

F007 Three groups of white rats (sex, strain not specified) were
** exposed to 50 ppm (n=5), 200 ppm (n=4) or 1000 ppm (n=6)
** allyl alcohol vapor for 7 hr/d until death.

**
** All animals from the 1000 ppm exposure group died within 3
** hr of the start of the first exposure, with signs of
** discomfort and labored breathing with discharge from the
** nose and mouth. Gross necropsy revealed hemorrhage of the
** lungs and, to a lesser extent, the intestinal tract, kidneys
** and bladder.

**
** An unspecified number of animals died following a single
** exposure to 200 ppm allyl alcohol, with similar clinical
** symptoms to those described above.

**
** At 50 ppm, all animals survived a 7 hr exposure.

F020 1309

EOR

F002 9

F010 5.1.2

F004 4

F005 TS

F006 Described as allyl alcohol; no further information
** available.

F007 Described as allyl alcohol; no further information
** available.

F020 1310

EOR

F002 9

F010 5.1.3

F004 1

F005 CL

F006 Under the conditions of the test, a dermal LD50 of 89 mg/kg
** bw was obtained in the rabbit following 24 hr occluded
** exposure to allyl alcohol.

F007 Under the conditions of the test, a dermal LD50 of 89 mg/kg
** bw was obtained in the rabbit following 24 hr occluded
** exposure to allyl alcohol.

F020 1311

EOR

F002 9

F010 5.1.3

F004 1

F005 ME

F006 4 groups of 3 male rabbits (1.3-3.9 kg) were exposed to
** 40-250 mg/kg bw allyl alcohol.

**
** Patches of rubber dam (3x3 cm) were placed over gauze (1 cm
** diameter) and sealed to clipped skin using rubber cement.
** Allyl alcohol (25-200 mg/kg bw) wa

F007 4 groups of 3 male rabbits (1.3-3.9 kg) were exposed to
** 40-250 mg/kg bw allyl alcohol.
**
** Patches of rubber dam (3x3 cm) were placed over gauze (1 cm
** diameter) and sealed to clipped skin using rubber cement.
** Allyl alcohol (25-200 mg/kg bw) was injected through the
** dam, onto the skin surface, and the puncture site sealed
** (rubber cement). The body was then further wrapped with
** toweling and adhesive tape to protect the dressing.
**
** Animals were observed for 10 days post-treatment.
**
** The LD50 was calculated according to the method of Weil
** (1952) Biometrics, 8, 343.

F020 1312
EOR
F002 9
F010 5.1.3
F004 1
F005 RE
F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F020 1313
EOR
F002 9
F010 5.1.3
F004 1
F005 RL
F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F007 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.

F020 1314
EOR
F002 9
F010 5.1.3
F004 1
F005 RS
F006 The main clinical sign was described as apathy, along with
** flushing of the skin. Ataxia and diarrhea preceded death in
** moribund animals.
**
** Gross post mortem findings in decedent animals included:
** - edema and congestion of the lungs
** - viscer
F007 The main clinical sign was described as apathy, along with
** flushing of the skin. Ataxia and diarrhea preceded death in
** moribund animals.
**
** Gross post mortem findings in decedent animals included:
** - edema and congestion of the lungs

** - visceral congestion
** - presence of mucus in the intestinal tract
** - discolored liver (some necrosis)
** - swollen kidneys.
**
** Histopathological examination of tissues from decedent
** animals revealed:
** - lung congestion
** - liver damage (congestion and necrosis of periportal
** sinusoids, central pallor and necrosis)
** - heme casts and cloudy swelling in the kidney
** Similar (but less frequent) histopathological lesions were
** present in animals that survived the 10 d observation
** period.
**
** The calculated dermal LD50 was 89 mg/kg bw.
F020 1315
EOR
F002 9
F010 5.1.3
F004 1
F005 TS
F006 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F020 1316
EOR
F002 9
F010 5.1.3
F004 2
F005 RE
F006 Smyth, HF and Carpenter, CP (1948) Further experience with
** the range finding test in the industrial toxicology
** laboratory. J Ind Hyg Toxicol 30, 63-68.
F007 Smyth, HF and Carpenter, CP (1948) Further experience with
** the range finding test in the industrial toxicology
** laboratory. J Ind Hyg Toxicol 30, 63-68.
F020 1317
EOR
F002 9
F010 5.1.3
F004 2
F005 RL
F006 Study available for review. Pre-guideline, non-GLP study.
** Limitations in design and reporting but supports overall
** hazard assessment.
F007 Study available for review. Pre-guideline, non-GLP study.
** Limitations in design and reporting but supports overall
** hazard assessment.
F020 1318
EOR
F002 9
F010 5.1.3
F004 2
F005 RM
F006 No information on methods or findings available.

**
** Based on a density of 0.85 g/ml, this is equivalent to
** approx. 45 mg/kg bw.
F007 No information on methods or findings available.
**
** Based on a density of 0.85 g/ml, this is equivalent to
** approx. 45 mg/kg bw.
F020 1319
EOR
F002 9
F010 5.1.3
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1320
EOR
F002 9
F010 5.2.1
F004 1
F005 CL
F006 Under the conditions of this test, allyl alcohol was
** slightly irritating to rabbit skin.
F007 Under the conditions of this test, allyl alcohol was
** slightly irritating to rabbit skin.
F020 1321
EOR
F002 9
F010 5.2.1
F004 1
F005 ME
F006 Allyl alcohol (0.5 ml) was applied to intact and abraded
** skin (ventral surface) of 3 male albino rabbits. (It is not
** stated if fur at the treatment site was clipped first.) The
** application site was covered with gauze under a rubber dam,
** fas
F007 Allyl alcohol (0.5 ml) was applied to intact and abraded
** skin (ventral surface) of 3 male albino rabbits. (It is not
** stated if fur at the treatment site was clipped first.) The
** application site was covered with gauze under a rubber dam,
** fastened with adhesive tape.
**
** The test site was examined 24 hr post-application.
F020 1322
EOR
F002 9
F010 5.2.1
F004 1
F005 RE
F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F020 1323

EOR

F002 9

F010 5.2.1

F004 1

F005 RL

F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.

F007 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.

F020 1324

EOR

F002 9

F010 5.2.1

F004 1

F005 RS

F006 Slight erythema was present at the application site (intact
** skin) of one animal when the patch was removed (24 hr
** timepoint) but this had fully resolved by 48 hr. No other
** reactions were noted.

F007 Slight erythema was present at the application site (intact
** skin) of one animal when the patch was removed (24 hr
** timepoint) but this had fully resolved by 48 hr. No other
** reactions were noted.

F020 1325

EOR

F002 9

F010 5.2.1

F004 1

F005 TS

F006 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.

F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.

F020 1326

EOR

F002 9

F010 5.2.2

F004 1

F005 CL

F006 Under the conditions of this test, allyl alcohol was
** irritating to rabbit eye producing reversible conjunctival
** redness, iridial injection and corneal opacity that
** persisted at least 48 hr post instillation.

F007 Under the conditions of this test, allyl alcohol was
** irritating to rabbit eye producing reversible conjunctival
** redness, iridial injection and corneal opacity that
** persisted at least 48 hr post instillation.

F020 1327

EOR

F002 9

F010 5.2.2

F004 1

F005 ME

F006 Allyl alcohol (0.05 ml) was instilled into the left eye of 3

** male albino rabbits.
**
** The eyes were examined after 1 hr for signs of irritation
** (first unstained, then after application of 5% fluorescein
** sodium). Further examinations were carr
F007 Allyl alcohol (0.05 ml) was instilled into the left eye of 3
** male albino rabbits.
**
** The eyes were examined after 1 hr for signs of irritation
** (first unstained, then after application of 5% fluorescein
** sodium). Further examinations were carried our at 24 hr and
** 48 hr and during the subsequent week.
F020 1328
EOR
F002 9
F010 5.2.2
F004 1
F005 RE
F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.
F020 1329
EOR
F002 9
F010 5.2.2
F004 1
F005 RL
F006 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F007 Study available for review. Early investigation, briefly
** reported methods and findings but considered suitable for
** assessment.
F020 1330
EOR
F002 9
F010 5.2.2
F004 1
F005 RS
F006 Conjunctival erythema (affecting 3/3 rabbits) and edema
** (affecting 1/3 rabbits) was present 1 hr post-instillation
** (no numerical scores reported).
**
** At 24 hr, conjunctival erythema (score 4-6; affecting 3/3
** rabbits), corneal opacity (score 5
F007 Conjunctival erythema (affecting 3/3 rabbits) and edema
** (affecting 1/3 rabbits) was present 1 hr post-instillation
** (no numerical scores reported).
**
** At 24 hr, conjunctival erythema (score 4-6; affecting 3/3
** rabbits), corneal opacity (score 5-10; affecting 2/3) and
** injection of the iris (score 1; affecting 1/3) was noted.
**
** 48 hr post-instillation, conjunctival redness (score 2-6;

** affecting 3/3 rabbits) and corneal opacity (score 5;
** affecting 1/3) but no iridial effects were present.
**
** All eyes appeared normal by the end of 1 week.
F020 1331
EOR
F002 9
F010 5.2.2
F004 1
F005 TS
F006 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F020 1332
EOR
F002 9
F010 5.2.2
F004 2
F005 CL
F006 Based on the available information, allyl alcohol appears
** irritating to the eye of the rabbit.
F007 Based on the available information, allyl alcohol appears
** irritating to the eye of the rabbit.
F020 1333
EOR
F002 9
F010 5.2.2
F004 2
F005 ME
F006 0.005 ml or 0.02 ml allyl alcohol was instilled into the eye
** of an undefined number of rabbits.
**
** 18-24 hr later, the eye was examined in strong daylight,
** then re-examined after staining with fluorescein.
**
** The following grading system was
F007 0.005 ml or 0.02 ml allyl alcohol was instilled into the eye
** of an undefined number of rabbits.
**
** 18-24 hr later, the eye was examined in strong daylight,
** then re-examined after staining with fluorescein.
**
** The following grading system was used to record any injuries
** present:
** - corneal opacity (max. score = 6)
** - keratoconus (max. score = 6)
** - iris effects (max. score = 2)
** - necrosis (visible after fluorescein staining; max. score = 6)
** - total maximum score = 20
F020 1334
EOR
F002 9
F010 5.2.2
F004 2
F005 RE
F006 Carpenter, CP and Smyth, HF (1946) Chemical burns to the

** rabbit cornea. Am J Ophthalmology 29, 1363-1372.
F007 Carpenter, CP and Smyth, HF (1946) Chemical burns to the
** rabbit cornea. Am J Ophthalmology 29, 1363-1372.
F020 1335
EOR
F002 9
F010 5.2.2
F004 2
F005 RL
F006 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.
F007 Study available for review. Pre-guideline, non-GLP study
** investigation. Only limited information available but
** supports overall hazard assessment.
F020 1336
EOR
F002 9
F010 5.2.2
F004 2
F005 RS
F006 Descriptive information presented in the report indicates
** that 0.02 ml allyl alcohol resulted in a total score of
** 5/20, while instillation of 0.005 ml resulted in a total
** score of 5 or less out of 20.
**
** INTERPRETATION
** The volume applied to t
F007 Descriptive information presented in the report indicates
** that 0.02 ml allyl alcohol resulted in a total score of
** 5/20, while instillation of 0.005 ml resulted in a total
** score of 5 or less out of 20.
**
** INTERPRETATION
** The volume applied to the eye in these studies (0.005-0.02
** ml) is less than that recommended in Guideline 405 (0.1 ml).
** A more pronounced response would be anticipated after
** instillation of 0.1 ml, suggesting that allyl alcohol would
** be irritating to the eye.
F020 1337
EOR
F002 9
F010 5.2.2
F004 2
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1338
EOR
F002 9
F010 5.2.2
F004 3
F005 CL
F006 Under the conditions of the test, allyl alcohol was
** irritating to rabbit eye.

F007 Under the conditions of the test, allyl alcohol was
** irritating to rabbit eye.

F020 1339

EOR

F002 9

F010 5.2.2

F004 3

F005 ME

F006 Allyl alcohol (0.1 ml) was instilled in the eye (between
** lower eyelid and eyeball) of 3 adult Rsk:NZW rabbits, and
** the lids held together for approx. 1 s. The other eye served
** as a control. Eyes were examined and responses noted at 4,
** 24, 4

F007 Allyl alcohol (0.1 ml) was instilled in the eye (between
** lower eyelid and eyeball) of 3 adult Rsk:NZW rabbits, and
** the lids held together for approx. 1 s. The other eye served
** as a control. Eyes were examined and responses noted at 4,
** 24, 48, 72, 96 and 168 hr post-instillation. Erythema,
** chemosis, iritis and corneal opacity were recorded according
** to the method of Draize et al. (1944; J Pharmac exp Ther 82,
** 337) under a Philips TLE 22W/29 lamp.

**

** In a second study conducted 6 mo later (3 additional
** rabbits), corneal swelling (corneal thickness) was also
** assessed using an ultrasonic pachometer (Ophthasonic
** pachometer, TEKNAR Inc, St Louis, MO) and the results
** expressed as the mean percentage increase for all 3 animals
** at 24, 48 and 72 hr.

**

** The mean scores for erythema, chemosis and corneal opacity
** were calculated for all 6 rabbits at 24, 48 and 72 hr.

F020 1340

EOR

F002 9

F010 5.2.2

F004 3

F005 RE

F006 Jacobs, GA and Martens, MA (1989) An objective method for
** the evaluation of eye irritation in vivo. Fd Chem Toxic 27,
** 255-258.

F007 Jacobs, GA and Martens, MA (1989) An objective method for
** the evaluation of eye irritation in vivo. Fd Chem Toxic 27,
** 255-258.

F020 1341

EOR

F002 9

F010 5.2.2

F004 3

F005 RL

F006 Study available for review. Guideline study. Briefly
** reported methods and findings but considered suitable for
** assessment.

F007 Study available for review. Guideline study. Briefly
** reported methods and findings but considered suitable for
** assessment.

F020 1342

EOR

F002 9
F010 5.2.2
F004 3
F005 RS
F006 Mean results at 24, 48 and 72 hr (n):
**
** Erythema: 2.89 (6)
** Chemosis: 1.23 (6)
** Corneal opacity: 2.09 (6)
** Corneal swelling (thickness): 76% (3)
**
** (Individual, animal- or time specifi
F007 Mean results at 24, 48 and 72 hr (n):
**
** Erythema: 2.89 (6)
** Chemosis: 1.23 (6)
** Corneal opacity: 2.09 (6)
** Corneal swelling (thickness): 76% (3)
**
** (Individual, animal- or time specific results not reported).
F020 1343
EOR
F002 9
F010 5.2.2
F004 3
F005 TS
F006 Allyl alcohol, >99% pure, UCB, Brussels, Belgium.
F007 Allyl alcohol, >99% pure, UCB, Brussels, Belgium.
F020 1344
EOR
F002 9
F010 5.4
F004 1
F005 CL
F006 Under the conditions of this study, a sub-chronic NOAEL of
** 50 ppm allyl alcohol in drinking water (equivalent to 6.2
** mg/kg bw/day) was obtained for female rats and 100 ppm
** (equivalent to 8.3 mg/kg bwt/day) was obtained for males,
** based upon
F007 Under the conditions of this study, a sub-chronic NOAEL of
** 50 ppm allyl alcohol in drinking water (equivalent to 6.2
** mg/kg bw/day) was obtained for female rats and 100 ppm
** (equivalent to 8.3 mg/kg bwt/day) was obtained for males,
** based upon treatment and time related increases relative
** kidney weight. Possible confounding by dehydration (caused
** by poor palatability of the test solutions) cannot, however, be
* completely excluded.
F020 1345
EOR
F002 9
F010 5.4
F004 1
F005 ME
F006 ANIMALS AND TREATMENTS
** Groups of Wistar rats (15/sex/treatment level) were exposed
** to allyl alcohol in the drinking water at 0 (control), 50,
** 100, 200 or 800 ppm for 15 weeks. Additional groups of 5

** rats/sex were given 0, 200 or 800 ppm all

F007 ANIMALS AND TREATMENTS

** Groups of Wistar rats (15/sex/treatment level) were exposed
** to allyl alcohol in the drinking water at 0 (control), 50,
** 100, 200 or 800 ppm for 15 weeks. Additional groups of 5
** rats/sex were given 0, 200 or 800 ppm allyl alcohol for 2 weeks or 6
* weeks. (Comment: group sizes inconsistent with OECD TG 408)
** Animal supplier: commercial supplier (not specified), SPF
** colony.
** Housing: 5/cage; 20+/-1 degree C; 50-60% relative humidity.
** Body weights: recorded pre-treatment and on days 1, 6, 8, 13, 15 or 20.
** Food and water intake: measured over the 24-hour period
** preceding each weighing.
** Diet: Spratts Laboratory Diet No 1, ad libitum
** Water: not specified
**

** RENAL FUNCTION AND URINE ANALYSIS

** Renal function was investigated during wk 2 or wk 5
** (n=5/sex) and in wk 15 (n=12/sex). Concentrating ability
** (specific gravity, volume) was determined by measuring the
** urine volume produced during 0-6 hr of water deprivation; at
** wk 5 and 15, the concentration test was extended to include
** samples collected over 4 hr following a 16 hr period without
** water. Diluting ability was then assessed over 2 hr
** following a water load of 25 ml/kg bwt; these samples were
** also assessed for specific gravity, appearance and
** microscopic constituents (cells) as well as a
** semi-quantitative evaluation of glucose, ketones, bile salts
** and blood. At wk 5 and 15, and studies performed after 2 wk
** treatment, concentrating ability was determined over 2 hr
** following a 6 hr deprivation period.
**

** HEMATOLOGY

** Blood collected at necropsy was assessed for hemoglobin
** content, packed cell volume and red cell and total leukocyte
** counts. A differential leukocyte count and a reticulocyte
** count was performed on samples from control and high dose
** animals. (Comment: several omissions compared with OECD TG
** 408.)
**

** CLINICAL CHEMISTRY

** Serum was analyzed for urea, glucose, total protein and
** albumin, together with ASAT, ALAT and lactic dehydrogenase
** activity. (Comment: several omissions compared with OECD TG
** 408.)
**

** NECROPSY AND HISTOPATHOLOGY

** At the end of the appropriate treatment period, animals were killed by
* exsanguination under barbiturate anesthesia following an overnight fast.
* Animals were subject to a post-mortem examination and any external or
* internal macroscopic abnormalities noted. The brain, pituitary, thyroid,
* heart, liver, spleen, kidneys, adrenals, gonads, stomach, small intestine
* and cecum were weighed. Samples of these organs and of salivary gland,
* trachea, aorta, thymus, lymph nodes, urinary bladder, colon, rectum,
* pancreas, uterus, skeletal muscle and any other tissue that appeared to
* be abnormal were fixed in 10% buffered formalin. Paraffin-wax sections
* of these tissues were stained with hematoxylin and eosin for

* histopathological investigation. (Comment: range of tissues comparable
* to OECD TG 408, but with some exclusions notably aorta, trachea/lungs,
* skin, eye, peripheral nerve, bone marrow).

**

** STATISTICAL METHODS

** Mean body weights, food and water intake and organ weights
** were analyzed using Student's t-test. Renal function data
** were analyzed by the method of White (1952; Biometrics, 8,
** 33).

F020 1346

EOR

F002 9

F010 5.4

F004 1

F005 RE

F006 Carpanini, FMB, Gaunt, IF, Hardy, J, Gangolli, SD,

** Butterworth, KR and Lloyd, AG (1978) Short-term toxicity of
** allyl alcohol in rats. Toxicol. 9, 29-45.

F007 Carpanini, FMB, Gaunt, IF, Hardy, J, Gangolli, SD,

** Butterworth, KR and Lloyd, AG (1978) Short-term toxicity of
** allyl alcohol in rats. Toxicol. 9, 29-45.

F020 1347

EOR

F002 9

F010 5.4

F004 1

F005 RL

F006 Study available for review. Pre-guideline, non-GLP study.

** Reasonably well reported methods and results, suitable for
** assessment.

F007 Study available for review. Pre-guideline, non-GLP study.

** Reasonably well reported methods and results, suitable for
** assessment.

F020 1348

EOR

F002 9

F010 5.4

F004 1

F005 RS

F006 INTAKE OF TEST SUBSTANCE

** The calculated mean intake of allyl alcohol over the course
** of the study (based on body weight and water intake data)
** was:

** Males: 0, 4.8, 8.3, 14.0, 48.2 mg/kg bw/d

** Females: 0, 6.2, 6.9, 17.1 and 58.4 mg/kg bw/d

**

** BO

F007 INTAKE OF TEST SUBSTANCE

** The calculated mean intake of allyl alcohol over the course
** of the study (based on body weight and water intake data)
** was:

** Males: 0, 4.8, 8.3, 14.0, 48.2 mg/kg bw/d

** Females: 0, 6.2, 6.9, 17.1 and 58.4 mg/kg bw/d

**

** BODY WEIGHT, FOOD INTAKE AND WATER CONSUMPTION

** Body weight was significantly decreased in males given 100
** or 200 ppm allyl alcohol from wk 2 of treatment, and from

** males and females given 800 ppm following a single day's
** treatment. Terminal body weights (g) at week 15 were:

** - Males

** Control: 472
** 50 ppm: 453
** 100 ppm 449 (ns)
** 200 ppm: 420 (P<0.01)
** 800 ppm: 270 (P<0.001)

** - Females

** Control: 253
** 50 ppm: 260
** 100 ppm 260
** 200 ppm: 257
** 800 ppm: 205 (P<0.001)

** Food intake was significantly decreased in male rats from
** the 200 (-11%; P<0.01) and 800 ppm (-32%; P,0.001) groups,
** and in high dose females (-18%; P,0.001).

** There was a statistically significant decrease in water
** intake in all treated groups:

** - Males

** Control: 27.7
** 50 ppm: 24.2 (P<0.01)
** 100 ppm 19.4 (P<0.01)
** 200 ppm: 15.5 (P<0.001)
** 800 ppm: 10.0 (P<0.001)

** - Females

** Control: 26.5
** 50 ppm: 22.0 (P<0.05)
** 100 ppm 17.2 (P<0.001)
** 200 ppm: 14.4 (P<0.001)
** 800 ppm: 9.8 (P<0.001)

** HEMATOLOGY AND CLINICAL CHEMISTRY

** No abnormalities reported. (Comment: data not available for
** evaluation.)

** RENAL FUNCTION AND URINE ANALYSIS

** There was a statistically significant decrease (-50% to
** -75%) in excretion of cells in male rats following 2, 5 and
** 15 wk treatment with 800 ppm allyl alcohol.

** Urine concentrating ability (ml/6 hr) was significantly
** impaired in a time- and dose dependent manner in males:

** - Wk 2

** Control: 1.9
** 200 ppm: 2.2
** 800 ppm: 0.6 (P<0.05)

** - Wk 5

** Control: 3.8
** 200 ppm: 0.9 (P<0.01)
** 800 ppm: 0.9 (P<0.01)

** - Wk 15

** Control: 4.5
** 50 ppm: 2.7
** 100 ppm: 2.4 (P<0.01)

** 200 ppm: 1.8 (P<0.001)
 ** 800 ppm: 0.8 (P<0.05)
 ** Essentially similar, but statistically non-significant,
 ** changes were present in females.

** Urine concentrating ability over 16-20 hr was unaffected by
 ** treatment with allyl alcohol.

** Urine volume (ml) was statistically significantly decreased
 ** during the dilution test at wk 2, 5 and 15 for animals (both
 ** sexes) treated with allyl alcohol in drinking water at 200
 ** ppm or above. Representative data for males:

** - Wk 2
 ** Control: 4.3
 ** 200 ppm: 0.7 (P<0.01)
 ** 800 ppm: 0.3 (P<0.01)
 ** - Wk 5
 ** Control: 7.3
 ** 200 ppm: 2.2 (P<0.05)
 ** 800 ppm: 0.9 (P<0.05)
 ** - Wk 15
 ** Control: 8.4
 ** 50 ppm: 7.5
 ** 100 ppm: 5.9
 ** 200 ppm: 3.6 (ns)
 ** 800 ppm: 0.5 (P<0.001)

** Specific gravity was increased (approx. 1-4%) during the
 ** dilution test at wk 2, 5 and 15 for males and females given
 ** allyl alcohol in drinking water at 200 ppm or above. These
 ** changes were generally statistically significant.

** POST MORTEM EXAMINATION

** No gross abnormalities were present in any sex/treatment
 ** group.

** Absolute organ weights were generally decreased in males,
 ** and to a lesser extent in females, in a time- and treatment
 ** related manner after ingestion of 100 ppm allyl alcohol or
 ** above. Although statistically significant (especially in
 ** high dose males), these decrements were consistent with the
 ** lower body weights recorded in treated animals. The
 ** exception was absolute kidney weight for females, which was
 ** statistically significantly increased (11-13%; P<0.001) at
 ** week 15 in the 100, 200 and 800 ppm treatment groups. Organ weight
 * results at 15 weeks summarized below:

** --abs. kidney wt--

	males	females	
Control		2.42	1.48
50	2.43		1.48
100	2.48		1.65 P<0.001)
200	3.07		1.67 P<0.001)
800	2.10		1.64 P<0.001)

** --abs. brain wt (g)--
 ** males females

**	Control	1.97	1.70
**	50	1.95	1.75
**	100	1.98	1.74
**	200	1.89	1.74
**	800	1.81 (P<0.001)	1.66
**			
**		--abs. heart wt (g) --	
**	males	females	
**	Control	1.15	0.78
**	50	1.12	0.76
**	100	1.09	0.77
**	200	1.05	0.75
**	800	0.84 (P<0.001)	0.66 (P<0.001)
**			
**		--abs. liver wt (g) --	
**	males	females	
**	Control	11.02	5.87
**	50	11.15	5.72
**	100	11.29	6.21
**	200	9.81 (P<0.01)	5.93
**	800	7.93	5.63
**			
**		--abs. spleen wt (g) --	
**	males	females	
**	Control	0.72	0.52
**	50	0.75	0.55
**	100	0.76	0.56
**	200	0.71	0.54
**	800	0.64	0.53
**			
**		--abs. stomach wt (g) --	
**	males	females	
**	Control	1.64	1.26
**	50	1.76	1.24
**	100	1.79 (P<0.01)	1.34
**	200	1.66	1.26
**	800	1.44 (P<0.01)	1.33
**			
**		--abs. small intestine wt (g) --	
**	males	females	
**	Control	7.69	6.23
**	50	7.92	6.13
**	100	7.86	6.06
**	200	7.26	5.73
**	800	6.40 (P<0.001)	5.63
**			
**		--abs. cecum wt (g) --	
**	males	females	
**	Control	1.10	0.84
**	50	1.07	0.85
**	100	1.07	0.90
**	200	1.06	0.87
**	800	0.84 (P<0.001)	0.73
**			
**		--abs. adrenals (mg)--	
**	males	females	

**	Control	67.5	74.0
**	50	65.6	77.7
**	100	64.6	80.9
**	200	61.5	76.3
**	800	59.4	71.5

**	--abs. gonad wt --		
**	males (g)	females (mg)	
**	Control	3.52	118.7
**	50	3.41	120.5
**	100	3.50	128.1
**	200	3.48	127.1
**	800	3.36	110.1

**	--abs. pituitary wt (mg) --		
**	males	females	
**	Control	10.21	11.96
**	50	9.74	10.64
**	100	9.69	11.51
**	200	9.71	11.02
**	800	8.47	10.88

**	--abs. thyroid wt (mg) --		
**	males	females	
**	Control	19.1	16.8
**	50	19.3	17.6
**	100	20.1	15.2
**	200	18.7	15.9
**	800	17.4	14.9

**	-- Terminal body wt (g) --		
**	males	females	
**	Control	437	253
**	50	447	247
**	100	426	247
**	200	404 (P<0.01)	241
**	800	289 (P<0.001)	201 (P<0.001)

Relative organ weights (g/100 g bwt) were generally increased to a statistically significant extent in high dose animals of both sexes at study termination. Relative kidney weights and relative stomach weights, in contrast, were increased in a dose-dependent manner in females at week 2 and in both sexes following 6 or 15 weeks of treatment. Results at 15 weeks summarized below:

**	--rel. kidney wt (g/100g bwt) --		
**	males	females	
**	Control	0.56	0.59
**	50	0.55	0.60
**	100	0.58	0.67 (P<0.001)
**	200	0.59 (P<0.01)	0.70 (P<0.001)
**	800	0.73 (P<0.001)	0.83 (P<0.001)

**	--rel. stomach wt (g/100g bwt) --		
**	males	females	
**	Control	0.37	0.50

**	50	0.39	0.50	
**	100	0.42 (P<0.001)	0.54 (P<0.05)	
**	200	0.41 (P<0.01)	0.52	
**	800	0.50 (P<0.01)	0.66 (P<0.001)	
**		--rel. brain wt (g/100g bwt)--		
**		males	females	
**	Control		0.45	0.68
**	50	0.44	0.71	
**	100	0.47	0.71	
**	200	0.47	0.72	
**	800	0.64 (P<0.001)	0.83 (P<0.001)	
**		--rel. heart wt (g/100g bwt) --		
**		males	females	
**	Control		0.26	0.31
**	50	0.25	0.31	
**	100	0.26	0.31	
**	200	0.26	0.31	
**	800	0.29	0.33	
**		--rel. liver wt (g/100g bwt) --		
**		males	females	
**	Control		2.52	2.33
**	50	2.50	2.33	
**	100	2.65	2.51	
**	200	2.43	2.46	
**	800	2.74 (P<0.01)	2.75 (P<0.001)	
**		--rel. spleen wt (g/100g bwt) --		
**		males	females	
**	Control		0.17	0.20
**	50	0.17	0.22	
**	100	0.18	0.23	
**	200	0.18	0.22	
**	800	0.22 (P<0.001)	0.25	
**		--rel. small intestine wt (g/100g bwt) --		
**		males	females	
**	Control		1.76	2.48
**	50	1.77	2.50	
**	100	1.85	2.45	
**	200	1.80	2.39	
**	800	2.24 (P<0.001)	2.82 (P<0.01)	
**		--rel. cecum wt (g/100g bwt) --		
**		males	females	
**	Control		0.25	0.33
**	50	0.24	0.34	
**	100	0.25	0.36	
**	200	0.26	0.36	
**	800	0.29 (P<0.05)	0.37	
**		--rel. adrenals (mg/100g bwt)--		
**		males	females	
**	Control		15.5	29.6
**	50	14.9	31.9	

** 100 15.2 33.0
 ** 200 15.3 31.7
 ** 800 21.0 (P<0.001) 35.6 (P<0.01)

** --rel. gonad wt --
 ** males (g/100g bwt) females (mg/100g bwt)
 ** Control 0.81 47.3
 ** 50 0.77 49.4
 ** 100 0.82 52.0
 ** 200 0.86 52.7
 ** 800 1.18 (P<0.001) 55.1

** --rel. pituitary wt (mg/100g bwt) --
 ** males females
 ** Control 2.34 4.74
 ** 50 2.20 4.33
 ** 100 2.28 4.60
 ** 200 2.41 4.52
 ** 800 3.00 (P<0.01) 5.46

** --rel. thyroid wt (mg/100g bwt) --
 ** males females
 ** Control 4.37 6.67
 ** 50 4.33 7.13
 ** 100 4.72 6.13
 ** 200 4.66 6.98
 ** 800 6.09 (P<0.001) 7.48 (P<0.05)

** HISTOPATHOLOGICAL EVALUATION

** Minor changes were present in the microscopic appearance of
 ** the liver (occasional vacuolated cells, scattered individual cell
 * necrosis with lymphocyte infiltration), kidneys (occasional vacuolated
 * tubular cells) and spleen (mild degree of peribronchial lymphocyte
 * infiltration) however these occurred at a similar incidence in control
 * and treated animals. (No microscopic changes were reported in stomach and
 * no other details on the histopathological evaluation were noted.)

** DERIVATION OF NOAEL

** The majority of findings from this study, in particular
 ** lower body weights, alterations in organ weights and changes in renal
 * function, appear secondary to a reduction in water intake that was
 * particularly pronounced in high dose animals. This is presumed to reflect
 * poor palatability of the dosing solutions. Against this background, there
 * was a more generalized increase in absolute kidney weight
 ** (females), relative kidney weight (both sexes) and relative
 ** stomach weight (both sexes) in the intermediate and high
 ** dose groups after 15 weeks of treatment. While local irritation (stomach)
 * or dehydration (kidney) may have contributed in part to these findings,
 * they may also be indicative of mild systemic renal toxicity with a
 * sub-chronic NOAEL of 50 ppm (6.2 mg/kg bwt/day) in females and 100 ppm
 * (8.3 mg/kg bwt/day) in males.

F020 1349

EOR

F002 9

F010 5.4

F004 1

F005 TS

F006 Allyl alcohol, 99% pure, SG (20 degree C) 0.849-0.852; bpt
** 95-98 degrees C, supplied by Bush Boake Allen Ltd, London.
F007 Allyl alcohol, 99% pure, SG (20 degree C) 0.849-0.852; bpt
** 95-98 degrees C, supplied by Bush Boake Allen Ltd, London.
F020 1350
EOR
F002 9
F010 5.4
F004 2
F005 CL
F006 Under the conditions of this study, a sub-chronic inhalation
** NOAEC of 5 ppm (12 mg/m³) was obtained for decreased body
** weight gain in rats exposed to allyl alcohol over 12 wk.
** With regard to organ effects, increases in relative kidney
** weig
F007 Under the conditions of this study, a sub-chronic inhalation
** NOAEC of 5 ppm (12 mg/m³) was obtained for decreased body
** weight gain in rats exposed to allyl alcohol over 12 wk.
** With regard to organ effects, increases in relative kidney
** weight were consistent with a systemic NOAEC of 20 ppm (47
** mg/m³).
F020 1351
EOR
F002 9
F010 5.4
F004 2
F005 ME
F006 ANIMALS AND TREATMENTS
** Groups of male Long-Evans rats (10/treatment level) were
** exposed to allyl alcohol in three separate studies using the
** following exposure concentrations: 0, 1, 5 or 20 ppm; 0, 40
** or 60 ppm; and 0, 100 or 150 ppm. Expos
F007 ANIMALS AND TREATMENTS
** Groups of male Long-Evans rats (10/treatment level) were
** exposed to allyl alcohol in three separate studies using the
** following exposure concentrations: 0, 1, 5 or 20 ppm; 0, 40
** or 60 ppm; and 0, 100 or 150 ppm. Exposures lasted 7 hr/d, 5
** d/wk for a total of 60 exposures (12 wk).
**
** The animals were exposed in stainless steel chambers (200 l
** capacity). Airflow within the chamber was 10.9-21.1 l/min
** (3-6 air changes per hour), and the temperature in the
** exposure room was 20-25 degrees C.
**
** The test atmosphere was generated by passing liquid allyl
** alcohol via a syringe pump into an evaporation chamber
** through which air flowed at 8.6 to 12.9 l/min, depending on
** the desired exposure concentration. The atmosphere within
** the chamber was allowed to equilibrate to 95-99% of the
** desired concentration before introduction of the animals.
** The nominal concentration in the chamber was calculated
** according to Jacobs (1949) The Analytical Chemistry of
** Industrial Poisons, Hazards and Solvents, 2nd edition,
** Interscience Publishers Inc., NY.
**
** Clinical observations: daily
** Body weights: weekly

** Diet: no details
** Water: not specified

**
** NECROPSY AND HISTOPATHOLOGY

** At the end of the experimental period, survivors were
** weighed, decapitated under ether anesthesia and subject to a
** post-mortem examination. Livers, kidneys and lungs from all
** animals were weighed and preserved (10% formalin) along with
** samples of thyroid, heart, thymus, pancreas, spleen, adrenal
** gland, testis, bladder and brain collected from alternate
** animals (i.e. 5/10 per treatment level). All preserved
** tissues were subject to microscopic evaluation.

**
** STATISTICAL METHODS

** Relative organ weights and percentage body weight gains were
** analyzed using Student's T-test.

F020 1352

EOR

F002 9

F010 5.4

F004 2

F005 RE

F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F020 1353

EOR

F002 9

F010 5.4

F004 2

F005 RL

F006 Study available for review. Pre-guideline, non-GLP study.
** Limitations in design and reporting but supports overall
** hazard assessment.

F007 Study available for review. Pre-guideline, non-GLP study.
** Limitations in design and reporting but supports overall
** hazard assessment.

F020 1354

EOR

F002 9

F010 5.4

F004 2

F005 RM

F006 Based on a conversion factor of 1 ppm = 2.37 mg/m³ (Bevan
** (2001), Patty's Toxicology, 5th edition, p463), the
** following exposure concentrations can be derived:

**
** ppm mg/m³
** 1 2.4
** 2 4.7
** 5 12
** 20

F007 Based on a conversion factor of 1 ppm = 2.37 mg/m³ (Bevan
** (2001), Patty's Toxicology, 5th edition, p463), the

** following exposure concentrations can be derived:

ppm	mg/m ³
1	2.4
2	4.7
5	12
20	47
40	95
60	142
100	237
150	355

F020 1355

EOR

F002 9

F010 5.4

F004 2

F005 RS

F006 The achieved concentration of allyl alcohol within the exposure chambers for the higher exposure conditions was:

** 40.7 +/- 3.2 ppm (24)

** 61.1 +/- 2.4 ppm (24)

** 103.2 +/- 8.7 ppm (22)

** 166.7 +/- 17.7 ppm (14)

** Values given as mean +/-SD, num

F007 The achieved concentration of allyl alcohol within the

** exposure chambers for the higher exposure conditions was:

** 40.7 +/- 3.2 ppm (24)

** 61.1 +/- 2.4 ppm (24)

** 103.2 +/- 8.7 ppm (22)

** 166.7 +/- 17.7 ppm (14)

** Values given as mean +/-SD, number of determinations in parenthesis.

**

** MORTALITY AND CLINICAL SIGNS

** Four rats from the 150 ppm group died during the first exposure, 2 were dead by the following morning and 2 died during the second exposure. The remaining 2 rats from the 150 ppm group died by the 10th exposure (end of week 2). There were 6 deaths in animals exposed to 100 ppm (time period inadequately characterized), and 1 death following 4 exposures to 60 ppm allyl alcohol.

**

** Clinical signs in the 150 ppm group included gasping, severe depression, nasal discharge, eye irritation and corneal opacity. Similar but less intense clinical signs were present in animals exposed to 40-100 ppm. No clinical signs were present in animals exposed to 20 ppm and below.

**

** BODY WEIGHT

** Mean percentage body weight gain was statistically significantly lower in animals exposed to 20 ppm or above:

** 0 ppm 134%

** 1 ppm 133%

** 5 ppm 126%

** 20 ppm 110% (P<0.05)

**

** 0 ppm 128%

** 40 ppm 90% (P<0.05)
** 60 ppm 75% (P<0.05)
**
** 0 ppm 135%
** 100 ppm 75% (P<0.05)
** 150 ppm (no survivors at 15 wk)
**

** RELATIVE ORGAN WEIGHTS

** Relative kidney weight (g/100 g bw) was increased 8-10% in
** animals exposed to 40 ppm or 60 ppm allyl alcohol vapor for
** 12 wk:

** 0 ppm 0.724
** 1 ppm 0.706
** 5 ppm 0.765
** 20 ppm 0.715
**

** 0 ppm 0.582
** 40 ppm 0.629
** 60 ppm 0.643 (P<0.05)
**

** Relative lung weight (g/100 g bw) was increased after
** exposure to 40 ppm allyl alcohol vapor for 12 wk:

** 0 ppm 0.410
** 40 ppm 0.435 (P<0.05)
** 60 ppm 0.531 (P<0.05)
** (No data given for lower exposures)
**

** Relative liver weights for treated animals were
** indistinguishable from those of the controls.
**

** NECROPSY, HISTOPATHOLOGY

** Livers from rats exposed to 150 ppm allyl alcohol appeared
** hemorrhagic and the lungs pale and spotted. The kidneys
** appeared normal. The only microscopic observation was slight
** congestion of the lungs and liver (no further details).
**

** Lesions and microscopic findings at 100, 60 and 40 ppm were
** described as similar but less intense to those reported at
** 150 ppm.
**

** There were no unusual gross or microscopic findings at 20
** ppm or below.
**

** DERIVATION OF NOAEC

** Although only limited data are available from this study,
** increases in relative kidney and lung weight are consistent
** with a LOAEC of 40 ppm. No lung data are available for
** animals exposed to lower concentrations, however relative
** kidney weights were unaffected indicating a NOAEC of 20 ppm.
** The NOAEC for decreased bw gain was 5 ppm.

F020 1356

EOR

F002 9

F010 5.4

F004 2

F005 TS

F006 Supplied by Shell Chemical Company, purity 98.5%; impurities

** diallyl alcohol, water.
F007 Supplied by Shell Chemical Company, purity 98.5%; impurities
** diallyl alcohol, water.
F020 1357
EOR
F002 9
F010 5.4
F004 3
F005 CL
F006 Under the conditions of this study, a sub-chronic oral NOEL
** of 100 ppm allyl alcohol in drinking water (equivalent to
** 11.6-13.2 mg/kg bw/d) was obtained for the rat, based upon
** treatment related increases in relative kidney and liver
** weigh
F007 Under the conditions of this study, a sub-chronic oral NOEL
** of 100 ppm allyl alcohol in drinking water (equivalent to
** 11.6-13.2 mg/kg bw/d) was obtained for the rat, based upon
** treatment related increases in relative kidney and liver
** weights at higher exposures.
F020 1358
EOR
F002 9
F010 5.4
F004 3
F005 ME
F006 ANIMALS AND TREATMENTS
** Groups of male and female Long-Evans rats (10/sex/treatment
** level) were exposed to allyl alcohol in drinking water in
** two separate studies using the following exposure
** concentrations: 0, 1, 5, 50, 100 or 250 ppm; 0, 5
F007 ANIMALS AND TREATMENTS
** Groups of male and female Long-Evans rats (10/sex/treatment
** level) were exposed to allyl alcohol in drinking water in
** two separate studies using the following exposure
** concentrations: 0, 1, 5, 50, 100 or 250 ppm; 0, 500 or 1000
** ppm. Treatment was continuous and lasted for 13 wk.
**
** Stock solutions were prepared weekly in brown glass bottles
** with plastic stoppers.
**
** Clinical observations: daily
** Body weight: weekly
** Water consumption: weekly
** Diet: no details
**
** NECROPSY AND HISTOPATHOLOGY
** At the end of the experimental period, survivors were
** weighed, decapitated under ether anesthesia and subject to a
** post-mortem examination. Livers and kidneys from all animals
** were weighed and preserved (10% formalin). Samples of
** duodenum, thyroid, heart, thymus, pancreas, spleen, adrenal
** gland, testis, ovary, bladder and brain collected from
** alternate animals (i.e. 5/10 per treatment level). All
** preserved tissues were subject to microscopic evaluation.
**
** STATISTICAL METHODS
** Relative organ weights and percentage body weight gains were

** analyzed using Student's T-test.

F020 1359

EOR

F002 9

F010 5.4

F004 3

F005 RE

F006 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F007 Dunlap, MK, Kodama, JK, Wellington, JS, Anderson, HH and
** Hine, CH (1958) The toxicity of allyl alcohol. AMA Archives
** of Industrial Health 18, 303-311.

F020 1360

EOR

F002 9

F010 5.4

F004 3

F005 RL

F006 Study available for review. Pre-guideline, non-GLP study.
** Limitations in design and reporting but supports overall
** hazard assessment.

F007 Study available for review. Pre-guideline, non-GLP study.
** Limitations in design and reporting but supports overall
** hazard assessment.

F020 1361

EOR

F002 9

F010 5.4

F004 3

F005 RS

F006 WATER CONSUMPTION AND INTAKE OF TEST SUBSTANCE

** Water consumption decreased in a treatment-related manner in
** both sexes:

	--ml/rat/day--	
	males	females
** 0 ppm	145	177
** 1 ppm	131	170
** 5 ppm	124	

F007 WATER CONSUMPTION AND INTAKE OF TEST SUBSTANCE

** Water consumption decreased in a treatment-related manner in
** both sexes:

	--ml/rat/day--	
	males	females
** 0 ppm	145	177
** 1 ppm	131	170
** 5 ppm	124	188
** 50 ppm	118	147
** 100 ppm	116	133
** 250 ppm	102	135
**		
** 0 ppm	151	172
** 500 ppm	82	87
** 1000 ppm	72	67
**		

** Calculated intake of allyl alcohol was as follows:

** --mg/kg bw/d--

	males	females
0 ppm		
1 ppm	0.13	0.17
5 ppm	0.62	0.94
50 ppm	5.9	7.3
100 ppm	11.6	13.2
250 ppm	25.5	34.0

0 ppm		
500 ppm	41.0	43.7
1000 ppm	72.0	67.4

CLINICAL SIGNS

Occasional crusting or swelling of the eyelids was the only clinical sign observed (no detail of any dose/severity relationship).

Two males from the 250 ppm treatment group lost weight; one was sacrificed after 5 wk, the other died during week 10. Pulmonary edema was observed in one animal at post-mortem with necrosis of the intestinal mucosa in the other; liver and kidney were normal.

NECROPSY OBSERVATIONS

Few abnormalities were noted at necropsy at week 13:

- perirenal fat was decreased in the 500 ppm group and absent at 1000 ppm
- the livers from two high dose females were pale with a soft, spongy yellowish appearance with well organized areas of necrosis with regeneration observed upon microscopic examination (appearance and distribution considered consistent with infarction by the study authors)
- perivascular cuffing present in brain from one high dose female
- the authors state there were no other findings of interest

BODY WEIGHT

Mean percentage body weight gain was statistically significantly lower in animals exposed to 500 ppm allyl alcohol in drinking water and above:

	males	females
0 ppm	76	51
1 ppm	79	56
5 ppm	98	51
50 ppm	108	60
100 ppm	92	47
250 ppm	106	42
0 ppm	229	139
500 ppm	99*	70*
1000 ppm	51*	43*

* = P<0.05

RELATIVE ORGAN WEIGHTS

Relative kidney weight (g/100 g bw) was increased in a dose related manner following 13 wk treatment with allyl alcohol in drinking water:

	males	females
0 ppm	0.817	0.776
1 ppm	0.792	0.759
5 ppm	0.816	0.766
50 ppm	0.842	0.767
100 ppm	0.829	0.794
250 ppm	0.826*	0.882*

0 ppm	0.610	0.612
500 ppm	0.760*	0.778*
1000 ppm	0.815*	0.834*

* = P<0.05

Relative liver weight (g/100 g bw) was increased 11-22% in males given allyl alcohol in drinking water at 250 ppm or above for 13 wk; less consistent increases present in females:

	males	females
0 ppm	3.02	3.59
1 ppm	2.91	3.60
5 ppm	3.01	3.62
50 ppm	3.03	3.72
100 ppm	3.32+	3.30
250 ppm	3.35*	3.46

0 ppm	3.03	3.26
500 ppm	3.50	3.66
1000 ppm	3.69*	3.41

* = P<0.05

(+ Note: value reported as 0.332; presumed type-setting error)

DERIVATION OF NOAEL

Although only limited data are available from this study, statistically significant increases in relative kidney weight in rats of both sexes given 250 ppm or above allyl alcohol in drinking water, with a concurrent decrease in body weight gain (significant at 500 ppm and 1000 ppm), appears indicative of toxicity. Relative liver weights were also increased in male rats given 250 ppm and above, although this change was not always statistically significant. These observations point to a NOAEL of 100 ppm (equivalent to 11.6-13.2 mg/kg bw/d in males and females, respectively).

F020 1362

EOR

F002 9

F010 5.4

F004 3

F005 TS

F006 Supplied by Shell Chemical Company, purity 98.5%; impurities diallyl alcohol, water.

F007 Supplied by Shell Chemical Company, purity 98.5%; impurities diallyl alcohol, water.

F020 1363

EOR

F002 9

F010 5.4
F004 5
F005 RE
F006 NTP unpublished results (ntp-server.niehs.nih.gov/)
F007 NTP unpublished results (ntp-server.niehs.nih.gov/)
F020 1364
EOR
F002 9
F010 5.4
F004 5
F005 RM
F006 Information available from the NTP website indicated that
** the sub-chronic toxicity of allyl alcohol has been
** investigated in F-344 rats following gavage administration
** (NTP study No. C93009). No published report is currently
** available. This
F007 Information available from the NTP website indicated that
** the sub-chronic toxicity of allyl alcohol has been
** investigated in F-344 rats following gavage administration
** (NTP study No. C93009). No published report is currently
** available. This information is included in this set of
** Robust Summaries for completeness.
F020 1365
EOR
F002 9
F010 5.4
F004 6
F005 RE
F006 NTP unpublished results (ntp-server.niehs.nih.gov/)
F007 NTP unpublished results (ntp-server.niehs.nih.gov/)
F020 1366
EOR
F002 9
F010 5.4
F004 6
F005 RM
F006 Information available from the NTP website indicated that
** the sub-chronic toxicity of allyl alcohol has been
** investigated in B6C3F1 mice following gavage administration
** (NTP study No. C93009). No published report is currently
** available. Thi
F007 Information available from the NTP website indicated that
** the sub-chronic toxicity of allyl alcohol has been
** investigated in B6C3F1 mice following gavage administration
** (NTP study No. C93009). No published report is currently
** available. This information is included in this set of
** Robust Summaries for completeness.
F020 1367
EOR
F002 9
F010 5.4
F004 7
F005 RE
F006 McCord, CP (1932) The toxicity of allyl alcohol J Am Med
** Assoc 98, 2269-2270.
F007 McCord, CP (1932) The toxicity of allyl alcohol J Am Med
** Assoc 98, 2269-2270.

F020 1368

EOR

F002 9

F010 5.4

F004 7

F005 RL

F006 Study available for review. Early investigation, briefly
** reported methods and findings, supports hazard
** characterization.

F007 Study available for review. Early investigation, briefly
** reported methods and findings, supports hazard
** characterization.

F020 1369

EOR

F002 9

F010 5.4

F004 7

F005 RM

F006 Three groups of white rats (sex, strain not specified) were
** exposed to 50 ppm (n=5), 200 ppm (n=4) or 1000 ppm (n=6)
** allyl alcohol vapor for 7 hr/d until death.

**

** All animals from the 1000 ppm exposure group died within 3
** hr of the start of

F007 Three groups of white rats (sex, strain not specified) were
** exposed to 50 ppm (n=5), 200 ppm (n=4) or 1000 ppm (n=6)
** allyl alcohol vapor for 7 hr/d until death.

**

** All animals from the 1000 ppm exposure group died within 3
** hr of the start of the first exposure, with signs of
** discomfort and labored breathing with discharge from the
** nose and mouth. Gross necropsy revealed hemorrhage of the
** lungs and, to a lesser extent, the intestinal tract, kidneys
** and bladder.

**

** All animals exposed to 200 ppm allyl alcohol died following
** one or two exposures with similar clinical symptoms to those
** described above.

**

** Rats exposed to 50 ppm allyl alcohol vapor survived an
** average of 30 d (no further details).

F020 1370

EOR

F002 9

F010 5.4

F004 7

F005 TS

F006 Described as allyl alcohol; no further information
** available.

F007 Described as allyl alcohol; no further information
** available.

F020 1371

EOR

F002 9

F010 5.5

F004 1

F005 CL

F006 Under the conditions of the assay, allyl alcohol was
** reported to be mutagenic in V79 cells in the absence of
** exogenous metabolic activation.
F007 Under the conditions of the assay, allyl alcohol was
** reported to be mutagenic in V79 cells in the absence of
** exogenous metabolic activation.
F020 1372
EOR
F002 9
F010 5.5
F004 1
F005 ME
F006 Growing cultures of V79 cells in complete Williams medium E
** (WE; containing 10% fetal bovine serum) were exposed to
** allyl alcohol (1 uM, 2 uM) for 2 hr, transferred to fresh
** medium for 24 hr, harvested and then reseeded (10^6 cells)
** into fr
F007 Growing cultures of V79 cells in complete Williams medium E
** (WE; containing 10% fetal bovine serum) were exposed to
** allyl alcohol (1 uM, 2 uM) for 2 hr, transferred to fresh
** medium for 24 hr, harvested and then reseeded (10^6 cells)
** into fresh medium for 10 d, with one subdivision.
**
** These cells were harvested and divided for assessment of
** absolute plating efficiency (after 7 d growth in complete
** WE) and for mutation frequency (3.17×10^5 cells plated in
** presence of 3 uM 6-thioguanine; 10 d incubation period with
** one change of medium).
**
** Incubations were performed at 37 degrees C in 95% air:5%
** carbon dioxide and 80% relative humidity.
**
** No exogenous metabolic activation was included.
**
** No statistical analysis was applied to the data.
**
** Comment: The methods indicate that the concentration of
** fetal bovine serum present in the WE medium varied between
** 0-10% during exposure to allyl alcohol. The intention was to
** investigate the possible protective role of thiol groups on
** any mutagenic response observed.
F020 1373
EOR
F002 9
F010 5.5
F004 1
F005 RE
F006 Smith, RA, Cohen, SM and Lawson, TA (1990) Acrolein
** mutagenicity in the V79 assay - short communication.
** Carcinogenesis 11, 497-498.
F007 Smith, RA, Cohen, SM and Lawson, TA (1990) Acrolein
** mutagenicity in the V79 assay - short communication.
** Carcinogenesis 11, 497-498.
F020 1374
EOR
F002 9
F010 5.5

F004 1
F005 RL
F006 Study available for review. Briefly reported methods and
** findings, insufficient for full assessment, reliability
** cannot be assessed.
F007 Study available for review. Briefly reported methods and
** findings, insufficient for full assessment, reliability
** cannot be assessed.
F020 1375
EOR
F002 9
F010 5.5
F004 1
F005 RS
F006 A mutation frequency of 14+/-8 mutants/10⁶ survivors was
** reported after exposure to 1 uM allyl alcohol (58 ng/ml),
** and 37+/-12 after exposure to 2 uM (116 ng/ml; results are
** mean and SD of 8 plates from a single experiment).
**
** No concurrent
F007 A mutation frequency of 14+/-8 mutants/10⁶ survivors was
** reported after exposure to 1 uM allyl alcohol (58 ng/ml),
** and 37+/-12 after exposure to 2 uM (116 ng/ml; results are
** mean and SD of 8 plates from a single experiment).
**
** No concurrent control data are reported.
**
** The thiol status of the above incubations is not reported.
** Other studies described in this paper indicate that the
** magnitude of any mutagenic response was greatly diminished
** by inclusion of 10% fetal bovine serum in the assay. It is
** therefore assumed that no fetal bovine serum was present.
**
** The authors conclude that allyl alcohol was mutagenic in v79
** cells in vitro.
F020 1376
EOR
F002 9
F010 5.5
F004 1
F005 TS
F006 Allyl alcohol, Aldrich Chemical Co., Milwaukee, WI (no
** further details).
F007 Allyl alcohol, Aldrich Chemical Co., Milwaukee, WI (no
** further details).
F020 1377
EOR
F002 9
F010 5.5
F004 2
F005 CL
F006 Under the conditions of the test, allyl alcohol (highest
** non-toxic concentration) was not mutagenic in a spot test (5
** stains of Salmonella typhimurium including TA100 and TA1535)
** or a plate incorporation assay (3 tester strains).
F007 Under the conditions of the test, allyl alcohol (highest
** non-toxic concentration) was not mutagenic in a spot test (5

** stains of Salmonella typhimurium including TA100 and TA1535)
** or a plate incorporation assay (3 tester strains).
F020 1378
EOR
F002 9
F010 5.5
F004 2
F005 ME
F006 SPOT TEST
** The ability of allyl alcohol (0.05 ul) to induce reversion
** in Salmonella typhimurium tester strains TA1535, TA1537,
** TA1538, TA98, TA100 was investigated using a spot test in
** the absence or presence of S9 (SD rat, Arochlor 1254
** ind
F007 SPOT TEST
** The ability of allyl alcohol (0.05 ul) to induce reversion
** in Salmonella typhimurium tester strains TA1535, TA1537,
** TA1538, TA98, TA100 was investigated using a spot test in
** the absence or presence of S9 (SD rat, Arochlor 1254
** induction). The authors state that the system used was
** suitable for testing volatile substances. Ethyl
** methansulfonate (5 ul/plate; TA1535), 9-aminoacridine (10
** ug/plate; TA1537), 4-nitro-o-phenyldiamine (10 ug/plate;
** TA1538 and TA98), methyl methansulfonate (1 ul/plate; TA100)
** were used as positive control substances in the absence of
** S9. 2-aminoanthracene (1 ug/plate) was used as positive
** control substance for all tester strains in the presence of
** S9.
**
** PLATE INCORPORATION ASSAY
** Mutagenic activity was also investigated in TA1535, TA100
** and TA98 using a plate incorporation assay and 0.025,
** 0.05, 0.1 ul allyl alcohol/plate in the absence or presence
** of S9.
**
** Comment: Concentrations in excess of 0.05 ul (= 50 nl; spot
** test) or 0.10 ul (= 100 nl; plate incorporation assay) were
** cytotoxic (no data presented).
F020 1379
EOR
F002 9
F010 5.5
F004 2
F005 RE
F006 Principe, P, Dogliotti, E, Bignami, M, Crebelli, R, Falcone,
** E, Fabrizi, M, Conti, G and Comba, P (1981) Mutagenicity of
** chemicals of industrial and agricultural relevance in
** Salmonella, Streptomyces and Aspergillus. J Sci Fd Agric 32,
** 826
F007 Principe, P, Dogliotti, E, Bignami, M, Crebelli, R, Falcone,
** E, Fabrizi, M, Conti, G and Comba, P (1981) Mutagenicity of
** chemicals of industrial and agricultural relevance in
** Salmonella, Streptomyces and Aspergillus. J Sci Fd Agric 32,
** 826-832.
F020 1380
EOR
F002 9

F010 5.5
F004 2
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1381
EOR
F002 9
F010 5.5
F004 2
F005 RS
F006 SPOT TEST
** The number of his+ revertants per plate was highly
** comparable in control and test cultures for all 5 tester
** strains both in the absence or presence of S9. A
** satisfactory response was obtained with the positive control
** substances.
F007 SPOT TEST
** The number of his+ revertants per plate was highly
** comparable in control and test cultures for all 5 tester
** strains both in the absence or presence of S9. A
** satisfactory response was obtained with the positive control
** substances.
**
** PLATE INCORPORATION ASSAY
** There was no increase in revertants in any of the 3 tester
** strains in the absence or presence of S9.
F020 1382
EOR
F002 9
F010 5.5
F004 2
F005 TS
F006 Allyl alcohol, analytical grade, Fluka AG (no further
** details).
F007 Allyl alcohol, analytical grade, Fluka AG (no further
** details).
F020 1383
EOR
F002 9
F010 5.5
F004 3
F005 CL
F006 Under the conditions of the test, allyl alcohol (100 ul) did
** not induce forward mutations in Streptomyces coelicolor in a
** spot test or a plate incorporation assay.
F007 Under the conditions of the test, allyl alcohol (100 ul) did
** not induce forward mutations in Streptomyces coelicolor in a
** spot test or a plate incorporation assay.
F020 1384
EOR
F002 9
F010 5.5

F004 3

F005 ME

F006 Forward mutation of *S. coelicolor* to streptomycin resistance
** was investigated in a spot test (100 ul/test) or a plate
** incorporation assay (2-100 ul/plate).
**

** The test medium was supplemented with 1.5 ug/ml streptomycin
** and approx. 2×10^7 sp

F007 Forward mutation of *S. coelicolor* to streptomycin resistance
** was investigated in a spot test (100 ul/test) or a plate
** incorporation assay (2-100 ul/plate).
**

** The test medium was supplemented with 1.5 ug/ml streptomycin
** and approx. 2×10^7 spores (method: Carere et al. (1978) Chem
** Biol Interact 22, 297-308; Carere et al. (1987) Mut Res 57,
** 277; no further details.)
**

** Ethyl methansulfonate (2 ul/plate) was used a positive
** control substance.

F020 1385

EOR

F002 9

F010 5.5

F004 3

F005 RE

F006 Principe, P, Dogliotti, E, Bignami, M, Crebelli, R, Falcone,
** E, Fabrizi, M, Conti, G and Comba, P (1981) Mutagenicity of
** chemicals of industrial and agricultural relevance in
** Salmonella, Streptomyces and Aspergillus. J Sci Fd Agric 32,
** 826

F007 Principe, P, Dogliotti, E, Bignami, M, Crebelli, R, Falcone,
** E, Fabrizi, M, Conti, G and Comba, P (1981) Mutagenicity of
** chemicals of industrial and agricultural relevance in
** Salmonella, Streptomyces and Aspergillus. J Sci Fd Agric 32,
** 826-832.

F020 1386

EOR

F002 9

F010 5.5

F004 3

F005 RL

F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.

F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.

F020 1387

EOR

F002 9

F010 5.5

F004 3

F005 RS

F006 Allyl alcohol was ineffective at inducing mutants in both
** the spot test and the plate incorporation test.
**

** An acceptable response was obtained with the positive

** control substance.
F007 Allyl alcohol was ineffective at inducing mutants in both
** the spot test and the plate incorporation test.
**
** An acceptable response was obtained with the positive
** control substance.
F020 1388
EOR
F002 9
F010 5.5
F004 3
F005 TS
F006 Allyl alcohol, analytical grade, Fluka AG (no further
** details).
F007 Allyl alcohol, analytical grade, Fluka AG (no further
** details).
F020 1389
EOR
F002 9
F010 5.5
F004 4
F005 CL
F006 Under the conditions of the test, allyl alcohol (100 ul) did
** not induce point mutations in *Aspergillus nidulans* in a spot
** test (20 ul allyl alcohol/test) or a plate incorporation
** assay (up to 40 ul/plate).
F007 Under the conditions of the test, allyl alcohol (100 ul) did
** not induce point mutations in *Aspergillus nidulans* in a spot
** test (20 ul allyl alcohol/test) or a plate incorporation
** assay (up to 40 ul/plate).
F020 1390
EOR
F002 9
F010 5.5
F004 4
F005 ME
F006 The induction of point mutations in *Aspergillus nidulans*
** (haploid strain 35), as detected by resistance to
** 8-azaguanine, was investigated using a spot test (20 ul
** allyl alcohol/test) or a plate incorporation assay (10, 20
** or 40 ul allyl alc
F007 The induction of point mutations in *Aspergillus nidulans*
** (haploid strain 35), as detected by resistance to
** 8-azaguanine, was investigated using a spot test (20 ul
** allyl alcohol/test) or a plate incorporation assay (10, 20
** or 40 ul allyl alcohol/plate). (Method: Bignami et al.
** (1980) Chem Biol Interact 30, 9; no further details.)
**
** Methyl methansulfonate (1 ul/plate) was used a positive
** control substance.
F020 1391
EOR
F002 9
F010 5.5
F004 4
F005 RE
F006 Principe, P, Dogliotti, E, Bignami, M, Crebelli, R, Falcone,

** E, Fabrizi, M, Conti, G and Comba, P (1981) Mutagenicity of
** chemicals of industrial and agricultural relevance in
** Salmonella, Streptomyces and Aspergillus. J Sci Fd Agric 32,
** 826

F007 Principe, P, Dogliotti, E, Bignami, M, Crebelli, R, Falcone,
** E, Fabrizi, M, Conti, G and Comba, P (1981) Mutagenicity of
** chemicals of industrial and agricultural relevance in
** Salmonella, Streptomyces and Aspergillus. J Sci Fd Agric 32,
** 826-832.

F020 1392
EOR
F002 9
F010 5.5
F004 4
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.

F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.

F020 1393
EOR
F002 9
F010 5.5
F004 4
F005 RS
F006 Allyl alcohol was ineffective at inducing mutations in both
** the spot test and the plate incorporation test.
**
** An acceptable response was obtained with the positive
** control substance.

F007 Allyl alcohol was ineffective at inducing mutations in both
** the spot test and the plate incorporation test.
**
** An acceptable response was obtained with the positive
** control substance.

F020 1394
EOR
F002 9
F010 5.5
F004 4
F005 TS
F006 Allyl alcohol, analytical grade, Fluka AG (no further
** details).

F007 Allyl alcohol, analytical grade, Fluka AG (no further
** details).

F020 1395
EOR
F002 9
F010 5.5
F004 5
F005 CL
F006 Under the conditions of the test, a positive response was
** obtained with TA1535 in a liquid preincubation assay
** (negative with plate incorporation) in the presence of
** hamster S9 (negative in the presence of rat S9, negative in

** absence of S9)
F007 Under the conditions of the test, a positive response was
** obtained with TA1535 in a liquid preincubation assay
** (negative with plate incorporation) in the presence of
** hamster S9 (negative in the presence of rat S9, negative in
** absence of S9). No mutagenic response was seen with TA1537,
** TA1538, TA98 or TA100.
F020 1396
EOR
F002 9
F010 5.5
F004 5
F005 ME
F006 Tester strains TA1535, TA1537, TA1538, TA98 and TA100 were
** used with or without S9 from Arochlor 1254 treated rats or
** hamsters. [Comment: Hamster S9 was used whenever the test
** compound was not mutagenic with rat S9.]
**
** Testing was conducted
F007 Tester strains TA1535, TA1537, TA1538, TA98 and TA100 were
** used with or without S9 from Arochlor 1254 treated rats or
** hamsters. [Comment: Hamster S9 was used whenever the test
** compound was not mutagenic with rat S9.]
**
** Testing was conducted using plate incorporation or liquid
** pre-incubation (45 min at 37 degrees C) methodology, with
** independent repeat.
**
** Sodium azide, 9-aminoacridine, 2-nitrofluorene and
** 2-aminoanthracene were used as positive controls (all tester
** strains, with or without rat and hamster S9).
**
** A compound was considered mutagenic if the number of
** revertants was twice the background, and a dose-response
** curve was demonstrable.
F020 1397
EOR
F002 9
F010 5.5
F004 5
F005 RE
F006 Lijinsky, W and Andrews, AW (1980) Mutagenicity of vinyl
** compounds in Salmonella typhimurium Terat Carc Mutagen 1,
** 259-267.
F007 Lijinsky, W and Andrews, AW (1980) Mutagenicity of vinyl
** compounds in Salmonella typhimurium Terat Carc Mutagen 1,
** 259-267.
F020 1398
EOR
F002 9
F010 5.5
F004 5
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP

** experimental study. Reasonably well reported methods and
 ** results, suitable for assessment.

F020 1399
 EOR
 F002 9
 F010 5.5
 F004 5
 F005 RS
 F006 Allyl alcohol was mutagenic only in TA1535 in the liquid
 ** pre-incubation test, with distilled water as solvent in the
 ** presence of hamster S9.
 **
 ** Representative results from one repeat (other not reported):
 ** Revertants/plate
 ** Dose
 F007 Allyl alcohol was mutagenic only in TA1535 in the liquid
 ** pre-incubation test, with distilled water as solvent in the
 ** presence of hamster S9.
 **
 ** Representative results from one repeat (other not reported):
 ** Revertants/plate

Dose (ug)	-S9	+S9
0 (water)	16	22
10	14	38
25	21	37
50	15	55+
75	10	62+
100	17	62+
125	15	64+
175	5	81+
200	10	71+
300	10	55+
500	T	21

**
 ** + value at least twice control mean
 ** T toxic
 **
 ** Cytotoxicity was apparent at 500 ug in the plate
 ** incorporation test but not at this concentration in the
 ** liquid preincubation test.
 **
 ** A satisfactory response was obtained with the positive
 ** control substances.

F020 1400
 EOR
 F002 9
 F010 5.5
 F004 5
 F005 TS
 F006 Allyl alcohol, >95%, Aldrich Chemical Company (no further
 ** details).
 F007 Allyl alcohol, >95%, Aldrich Chemical Company (no further
 ** details).
 F020 1401
 EOR
 F002 9
 F010 5.5

F004 6
F005 CL
F006 Under the conditions of the test, a positive response was
** obtained with TA100 in a liquid preincubation assay in
** absence of rat S9 (negative in the presence of S9).
F007 Under the conditions of the test, a positive response was
** obtained with TA100 in a liquid preincubation assay in
** absence of rat S9 (negative in the presence of S9).
F020 1402
EOR
F002 9
F010 5.5
F004 6
F005 ME
F006 Tester strain TA100 was used in a liquid pre-incubation
** assay (tightly closed screw-capped vials, 37 degrees C,
** shaking, 90 min) in the absence and presence of S9 (source
** not specified). An aliquot from each incubation was diluted
** and plate
F007 Tester strain TA100 was used in a liquid pre-incubation
** assay (tightly closed screw-capped vials, 37 degrees C,
** shaking, 90 min) in the absence and presence of S9 (source
** not specified). An aliquot from each incubation was diluted
** and plated onto histidine-containing medium. Mutation
** frequencies were determined as the number of revertants per
** umol allyl alcohol. The assay was conducted with an
** independent repeat.
**
** The concentration range used is not stated. Graphical data
** indicate that 5 concentrations up to 0.15 umol per 2 ml
** liquid incubation were employed. Based upon a molecular
** weight of 58.08, this equates to approx. 9 ug.
**
** Sodium azide was used as positive control in the absence of
** S9, and 2-aminoacridine in the presence of S9.
F020 1403
EOR
F002 9
F010 5.5
F004 6
F005 RE
F006 Lutz, D, Eder, E, Neudecker, T and Henschler, D. (1982)
** Structure-activity relationships in a,B-unsaturated
** carbonylic compounds and thier corresponding allylic
** alcohols. Mut res 93, 305-315.
F007 Lutz, D, Eder, E, Neudecker, T and Henschler, D. (1982)
** Structure-activity relationships in a,B-unsaturated
** carbonylic compounds and thier corresponding allylic
** alcohols. Mut res 93, 305-315.
F020 1404
EOR
F002 9
F010 5.5
F004 6
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and

** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1405
EOR
F002 9
F010 5.5
F004 6
F005 RM
F006 The authors note that <1 ppm acrolein was present in sample
** of allyl alcohol used in these studies. Concurrent data on
** acrolein, also included in this publication, lead them to
** conclude that acrolein (at this concentration) would not
** have c
F007 The authors note that <1 ppm acrolein was present in sample
** of allyl alcohol used in these studies. Concurrent data on
** acrolein, also included in this publication, lead them to
** conclude that acrolein (at this concentration) would not
** have contributed to the mutagenic response observed.
**
** The authors suggest that conversion of allyl alcohol to
** acrolein by bacterial alcohol dehydrogenase(s) may account
** for the strong positive response obtained.
F020 1406
EOR
F002 9
F010 5.5
F004 6
F005 RS
F006 Graphical data demonstrate a clear inverse correlation
** between survival and induction of revertants in TA100 in the
** absence of S9.
**
** In the absence of S9, there was a linear increase in the
** number of revertants per plate over a concentratio
F007 Graphical data demonstrate a clear inverse correlation
** between survival and induction of revertants in TA100 in the
** absence of S9.
**
** In the absence of S9, there was a linear increase in the
** number of revertants per plate over a concentration range of
** approx. 0.04-0.15 umol/2 ml (equivalent to approx. 2-9 ug).
**
** Survival was also decreased in the presence of S9 (weak
** mutagenic response), however this effect was considerably
** less pronounced than was seen in the presence of S9.
**
** A mutation frequency of 750 revertants/umol (approx. 13
** revertants/ug) was obtained in the absence of S9, and 145
** revertants/umol (approx. 2 revertants/ug) in its presence.
F020 1407
EOR
F002 9
F010 5.5
F004 6
F005 TS

F006 Allyl alcohol, 99.9% pure by GC analysis, Merck, Darmstadt,
** Germany
F007 Allyl alcohol, 99.9% pure by GC analysis, Merck, Darmstadt,
** Germany
F020 1408
EOR
F002 9
F010 5.5
F004 7
F005 CL
F006 Under the conditions of the test, no mutagenic activity was
** detected in 4 strains of Salmonella typhimurium (including
** TA100 and TA1535) in the absence or presence of rat or
** hamster S9.
F007 Under the conditions of the test, no mutagenic activity was
** detected in 4 strains of Salmonella typhimurium (including
** TA100 and TA1535) in the absence or presence of rat or
** hamster S9.
F020 1409
EOR
F002 9
F010 5.5
F004 7
F005 RE
F006 NTP unpublished results (ntp-server.niehs.nih.gov/)
F007 NTP unpublished results (ntp-server.niehs.nih.gov/)
F020 1410
EOR
F002 9
F010 5.5
F004 7
F005 RL
F006 GLP compliant, NTP guideline study but only limited
** information available for review, hence Reliability 2.
F007 GLP compliant, NTP guideline study but only limited
** information available for review, hence Reliability 2.
F020 1411
EOR
F002 9
F010 5.5
F004 7
F005 RM
F006 Only limited information is available for this study which
** was conducted in the absence or presence of 10% or 30% rat
** or hamster S9 using a preincubation protocol.
**
** It was run with an independent repeat.
**
** DMSO was the vehicle control with
F007 Only limited information is available for this study which
** was conducted in the absence or presence of 10% or 30% rat
** or hamster S9 using a preincubation protocol.
**
** It was run with an independent repeat.
**
** DMSO was the vehicle control with (currently unspecified)
** positive controls for each strain.

F020 1412
EOR
F002 9
F010 5.5
F004 7
F005 TS
F006 Described as allyl alcohol; no further information
** available.
F007 Described as allyl alcohol; no further information
** available.
F020 1413
EOR
F002 9
F010 5.5
F004 8
F005 CL
F006 Under the conditions of the assay, allyl alcohol gave a negative, i.e.
* non-mutagenic, response in *S. typhimurium* strains TA1535, TA1537, TA98
* and TA100 and *E. coli* strain WP2 uvrA (pKM101) in both the presence and
* absence of S9 mix.
F007 Under the conditions of the assay, allyl alcohol gave a negative, i.e.
* non-mutagenic, response in *S. typhimurium* strains TA1535, TA1537, TA98
* and TA100 and *E. coli* strain WP2 uvrA (pKM101) in both the presence and
* absence of S9 mix.
F020 1478
EOR
F002 9
F010 5.5
F004 8
F005 ME
F006 Tester strains TA1535, TA1537, TA98 and TA100 were
** used with or without S9 prepared from
* phenobarbital/ β -naphthoflavone-induced Sprague-Dawley treated rats
**
** Testing was conducted using the standard plate methodology, with
* independent repea
F007 Tester strains TA1535, TA1537, TA98 and TA100 were
** used with or without S9 prepared from
* phenobarbital/ β -naphthoflavone-induced Sprague-Dawley treated rats
**
** Testing was conducted using the standard plate methodology, with
* independent repeat.
**
** Sodium azide (NaZ), Acridine Mutagen ICR 191 (ICR), Daunomycin HCL (DR),
* N-Ethyl-N'-nitro-N-Nitrosoguanidine (ENNG) were used as positive controls
* for tester strains TA100 and TA1535, TA1537, TA98, and WP2 uvrA(pKM101),
* respectively, without rat S9).
**
** 2-aminoanthracene (2AA) and Benzo[a]pyrene (BP) were used as positive
* controls for all *Salmonella* tester strains and WP2 uvrA(pKM101),
* respectively, with rat S9).
**
** DMSO was used as the vehicle control for all tests.
**
** A compound was considered mutagenic when one or both of the following
* criteria were met:
** a) a significant, dose-related increase in the mean number of revertants

* was observed;
** b) a two-fold or greater increase in the mean number of revertant
* colonies (over that observed for the concurrent solvent control plates)
* was observed at one or more concentrations.

F020 1475

EOR

F002 9

F010 5.5

F004 8

F005 RE

F006 Callander, R.D. (2004). Allyl alcohol: Bacterial mutagenicity assay in
* S. typhimurium and E. coli. CTL Study Number YV6638. Central Toxicology
* Laboratory, Cheshire, UK. Sponsored by Hercules Incorporated, Wilmington,
* DE.

F007 Callander, R.D. (2004). Allyl alcohol: Bacterial mutagenicity assay in
* S. typhimurium and E. coli. CTL Study Number YV6638. Central Toxicology
* Laboratory, Cheshire, UK. Sponsored by Hercules Incorporated, Wilmington,
* DE.

F020 1480

EOR

F002 9

F010 5.5

F004 8

F005 RL

F006 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F007 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F020 1479

EOR

F002 9

F010 5.5

F004 8

F005 RS

F006 In at least two separate assays with each tester strain, allyl alcohol
* did not induce any significant, reproducible increases in the observed
* number of revertant colonies, either in the presence or absence of S9
* mix. The positive controls

F007 In at least two separate assays with each tester strain, allyl alcohol
* did not induce any significant, reproducible increases in the observed
* number of revertant colonies, either in the presence or absence of S9
* mix. The positive controls for each experiment induced the expected
* responses indicating the strains were responding satisfactorily in each
* case.

**

** Representative results from one repeat assay (other not reported):

**

**

*

** Strain / Compound / Dose (ug) / Mean Revertants per plate

** +S9 -S9

** TA100:

** AA	200	0.3	1.7
**	100	63.3	83.3
**	50	132.7	76.3
**	20	156.3	98.3
**	10	124.7	86.3

```

**          5          139.3 105.3
**      DMSO          142.6 115.4
**      2AA      1          2136
**      NaZ      2          1004.0
**
**      Strain / Compound / Dose (ug) / Mean Revertants per plate
**                      +S9  -S9
**      TA1535:
**      AA      200          0.0  0.0
**              100          1.3  0.0
**              50          8.7  4.3
**              20          9.7  3.0
**              10          10.3  9.3
**              5          8.7  8.0
**      DMSO          14.0 13.7
**      2AA      2          287.3
**      NaZ      2          707.3
**
**      Strain / Compound / Dose (ug) / Mean Revertants per plate
**                      +S9  -S9
**      TA1537:
**      AA      200          0.0  8.0
**              100          1.3 16.0
**              50          9.3 13.7
**              20          12.3 15.0
**              10          21.3 15.7
**              5          21.7 10.7
**      DMSO          19.4 14.0
**      2AA      2          318.3
**      ICR      2          382.7
**
**      Strain / Compound / Dose (ug) / Mean Revertants per plate
**                      +S9  -S9
**      TA98:
**      AA      200          0.0  0.0
**              100          1.7 15.0
**              50          7.3 20.0
**              20          17.7 23.3
**              10          28.0 19.7
**              5          36.0 32.3
**      DMSO          34.5 29.0
**      2AA      1          2765.7
**      DR      1          997.3
**
**      Strain / Compound / Dose (ug) / Mean Revertants per plate
**                      +S9  -S9
**      WP2 uvrA (PKM101):
**      AA      2500          31.7 301.0
**              1000          223.0 262.7
**              500          331.7 294.3
**              200          413.3 217.3
**              100          410.0 235.7
**              50          388.0 212.3
**      DMSO          272.4 200.6
**      BP      5          725.7
**      ENNG    1          884.7
F020 1476

```

EOR

F002 9

F010 5.5

F004 8

F005 TS

F006 Allyl alcohol, 99.5%, Sigma-Aldrich

F007 Allyl alcohol, 99.5%, Sigma-Aldrich

F020 1477

EOR

F002 9

F010 5.5

F004 9

F005 CL

F006 Under the conditions of the assay, allyl alcohol was mutagenic in L5178Y

* TK +/- cells treated in vitro in the presence of S9-mix.

F007 Under the conditions of the assay, allyl alcohol was mutagenic in L5178Y

* TK +/- cells treated in vitro in the presence of S9-mix.

F020 1485

EOR

F002 9

F010 5.5

F004 9

F005 ME

F006 Mouse lymphoma L5178Y TK+/- 3.7.2.c cells were used with or without S9

* mix prepared from phenobarbital/ β -naphthoflavone-induced Sprague-Dawley

* treated rats.

**

** Benzo[a]pyrene (BP) and ethylmethanesulphonate (EMS) were used as

* positive contro

F007 Mouse lymphoma L5178Y TK+/- 3.7.2.c cells were used with or without S9

* mix prepared from phenobarbital/ β -naphthoflavone-induced Sprague-Dawley

* treated rats.

**

** Benzo[a]pyrene (BP) and ethylmethanesulphonate (EMS) were used as

* positive controls in tests with and without S9 mix, respectively.

**

** DMSO was used as the vehicle control for all tests.

**

** Two series of exponentially growing suspension cultures of L5178Y cells

* were treated in duplicate with the solvent control, positive controls, or

* a range of concentrations of allyl alcohol for 4 hours in the presence

* and absence of S9 mix. The cells were then cultured to allow any induced

* mutations to be expressed. During this expression time the growth rate

* was monitored and, where appropriate, the cells subcultured daily. At

* the end of the 48 hour expression time, samples were grown in both

* selective and non-selective medium, and the results obtained were used to

* determine the mutant frequency per viable cell.

**

** The effect of allyl alcohol on the pH and osmolality of the treatment

* medium was evaluated.

**

** Cell survival was measured by relative total growth. Relative total

* growth is a measure of growth of test cultures both during the two-day

* expression and cloning phases of the assay, relative to the vehicle

* control.

**

** Cell growth in individual microwell plates was assessed after 10-13 days

* using a dissecting microscope. The survival plates and viability plates
* were scored for the number of wells containing no cell growth (negative
* wells). The mutation plates were scored so that each well contained
* either a small colony (considered to be associated with clastogenic
* effects), a large colony (considered to be associated with gene mutation
* effects), or no colony.

**

** The data were evaluated by logit regression, using a complimentary
* log-log link function. The dependent variable was the number of empty
* wells. This procedure provided maximum likelihood estimates of log mutant
* frequencies. Variances were inflated by the between duplicate
* heterogeneity factor. Intergroup comparisons of log mutant frequency
* comparing each treated group with the solvent control were performed
* within each experiment. All tests were one-sided. Similar analyses were
* carried out separately for the positive controls.

**

** For a positive response, a statistically significant dose-related
* increase in mutant frequency was required, but not only at concentrations
* eliciting high levels of toxicity. An associated absolute increase in
* mutant number above the solvent control values was a further requirement.
* Such a response must be reproducible in an independent experiment for the
* test substance to be described as positive in the assay.

F020 1482

EOR

F002 9

F010 5.5

F004 9

F005 RE

F006 Clay, P. (2004). Allyl alcohol: L5178Y TK+/- mouse lymphoma mutation
* assay. CTL Study Number VV0306. Central Toxicology Laboratory,
* Cheshire, UK. Sponsored by Hercules Incorporated, Wilmington, DE.

F007 Clay, P. (2004). Allyl alcohol: L5178Y TK+/- mouse lymphoma mutation
* assay. CTL Study Number VV0306. Central Toxicology Laboratory,
* Cheshire, UK. Sponsored by Hercules Incorporated, Wilmington, DE.

F020 1487

EOR

F002 9

F010 5.5

F004 9

F005 RL

F006 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F007 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F020 1486

EOR

F002 9

F010 5.5

F004 9

F005 RS

F006 Survival Data

** The maximum concentration tested in the absence of S9 mix was 581 ug/mL.
* This concentration was approximately equivalent to 10mM and as such is
* the limit concentration for this assay. This concentration resulted in
* survival le

F007 Survival Data

** The maximum concentration tested in the absence of S9 mix was 581 ug/mL.

* This concentration was approximately equivalent to 10mM and as such is
 * the limit concentration for this assay. This concentration resulted in
 * survival levels relative to the solvent control of 103% and 113% in the
 * first and second experiments respectively. In the presence of S9 mix,
 * the maximum concentrations evaluated for mutant frequency were 20 ug/mL
 * and 30 ug/mL giving survival levels of 40% and 11% in the first and
 * second experiments respectively. Treatment of the culture medium with
 * concentrations of test substance used in the study had no significant
 * effect on osmolality or pH.

**

** Mutation Data

** No statistically or biologically significant increases in mutant
 * frequency compared to the solvent control cultures, were observed in
 * cultures treated with allyl alcohol at any concentration tested in the
 * absence of S9 mix. In the presence of S9 mix, dose-related increases in
 * mutant frequency were observed in both experiments. These increases
 * achieved statistical significance at the higher concentrations in both
 * experiments and were generally associated with increases in mutant
 * numbers. The positive controls induced appropriate increases in mutant
 * frequency in all mutation experiments, demonstrating the activity of the
 * S9 mix and that the assay was performing satisfactorily.

**

** Representative results from one repeat assay (Experiment 2):

**

** Without S9 Mix:

**

** Compound / Dose (ug/mL) / Mean % Day 0 Rel Survival / Mutant Frequency x
 * 10E-04

**

** AA	581	113
*	1.8	
**	400	74
*	1.7	
**	200	132
*	1.1	
**	100	134
*	1.2	
**	50	120
*	1.4	
** DMSO	10 (uL/mL)	100
*	1.3	
** EMS	500	51
*	12.0 **	

**

** With S9 Mix:

**

** Compound / Dose (ug/mL) / Mean % Day 0 Rel Survival / Mutant Frequency x
 * 10E-04

**

** AA	40	9
*	#	
**	30	11
*	6.9**	
**	25	26
*	3.7**	
**	20	25
*	3.2**	

**		15	43
*		2.0*	
**		10	66
*		1.2	
**		5	59
*		1.8*	
**	DMSO	10 (uL/mL)	92
*		1.3	
**			100
*		1.2	
**	BP	1	39
*		6.1*	

** # = not counted due to excessive toxicity

** * = P < 0.05

** ** = P < 0.01

F020 1483

EOR

F002 9

F010 5.5

F004 9

F005 TS

F006 Allyl alcohol, >99.9%, Sigma-Aldrich

F007 Allyl alcohol, >99.9%, Sigma-Aldrich

F020 1484

EOR

F002 9

F010 5.5

F004 10

F005 CL

F006 Under the conditions of the assay, allyl alcohol was clastogenic to
* cultured human lymphocytes treated in vitro in the presence and absence
* of S9 mix.

F007 Under the conditions of the assay, allyl alcohol was clastogenic to
* cultured human lymphocytes treated in vitro in the presence and absence
* of S9 mix.

F020 1491

EOR

F002 9

F010 5.5

F004 10

F005 ME

F006 Human lymphocytes were obtained from blood samples collected on the days
* of culture initiation from healthy non-smoking donors previously
* established to have a low incidence of chromosomal aberrations in their
* peripheral blood lymphocytes.

F007 Human lymphocytes were obtained from blood samples collected on the days
* of culture initiation from healthy non-smoking donors previously
* established to have a low incidence of chromosomal aberrations in their
* peripheral blood lymphocytes.

**

** Cyclophosphamide and Mitomycin C were used as positive controls in tests
* with and without S9 mix, respectively.

**

** DMSO was used as the solvent control for all tests

**

** Human peripheral blood lymphocytes were used with or without S9 mix

* prepared from phenobarbital/ β -naphthoflavone-induced Sprague-Dawley
* treated rats.

**

** Duplicate human peripheral blood cultures were exposed to the vehicle,
* test substance or positive control substances at appropriate
* concentrations in the following experiments:

** a) A cytogenetic experiment was conducted using a sample of pooled blood.
* Cells were exposed to the test substance and control substances for a
* period of 3 hours, both in the presence and absence of S9 mix. Vehicle,
* untreated, and positive control cultures were included.

** b) A second independent cytogenetic experiment was conducted using a
* sample of pooled blood. Cells were exposed to the test substance and
* control substances for a period of 3 hours, both in the presence and
* absence of S9 mix. Vehicle, untreated, and positive control cultures
* were included.

**

** Treatment of the cultures started approximately 48 hours after culture
* initiation. A single sampling time, 20 hours after the start of treatment
* (68 hours after culture initiation), was used. The OECD guideline for
* this assay recommended a period equivalent to about 1.5 cell cycles
* between the start of treatment and sampling. The sampling time of 20
* hours after the start of treatment, used in this study, was based on a
* measured mean cell cycle time for cultured human peripheral lymphocytes
* established in the laboratory of 13.5 hours.

**

** The effect of allyl alcohol on pH and osmolality of the culture medium
* was evaluated using single cultures containing medium only. The
* solubility of the test substance in the treated blood cultures and in
* media only cultures was assessed immediately after treatment and at the
* end of the treatment period.

**

** Slides were examined to determine that they were of suitable quality and,
* where appropriate, the mitotic index was determined by examining 1000
* lymphocytes per culture and calculating the percentage of cells in
* metaphase. For each experiment, both in the presence and absence of S9
* mix, duplicate cultures treated with allyl alcohol at three
* concentrations were selected for chromosomal aberration analyses along
* with the appropriate vehicle and positive control cultures. The slides
* were coded prior to analysis and one hundred cells in metaphase, where
* possible, were analyzed from each selected culture for the incidence of
* structural chromosomes.

**

** The percentage of aberrant metaphases and the number of aberrations per
* cell were calculated for each treatment scored, both including and
* excluding cells with only gap-type aberrations.

**

** The Fisher Exact Probability Test (one-sided) was used to evaluate
* statistically the percentage of metaphases showing aberrations (excluding
* cells with only gap-type aberrations). Data from each treatment group,
* in the presence and absence of S9 mix, were compared with the respective
* control group value. A positive response was concluded for an increase
* in the percentage of aberrant cells, at least at one concentration, which
* was substantially greater than the laboratory historical solvent control
* values.

F020 1488

EOR

F002 9

F010 5.5
 F004 10
 F005 RE
 F006 Fox, V. (2004). Allyl alcohol: In vitro cytogenetics assay in human
 * lymphocytes. CTL Study Number SV1223. Central Toxicology Laboratory,
 * Cheshire, UK. Sponsored by Hercules Incorporated, Wilmington, DE.
 F007 Fox, V. (2004). Allyl alcohol: In vitro cytogenetics assay in human
 * lymphocytes. CTL Study Number SV1223. Central Toxicology Laboratory,
 * Cheshire, UK. Sponsored by Hercules Incorporated, Wilmington, DE.

F020 1493
 EOR

F002 9
 F010 5.5
 F004 10

F005 RL
 F006 Guideline, GLP study. No circumstances occurred that would have affected
 * the quality and integrity of the data.
 F007 Guideline, GLP study. No circumstances occurred that would have affected
 * the quality and integrity of the data.

F020 1492
 EOR

F002 9
 F010 5.5
 F004 10
 F005 RS

F006 The highest concentrations selected for chromosomal aberration analyses
 * were the limit concentration for the assay (581 ug/mL; 10mM) or limited
 * by cytotoxic effects on the chromosomes (200 ug/mL). Concentrations
 * above this were not suitable

F007 The highest concentrations selected for chromosomal aberration analyses
 * were the limit concentration for the assay (581 ug/mL; 10mM) or limited
 * by cytotoxic effects on the chromosomes (200 ug/mL). Concentrations
 * above this were not suitable for analysis due to excessive cytotoxic
 * effects on the chromosomes. Reductions in mean mitotic activity,
 * compared to the solvent control values, were observed in cultures from
 * Experiment 1 (37% +S9 mix) and experiment 2 (23%, + S9 mix; 16% - S9 mix)
 * treated with the highest concentrations of allyl alcohol selected for
 * chromosomal aberration analysis. No reduction in mitotic activity was
 * observed in Experiment 1 in the absence of S9 mix.

**
 ** Treatment of the culture medium with allyl alcohol up to 581 ug/mL (10mM)
 * had no significant effect on osmolality or pH.
 **

** Statistically and biologically significant increases in the percentage of
 * aberrant cells, compared to the vehicle control values, were recorded in
 * cultures from Experiment 1 in the presence of S9 mix and treated in
 * cultures from Experiment 2 in the presence and absence of S9 mix. The
 * positive control materials induced statistically and biologically
 * significant increases in the percentage of aberrant cells, compared to
 * the vehicle control cultures.

** Results from Experiment 1 and 2

** Without S9 Mix
 ** (excluding gaps)
 ** Compound Dose (ug/mL) Mean % Aberrant Cells Mean % Mitotic Index
 **

**	AA		581		1.00
*		13.3			
**			581		12.5**
*		11.5			
**			400		1.00
*		11.7			
**			400		16.80**
*		11.5			
**			100		1.00
*		15.2			
**			100		7.50
*		11.9			
**	DMSO		10 (uL/mL)	0.00	
*		11.1			
**			10 (uL/mL)		4.00
*		13.7			
**	Mitomycin C		0.5	23.00**	
*		10.9			
**			0.5		40.00**
*		6.8			
**	With S9 Mix				
**					(excluding gaps)
**	Compound	Dose (ug/mL)	Mean % Aberrant Cells		Mean % Mitotic Index
**	AA		581		10.50**
*		6.9			
**			200		18.00**
*		9.2			
**			400		3.50
*		9.3			
**			100		7.00*
*		13.0			
**			100		3.50
*		12.4			
**			25		3.00
*		16.1			
**	DMSO		10 (uL/mL)	2.00	
*		11.0			
**			10 (uL/mL)		2.00
*		11.9			
**	Cyclophosphamide	50		32.00**	
*		5.1			
**			50		48.00**
*		12.4			
**					

* Statistically significantly increase in the percentage of aberrant cells at p< 0.05 using Fisher's Exact Test (one-sided).
 ** Statistically significantly increase in the percentage of aberrant cells at p< 0.01 using Fisher's Exact Test (one-sided).

F020 1489

EOR

F002 9

F010 5.5

F004 10

F005 TS

F006 Allyl alcohol, >99.9%, Sigma-Aldrich

F007 Allyl alcohol, >99.9%, Sigma-Aldrich
F020 1490
EOR
F002 9
F010 5.6
F004 1
F005 CL
F006 Under the conditions of the study, no increase in
** micronucleated polychromatic erythrocytes was detected in
** male F344 rats given allyl alcohol at doses of up to 40
** mg/kg bw/d for three consecutive days.
F007 Under the conditions of the study, no increase in
** micronucleated polychromatic erythrocytes was detected in
** male F344 rats given allyl alcohol at doses of up to 40
** mg/kg bw/d for three consecutive days.
F020 1414
EOR
F002 9
F010 5.6
F004 1
F005 ME
F006 ANIMALS AND TREATMENTS
** Male F344 rats were given allyl alcohol at 5, 10 or 20 mg/kg
** bw (n=5/treatment) by i.p. injection on 3 consecutive days.
** The control group (n=4) received physiological saline. Bone
** marrow was collected 24 hr after the
F007 ANIMALS AND TREATMENTS
** Male F344 rats were given allyl alcohol at 5, 10 or 20 mg/kg
** bw (n=5/treatment) by i.p. injection on 3 consecutive days.
** The control group (n=4) received physiological saline. Bone
** marrow was collected 24 hr after the final treatment. Two
** thousand polychromatic erythrocytes were examined
** microscopically and scored for the presence of micronuclei.
** No further experimental details available.
**
** POSITIVE CONTROL SUBSTANCE
** Cyclophosphamide (7.5 mg/kg bw) was used as positive control
** (presumed i.p. injection on 3 consecutive days, however no
** details available).
**
** STATISTICAL METHODS
** Control versus test comparisons are reported together with
** trend analysis, however no information on methods applied.
F020 1415
EOR
F002 9
F010 5.6
F004 1
F005 RE
F006 NTP unpublished results (ntp-server.niehs.nih.gov/)
F007 NTP unpublished results (ntp-server.niehs.nih.gov/)
F020 1416
EOR
F002 9
F010 5.6
F004 1
F005 RL

F006 GLP compliant, NTP guideline study but only limited
** information available for review, hence Reliability 2.
F007 GLP compliant, NTP guideline study but only limited
** information available for review, hence Reliability 2.
F020 1417
EOR
F002 9
F010 5.6
F004 1
F005 RS
F006 There was no statistically significant difference in the
** number of micronuclei per 1000 PCEs in rats given allyl
** alcohol at 5, 10 or 20 mg/kg bw/d by i.p. injection on 3
** consecutive days:
** Control 1.4 MN/1000 PCE
** 5 mg/kg 2.0
** 10 mg/kg 1.6
** 2
F007 There was no statistically significant difference in the
** number of micronuclei per 1000 PCEs in rats given allyl
** alcohol at 5, 10 or 20 mg/kg bw/d by i.p. injection on 3
** consecutive days:
** Control 1.4 MN/1000 PCE
** 5 mg/kg 2.0
** 10 mg/kg 1.6
** 20 mg/kg 1.4
** The trend for incidence of micronucleated NCEs was
** non-significant.
**
** Animals given 40, 60 or 80 mg/kg died prior to scheduled
** study termination.
**
** A satisfactory response was obtained with the positive
** control group (24.2 MN per 1000 PCEs; P=0.0000).
F020 1418
EOR
F002 9
F010 5.6
F004 1
F005 TS
F006 Allyl alcohol, CAS No 107-18-6, aliquot no. A98432 (no
** further details).
F007 Allyl alcohol, CAS No 107-18-6, aliquot no. A98432 (no
** further details).
F020 1419
EOR
F002 9
F010 5.6
F004 2
F005 CL
F006 Under the conditions of the study, no increase in
** micronucleated normochromatic erythrocytes was detected in
** male or female B6C3F1 mice given allyl alcohol by gavage at
** doses of up to 50 mg/kg bw/d for 13 weeks.
F007 Under the conditions of the study, no increase in
** micronucleated normochromatic erythrocytes was detected in
** male or female B6C3F1 mice given allyl alcohol by gavage at

** doses of up to 50 mg/kg bw/d for 13 weeks.
F020 1420
EOR
F002 9
F010 5.6
F004 2
F005 ME
F006 ANIMALS AND TREATMENTS
** Male and female B6C3F1 mice (n=10/sex/dose level for solvent control and
* treatment groups) were given allyl alcohol at doses of 0, 3, 6, 12, 25 or
* 50 mg/kg bw/day by oral gavage for 13 weeks. (Comment: the control sol
F007 ANIMALS AND TREATMENTS
** Male and female B6C3F1 mice (n=10/sex/dose level for solvent control and
* treatment groups) were given allyl alcohol at doses of 0, 3, 6, 12, 25 or
* 50 mg/kg bw/day by oral gavage for 13 weeks. (Comment: the control
* solvent vehicle is not identified; it is not stated if treatment
* continued 5 days/week or 7 days/week). Peripheral blood was collected 24
* hours after the final treatment. One thousand normochromic erythrocytes
* were examined microscopically and scored for the presence of micronuclei.
* No further experimental details available.
**
** POSITIVE CONTROL SUBSTANCE
** No positive control substance was used.
**
** STATISTICAL METHODS
** Control versus test comparisons are reported together with
** trend analysis, however no information on methods applied.
F020 1421
EOR
F002 9
F010 5.6
F004 2
F005 RE
F006 NTP unpublished results (ntp-server.niehs.nih.gov//)
F007 NTP unpublished results (ntp-server.niehs.nih.gov//)
F020 1422
EOR
F002 9
F010 5.6
F004 2
F005 RL
F006 GLP compliant, NTP guideline study but only limited
** information available for review, hence Reliability 2.
F007 GLP compliant, NTP guideline study but only limited
** information available for review, hence Reliability 2.
F020 1423
EOR
F002 9
F010 5.6
F004 2
F005 RS
F006 There was no statistically significant difference in the
** number of micronuclei per 1000 NCEs at any treatment level
** in either sex:
** - males
** Control 1.1 MN/1000 NCE
** 3 mg/kg 1.2

** 6 mg/kg 1.7
** 12 mg/kg 1.4
** 25 mg/kg 1.2
** 50 mg/kg 1.6

**
** - fe

F007 There was no statistically significant difference in the
** number of micronuclei per 1000 NCEs at any treatment level
** in either sex:

** - males

** Control 1.1 MN/1000 NCE

** 3 mg/kg 1.2

** 6 mg/kg 1.7

** 12 mg/kg 1.4

** 25 mg/kg 1.2

** 50 mg/kg 1.6

**

** - females

** Control 0.7 MN/1000 NCE

** 3 mg/kg 0.9

** 6 mg/kg 1.0

** 12 mg/kg 0.7

** 25 mg/kg 1.5

** 50 mg/kg 1.1

** The trend for incidence of micronucleated NCEs was

** non-significant.

F020 1424

EOR

F002 9

F010 5.6

F004 2

F005 TS

F006 Allyl alcohol, CAS No 107-18-6, aliquot no. A98432 (no
** further details).

F007 Allyl alcohol, CAS No 107-18-6, aliquot no. A98432 (no
** further details).

F020 1425

EOR

F002 9

F010 5.6

F004 3

F005 CL

F006 Under the conditions of the study, no increase in
** post-implantation loss (dominant lethality) or
** chromosomal/karyotypic abnormalities were present in fetuses
** sired by male SD rats given allyl alcohol at 25 mg/kg bw/d
** for up to 12 wk.

F007 Under the conditions of the study, no increase in
** post-implantation loss (dominant lethality) or
** chromosomal/karyotypic abnormalities were present in fetuses
** sired by male SD rats given allyl alcohol at 25 mg/kg bw/d
** for up to 12 wk.

F020 1426

EOR

F002 9

F010 5.6

F004 3

F005 ME

F006 ANIMALS AND TREATMENTS

** Male SD rats (9-11 wk old) were given 0.85% saline (control group; n=6) or allyl alcohol (25 mg/kg bw/d) by oral gavage (10 ml/kg bw; 7 d/wk for 12 wk, 5 d/wk to wk 15).

**

** Each male was caged with 2 virgin females (u

F007 ANIMALS AND TREATMENTS

** Male SD rats (9-11 wk old) were given 0.85% saline (control group; n=6) or allyl alcohol (25 mg/kg bw/d) by oral gavage (10 ml/kg bw; 7 d/wk for 12 wk, 5 d/wk to wk 15).

**

** Each male was caged with 2 virgin females (until a sperm-positive smear was obtained; up to 6 nights) on wk 1-11.

**

** After mating was complete the males were subject to a gross postmortem examination and hematological screen. Sperm parameters were also assessed (no further methodological details). Males treated with allyl alcohol were sacrificed in wk 15, while controls were maintained until wk 33 (dosed 5 d/wk, in support of a parallel experiment).

**

** REPRODUCTION PARAMETERS

** On GD20, females from mating weeks 1-11 were killed and the uteri examined for:

** - total number of corpora lutea

** - total implants

** - live / dead fetuses

** - late / early deaths (calculated as a percentage of the total implants from the pregnant females in each group)

**

** FETAL EXAMINATION

** Each fetus was weighed and examined. Abnormal fetuses were photographed (polaroid) prior to removal of a sample of liver (chromosomal preparation) and preservation for skeletal staining and evaluation. The abnormal fetal index was calculated as a percentage of the total number of term fetuses observed at post-mortem. When karyotype abnormalities were observed the chromosome(s) involved were identified according to the standard karyotype of the Norway rat (Committee for a Standardised Karyotype of Rattus norvegicus; not included in study bibliography). (No further details are given on methods used for chromosomal and karyotypic analysis.)

**

** STATISTICAL METHODS

** Litter data were analyzed using Fisher's exact test. Other data were evaluated for significant differences relative to the controls, however the methods used are not reported.

F020 1427

EOR

F002 9

F010 5.6

F004 3

F005 RE

F006 Jenkinson, PC and Anderson, D (1990) Malformed fetuses and

** karyotype abnormalities in the offspring of cyclophosphamide
** and allyl alcohol-treated male rats. Mut Res 229, 173-184.
F007 Jenkinson, PC and Anderson, D (1990) Malformed fetuses and
** karyotype abnormalities in the offspring of cyclophosphamide
** and allyl alcohol-treated male rats. Mut Res 229, 173-184.
F020 1428
EOR
F002 9
F010 5.6
F004 3
F005 RL
F006 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F007 Study available for review. Non-guideline, non-GLP
** experimental study. Reasonably well reported methods and
** results, suitable for assessment.
F020 1429
EOR
F002 9
F010 5.6
F004 3
F005 RM
F006 The authors note that paternal exposure to a mutagenic agent
** result in changes in chromosomal structure and/or number,
** which may be manifest as fetal abnormalities or changes in
** karyotype.
**
** Cyclophosphamide (3.5-5.1 mg/kg for up to 33 wk) w
F007 The authors note that paternal exposure to a mutagenic agent
** result in changes in chromosomal structure and/or number,
** which may be manifest as fetal abnormalities or changes in
** karyotype.
**
** Cyclophosphamide (3.5-5.1 mg/kg for up to 33 wk) was also
** evaluated in this study. It was associated with a highly
** significant and consistent increase in the numbers of
** malformed fetuses with karyotypic abnormalities. These
** effects were paralleled by a large increase in the number of
** post-implantation losses (dominant lethal events), but no
** significant effect on sperm parameters. These findings
** validate the methods used in this study.
F020 1430
EOR
F002 9
F010 5.6
F004 3
F005 RS
F006 PATERNAL EFFECTS
** Mean body weight was lower in male rats given allyl alcohol
** (569+/-49 g) compared to controls (635+/-74g); this may, in
** part, have reflected the 18 wk age difference at sacrifice.
** Relative liver weight was increased 26% (P<
F007 PATERNAL EFFECTS
** Mean body weight was lower in male rats given allyl alcohol
** (569+/-49 g) compared to controls (635+/-74g); this may, in
** part, have reflected the 18 wk age difference at sacrifice.

** Relative liver weight was increased 26% (P<0.05), and
** relative spleen weight 22% (P<0.05), with non-significant
** increases in relative kidney and testis weights (data not
** reported).

** Red cell count, mean cell volume, percentage cell volume and
** hemoglobin concentration were unaffected by treatment with
** allyl alcohol (data not reported). White cell counts were
** similar in treated and control animals, however a
** differential count revealed a significant increase in
** percentage of lymphocytes with a corresponding significant
** decrease in eosinophils and neutrophil counts (data not
** reported). The authors comment that these changes in
** differential count were within the normal range for the SD
** rat.

** Total sperm count and epididymal sperm concentration were
** unaffected by treatment (data not reported).

** REPRODUCTION PARAMETERS

** There was a total of 1669 live implants from 125 pregnancies
** in the controls (13.4 implants/litter) versus 1371 liver
** implants from 108 litters in the allyl alcohol-treated group
** (12.7 implants/litter) (non significant).

** Mean preimplantation loss was comparable in control
** (12.8+/-5.4%) and treated (11.7+/-6.2%) groups.

** The rate of post-implantation loss (dominant lethality)
** varied between 2.2-13.2% in the controls, with a mean for
** the whole study (13 matings) of 6.2%. The comparable range
** for the male rats given allyl alcohol was 1.7-8.7%, with an
** overall mean of 4.7%.

** FETAL ABNORMALITIES

** The incidence of runted, abnormal and grossly abnormal
** fetuses was comparable in the control and treated groups.

	Control	Treated
** Total number runts	13 (0.78%)	13 (0.95%)
** Total number gross abnormalities (%)	0 (0%)	3 (0.22%)
** Total number abnormal fetuses (%)	13 (0.78%)	16 (1.17%)

** The three abnormalities in the treated group comprised were
** diagnosed as:

- ** - anasarca (massive edema)
- ** - exencephaly
- ** - craniofacial and skeletal abnormality.

** The combined incidence of gross abnormalities was not
** statistically significantly different between the control
** (n=0) and treated (n=3) groups.

** Comment: The authors note that the incidence of grossly
** abnormal fetuses (0.22%) was within the historic range for
** this strain of rat (not reported) and were therefore
** considered to be spontaneous in origin.

** KARYOTYPIC ANALYSIS

** Karyotypic abnormalities were present in 3 of 12 slides

** prepared from abnormal fetuses from the treated group
** whereas no abnormal karyotype was present in 5 slides from
** the controls:

	Control	Treated
** No. of abnormal fetuses evaluated:	8	14
** Slides with scorable metaphases:	5	12
** Slides with no karyotypic abnormality	5	9
** Slides with karyotypic abnormality	0	3

** The abnormalities from the allyl alcohol treated group were
** diagnosed as:
** - trisomy with 3 fragments of possible centromeric origin in
** every metaphase (runt)
** - trisomy (anasarca/runt)
** - trisomy (craniofacial/skeletal)

** Comment: Data for other endpoints described in the methods
** section are not reported in the paper; it is assumed that
** these were unaltered by treatment with allyl alcohol.

F020 1431

EOR

F002 9

F010 5.6

F004 3

F005 TS

F006 Allyl alcohol, Aldrich Chemical Co., Gillingham, Dorset, UK

** (no further details).

F007 Allyl alcohol, Aldrich Chemical Co., Gillingham, Dorset, UK

** (no further details).

F020 1432

EOR

F002 9

F010 5.7

F004 1

F005 CL

F006 Under the conditions of this study, no clear evidence of
** carcinogenicity was seen in male or female F344 rats given
** allyl alcohol in drinking water (300 mg/l) for up to 106 wk.

F007 Under the conditions of this study, no clear evidence of
** carcinogenicity was seen in male or female F344 rats given
** allyl alcohol in drinking water (300 mg/l) for up to 106 wk.

F020 1433

EOR

F002 9

F010 5.7

F004 1

F005 ME

F006 Male and female F344 rats (n=20/sex; age 7-8 wk; housed
** 4/cage) were given allyl alcohol (300 mg/l) in drinking
** water 5 d/wk for up to 106 wk (tap water given on remaining
** days). A similar number of animals received tap water ad
** libitum. Th

F007 Male and female F344 rats (n=20/sex; age 7-8 wk; housed
** 4/cage) were given allyl alcohol (300 mg/l) in drinking
** water 5 d/wk for up to 106 wk (tap water given on remaining
** days). A similar number of animals received tap water ad
** libitum. The animals were allowed to survive until natural

** death or until wk 123-132 of the study, which ever occurred
** later.
**
** Fresh solutions were prepared weekly and stored in a
** refrigerator until use. Stability studies (GC analysis)
** demonstrated 100% recovery of allyl alcohol after 7 days (no
** further information available).
**
** No further experimental details available.

F020 1434
EOR
F002 9
F010 5.7
F004 1
F005 RE
F006 Lijinsky, W and Reuber, MD (1987) Chronic carcinogenesis
** studies of acrolein and related compounds. Toxicol Ind Hlth
** 3, 337-345.
F007 Lijinsky, W and Reuber, MD (1987) Chronic carcinogenesis
** studies of acrolein and related compounds. Toxicol Ind Hlth
** 3, 337-345.

F020 1435
EOR
F002 9
F010 5.7
F004 1
F005 RL
F006 Study available for review. Non-guideline, non-GLP study.
** Reasonably well reported methods but limited reporting of
** results. Supports overall hazard assessment.
F007 Study available for review. Non-guideline, non-GLP study.
** Reasonably well reported methods but limited reporting of
** results. Supports overall hazard assessment.

F020 1436
EOR
F002 9
F010 5.7
F004 1
F005 RS
F006 Median survival was unaffected by treatment:
** - males: controls = 115 wk, treated = 113 wk
** - females: controls = 118 wk, treated = 112 wk
**
** The tumors observed in this study were stated to be of the
** types commonly seen in untreated F344 rat
F007 Median survival was unaffected by treatment:
** - males: controls = 115 wk, treated = 113 wk
** - females: controls = 118 wk, treated = 112 wk
**
** The tumors observed in this study were stated to be of the
** types commonly seen in untreated F344 rats. Findings were as
** follows:
**
** LIVER:
** Hyperplastic nodules and a few well differentiated
** hepatocellular carcinoma.
** Controls: 2/20 M; 2/20 F

** Treated: 3/20 M; 6/20 F

**

** ADRENAL CORTEX:

** Hyperplastic nodules and adenoma.

** Controls: 1/20 M; 1/20 F

** Treated: 0/20 M; 0/20 F

**

** PITUITARY:

** No description.

** Controls: 14/20 M; 14/20 F

** Treated: 10/20 M; 10/20 F

**

** LEUKEMIA:

** No description.

** Controls: 12/20 M; 6/20 F

** Treated: 8/20 M; 6/20 F

**

** Comment: While the authors comment that the occurrence of
** specific tumor types was increased after treatment with
** other substances included in this study, the increased
** occurrence of hepatic nodules/carcinoma in females given
** allyl alcohol relative to that present in the controls is
** not the subject of discussion. This suggests this finding
** was considered of doubtful biological significance.

F020 1437

EOR

F002 9

F010 5.7

F004 1

F005 TS

F006 Allyl alcohol, Aldrich Chemical Company (no further
** details).

F007 Allyl alcohol, Aldrich Chemical Company (no further
** details).

F020 1438

EOR

F002 9

F010 5.7

F004 2

F005 RE

F006 Lijinsky, W and Reuber, MD (1987) Chronic carcinogenesis
** studies of acrolein and related compounds. Toxicol Ind Hlth
** 3, 337-345.

F007 Lijinsky, W and Reuber, MD (1987) Chronic carcinogenesis
** studies of acrolein and related compounds. Toxicol Ind Hlth
** 3, 337-345.

F020 1439

EOR

F002 9

F010 5.7

F004 2

F005 RL

F006 Study available for review. Briefly reported methods and
** findings, insufficient for full assessment, reliability
** cannot be assessed.

F007 Study available for review. Briefly reported methods and
** findings, insufficient for full assessment, reliability

** cannot be assessed.

F020 1440

EOR

F002 9

F010 5.7

F004 2

F005 RM

F006 In a poorly reported study, no increase in tumors of the
** adrenal cortex, forestomach or pancreas duct was noted in
** male Syrian hamsters give 2 mg allyl alcohol in corn oil for
** up to 60 wk. The animals were allowed to survive until
** natural d

F007 In a poorly reported study, no increase in tumors of the
** adrenal cortex, forestomach or pancreas duct was noted in
** male Syrian hamsters give 2 mg allyl alcohol in corn oil for
** up to 60 wk. The animals were allowed to survive until
** natural death or for up to a further 30-32 wk
** post-treatment. Although not stated, it is assumed that
** gavage administration was employed.

F020 1441

EOR

F002 9

F010 5.7

F004 2

F005 TS

F006 Allyl alcohol, Aldrich Chemical Company (no further
** details).

F007 Allyl alcohol, Aldrich Chemical Company (no further
** details).

F020 1442

EOR

F002 9

F010 5.8.1

F004 1

F005 CL

F006 Under the conditions of the study, no statistically
** significant changes were present in relative testis weight,
** total sperm count and epididymal sperm concentration or
** reproductive performance for male SD rats given allyl
** alcohol at 25 mg/k

F007 Under the conditions of the study, no statistically
** significant changes were present in relative testis weight,
** total sperm count and epididymal sperm concentration or
** reproductive performance for male SD rats given allyl
** alcohol at 25 mg/kg bw/d for up to 12 wk.

F020 1443

EOR

F002 9

F010 5.8.1

F004 1

F005 ME

F006 ANIMALS AND TREATMENTS

** Male SD rats (9-11 wk old) were given 0.85% saline (control
** group; n=6) or allyl alcohol (25 mg/kg bw/d) by oral gavage
** (10 ml/kg bw; 7 d/wk for 12 wk, then 5 d/wk to wk 15).
**

** Each male was caged with 2 virgin femal

F007 ANIMALS AND TREATMENTS

** Male SD rats (9-11 wk old) were given 0.85% saline (control group; n=6) or allyl alcohol (25 mg/kg bw/d) by oral gavage (10 ml/kg bw; 7 d/wk for 12 wk, then 5 d/wk to wk 15).

** Each male was caged with 2 virgin females (until a sperm-positive smear was obtained; up to 6 nights) on wk 1-11.

** After mating was complete the males were subject to a gross postmortem examination. Gonadal weights and sperm parameters (no further methodological details) were assessed. Males treated with allyl alcohol were sacrificed in wk 15, while controls were maintained until wk 33 (dosed 5 d/wk, in support of a parallel experiment).

** REPRODUCTION PARAMETERS

** On GD20, females from mating weeks 1-11 were killed and the uteri examined for:

** - total number of corpora lutea

** - total implants

** - live / dead fetuses

** - late / early deaths (calculated as a percentage of the total implants from the pregnant females in each group)

** STATISTICAL METHODS

** Litter data were analyzed using Fisher's exact test. Other data were evaluated for significant differences relative to the controls, however the methods used are not reported.

F020 1444

EOR

F002 9

F010 5.8.1

F004 1

F005 RE

F006 Jenkinson, PC and Anderson, D (1990) Malformed fetuses and karyotype abnormalities in the offspring of cyclophosphamide and allyl alcohol-treated male rats. Mut Res 229, 173-184.

F007 Jenkinson, PC and Anderson, D (1990) Malformed fetuses and karyotype abnormalities in the offspring of cyclophosphamide and allyl alcohol-treated male rats. Mut Res 229, 173-184.

F020 1445

EOR

F002 9

F010 5.8.1

F004 1

F005 RL

F006 Study available for review. Non-guideline, non-GLP experimental study. Reasonably well reported methods but limited reporting of results. Supports overall hazard assessment.

F007 Study available for review. Non-guideline, non-GLP experimental study. Reasonably well reported methods but limited reporting of results. Supports overall hazard assessment.

F020 1446

EOR

F002 9
F010 5.8.1
F004 1
F005 RS
F006 PATERNAL EFFECTS
** Mean body weight was lower in male rats given allyl alcohol
** (569+/-49 g) compared to controls (635+/-74g); this may, in
** part, have reflected the 18 wk age difference at sacrifice.
**
** Relative testis weights were increased (da
F007 PATERNAL EFFECTS
** Mean body weight was lower in male rats given allyl alcohol
** (569+/-49 g) compared to controls (635+/-74g); this may, in
** part, have reflected the 18 wk age difference at sacrifice.
**
** Relative testis weights were increased (data not reported;
** non-significant).
**
** Total sperm count and epididymal sperm concentration were
** unaffected by treatment (data not reported).
**
** REPRODUCTION PARAMETERS
** There was a total of 1669 live implants from 125 pregnancies
** in the controls (13.4 implants/litter) versus 1371 liver
** implants from 108 litters in the allyl alcohol-treated group
** (12.7 implants/litter) (non significant).
**
** Mean preimplantation loss was comparable in control
** (12.8+/-5.4%) and treated (11.7+/-6.2%) groups.
**
** Comment: Data for other endpoints described in the methods
** section are not reported in the paper; it is assumed that
** these were unaltered by treatment with allyl alcohol.
F020 1447
EOR
F002 9
F010 5.8.1
F004 1
F005 TS
F006 Allyl alcohol, Aldrich Chemical Co., Gillingham, Dorset, UK
** (no further details).
F007 Allyl alcohol, Aldrich Chemical Co., Gillingham, Dorset, UK
** (no further details).
F020 1448
EOR
F002 9
F010 5.8.1
F004 2
F005 CL
F006 No treatment-related changes were present in gonadal weights
** or histopathology in male and female rats given allyl
** alcohol at received doses of up to 48-58 mg/kg bwt/d.
F007 No treatment-related changes were present in gonadal weights
** or histopathology in male and female rats given allyl
** alcohol at received doses of up to 48-58 mg/kg bwt/d.
F020 1449
EOR

F002 9
F010 5.8.1
F004 2
F005 ME
F006 ANIMALS AND TREATMENTS
** Groups of Wistar rats (15/sex/treatment level) were exposed
** to allyl alcohol in the drinking water at 0 (control), 50,
** 100, 200 or 800 ppm for 15 weeks.
**
** NECROPSY AND HISTOPATHOLOGY
** At the end of the appropriate treata
F007 ANIMALS AND TREATMENTS
** Groups of Wistar rats (15/sex/treatment level) were exposed
** to allyl alcohol in the drinking water at 0 (control), 50,
** 100, 200 or 800 ppm for 15 weeks.
**
** NECROPSY AND HISTOPATHOLOGY
** At the end of the appropriate treatment period, animals were
** killed by exsanguination following an overnight fast and
** subject to a post-mortem examination. This included gonadal
** weights and histopathological examination of testis, ovary
** and uterus.
**
** See Section 5.4 for further experimental details.
F020 1450
EOR
F002 9
F010 5.8.1
F004 2
F005 RE
F006 Carpanini, FMB, Gaunt, IF, Hardy, J, Gangolli, SD,
** Butterworth, KR and Lloyd, AG (1978) Short-term toxicity of
** allyl alcohol in rats. Toxicol. 9, 29-45.
F007 Carpanini, FMB, Gaunt, IF, Hardy, J, Gangolli, SD,
** Butterworth, KR and Lloyd, AG (1978) Short-term toxicity of
** allyl alcohol in rats. Toxicol. 9, 29-45.
F020 1451
EOR
F002 9
F010 5.8.1
F004 2
F005 RL
F006 Study available for review. Non-guideline, non-GLP study.
** Reasonably well reported methods and results, suitable for
** assessment.
F007 Study available for review. Non-guideline, non-GLP study.
** Reasonably well reported methods and results, suitable for
** assessment.
F020 1452
EOR
F002 9
F010 5.8.1
F004 2
F005 RS
F006 INTAKE OF TEST SUBSTANCE
** The calculated mean intake of allyl alcohol over the course
** of the study (based on body weight and water intake data)

** was:
** Males: 0, 4.8, 8.3, 14.0, 48.2 mg/kg bw/d
** Females: 0, 6.2, 6.9, 17.1 and 58.4 mg/kg bw/d

** PO

F007 INTAKE OF TEST SUBSTANCE

** The calculated mean intake of allyl alcohol over the course
** of the study (based on body weight and water intake data)
** was:
** Males: 0, 4.8, 8.3, 14.0, 48.2 mg/kg bw/d
** Females: 0, 6.2, 6.9, 17.1 and 58.4 mg/kg bw/d

** POST MORTEM EXAMINATION

** Absolute organ weights (including gonadal weights) were
** generally decreased in males, and to a lesser extent in
** females, in a time- and treatment related manner. Relative
** organ weights (including gonadal weights) were generally
** increased to a statistically significant extent in high dose
** animals of both sexes at study termination. These changes
** appeared secondary to a reduction in water intake
** (presumably due to unpalatability of the treatment solution)
** and body weight, that was particularly pronounced in high
** dose animals.

** HISTOPATHOLOGICAL EVALUATION

** No histopathological abnormalities were reported for testis,
** ovary or uterus.

F020 1453

EOR

F002 9

F010 5.8.1

F004 2

F005 TS

F006 Allyl alcohol, 99% pure, SG (20 degree C) 0.849-0.852; bpt
** 95-98 degrees C, supplied by Bush Boake Allen Ltd, London.
F007 Allyl alcohol, 99% pure, SG (20 degree C) 0.849-0.852; bpt
** 95-98 degrees C, supplied by Bush Boake Allen Ltd, London.

F020 1454

EOR

F002 9

F010 5.8.2

F004 1

F005 CL

F006 A treatment related increase in dead and resorbed fetuses
** was reported following intraamniotic injection of 100 or
** 1000 ug allyl alcohol/fetus on GD13. However the
** non-physiological route of exposure, together with an
** increased occurrence o

F007 A treatment related increase in dead and resorbed fetuses
** was reported following intraamniotic injection of 100 or
** 1000 ug allyl alcohol/fetus on GD13. However the
** non-physiological route of exposure, together with an
** increased occurrence of dead/resorbed fetuses in the
** untreated (contra-lateral) uterine horn, suggests these
** observations are of doubtful reliability for the purposes of
** hazard identification.

F020 1455

EOR

F002 9

F010 5.8.2

F004 1

F005 ME

F006 Time-mated pregnant SD rats (225-250; Charles River Canada

** Inc.) were anesthetized (ether) on GD13 and the uteri

** exposed. Embryos in one uterine horn received an

** intraamniotic injection (10 ul; 30-gauge needle) of allyl

** alcohol (10, 100 or

F007 Time-mated pregnant SD rats (225-250; Charles River Canada

** Inc.) were anesthetized (ether) on GD13 and the uteri

** exposed. Embryos in one uterine horn received an

** intraamniotic injection (10 ul; 30-gauge needle) of allyl

** alcohol (10, 100 or 1000 ug/fetus in 0.9% NaCl) while those

** in the other horn were untreated. An unspecified number of

** saline injected controls were also included in the study and

** treated in a similar manner (i.e., injected or sham treated).

** The uterus was repositioned and the laporotomy closed (nylon
sutures).

**

** Rats were sacrificed on GD20 (ether overdose) and the number

** of dead or resorbed fetuses recorded. Live fetuses were

** examined for external malformations, blotted dry and

** weighed.

**

** The results were analyzed using the Mann-Whitney U-Test.

F020 1456

EOR

F002 9

F010 5.8.2

F004 1

F005 RE

F006 Slott, VL and Hales, BF (1985) Teratogenicity and

** embryoletality of acrolein and structurally related

** compounds in rats. Teratology 32, 65-72.

F007 Slott, VL and Hales, BF (1985) Teratogenicity and

** embryoletality of acrolein and structurally related

** compounds in rats. Teratology 32, 65-72.

F020 1457

EOR

F002 9

F010 5.8.2

F004 1

F005 RL

F006 Study available for review. Briefly reported methods and

** findings, insufficient for full assessment, reliability

** cannot be assessed.

F007 Study available for review. Briefly reported methods and

** findings, insufficient for full assessment, reliability

** cannot be assessed.

F020 1458

EOR

F002 9

F010 5.8.2

F004 1

F005 RS

F006 Approx. 24% of the saline-injected control fetuses and 12%
** of the sham control fetuses were resorbed; 6% or 5%,
** respectively, were malformed. Comment: The number of control
** litters is not reported.
**

** Allyl alcohol treatment was associated wi
F007 Approx. 24% of the saline-injected control fetuses and 12%
** of the sham control fetuses were resorbed; 6% or 5%,
** respectively, were malformed. Comment: The number of control
** litters is not reported.
**

** Allyl alcohol treatment was associated with a dose-related
** increase in resorptions (treated uterine horn versus
** untreated contralateral horn), which was significant in the
** intermediate and high treatment groups. While no tabulated
** results are available, interpolation from graphical data
** included in the publication indicates that the mean number
** of dead or resorbed fetuses was 0.3, 0.5 (P<0.05) and 0.6
** (P<0.05) in the 10 (5 litters), 100 (8 litters) and 1000 (7
** litters) ug/fetus groups.
**

** Comment: The occurrence of dead or resorbed fetuses also
** increased in a treatment-related manner in the fetuses from
** the contra-lateral (untreated) uterine horn : <0.1, 0.2, 0.4 for the low,
* intermediate and high dose groups.
**

** Two fetuses from 7 high dose litters were malformed (limb
** defects; non-significant). Two contralateral controls
** (untreated) from 8 intermediate dose litters were also
** malformed (omphalocele, edema, micromelia of the limbs,
** clubfoot, short neck and micrognathia; the other had a minor forelimb
* defect).
**

F020 1459

EOR

F002 9

F010 5.8.2

F004 1

F005 TS

F006 Allyl alcohol, Aldrich Ltd, Montreal, Canada (no further
** details).

F007 Allyl alcohol, Aldrich Ltd, Montreal, Canada (no further
** details).

F020 1460

EOR

F002 9

F010 5.8.2

F004 2

F005 CL

F006 Maternal toxicity in the 35 and 50 mg/kg bwt/day groups consisted of
* mortalities, clinical findings, reductions in body weight gain and feed
* consumption, macroscopic liver findings and increased liver weights. One
* female in the 10 mg/kg bwt

F007 Maternal toxicity in the 35 and 50 mg/kg bwt/day groups consisted of
* mortalities, clinical findings, reductions in body weight gain and feed
* consumption, macroscopic liver findings and increased liver weights. One
* female in the 10 mg/kg bwt/day group also had macroscopic liver findings.
* Therefore, a dose level of 10 mg/kg/day was considered to be the

* lowest-observed-adverse-effect level (LOAEL) for maternal toxicity.
* Developmental toxicity in the 35 and 50 mg/kg bwt/day groups was
* expressed by an increase in postimplantation loss. Therefore, a dose
* level of 10 mg/kg bwt/day was considered to be the
* no-observed-adverse-effect level (NOAEL) for developmental toxicity when
* allyl alcohol was administered orally by gavage to pregnant rats.

F020 1497

EOR

F002 9

F010 5.8.2

F004 2

F005 ME

F006 ANIMALS AND MAINTENANCE

** - Species and strain: rat, Crl:CD (SD)IGS BR (Charles River
** Laboratories, Raleigh, NC, USA)
** - Age: 71 days on receipt
** - Acclimation period: 13 days
** - Group size: n=25
** - Housing: individually housed

F007 ANIMALS AND MAINTENANCE

** - Species and strain: rat, Crl:CD (SD)IGS BR (Charles River
** Laboratories, Raleigh, NC, USA)
** - Age: 71 days on receipt
** - Acclimation period: 13 days
** - Group size: n=25
** - Housing: individually housed in suspended wire mesh cages
** - Diet: Certified Rodent Lab Diet 5002 (PMI Nutrition International
* Inc.), ad libitum
** - Water: reverse osmosis-treated tap water, ad libitum - Environment:
* controlled within range of 70.4 to 71.5 degrees F, 41.9 to 53.9 % rel.
* humidity, 12 hour light/dark cycle, 10 air changes/hour
** - age at first treatment: approx. 12-13 weeks
**

** PREPARATION OF DOSING SOLUTIONS

** Oral dosing solutions were prepared weekly in deionized water vehicle and
* stored at room temperature for a period that did not exceed 10 days in
* duration.
**

** CONTROL

** Control group was dosed with deionized water
**

** ANALYSIS OF DOSING SOLUTIONS

** An aliquot from each formulation was taken from each weekly preparation
* and analyzed for concentration verification. Stability was determined
* over 10 days (room temperature).
**

** CLINICAL OBSERVATIONS

** All rats were observed twice daily, once in the morning and once in the
* afternoon, for moribundity and mortality. Individual detailed clinical
* observations were recorded from gestation days 0 through 20 (prior to
* dose administration during the treatment period). Animals were also
* observed for signs of toxicity at the time of dose administration and
* approximately 1 hour following dose administration. All significant
* findings were recorded. Individual maternal body weights were recorded
* on gestation days 0 and 6-20 (daily). Group mean body weights were
* calculated for each of these days. Mean body weight changes were
* calculated for each corresponding interval and also for gestation days

* internal examination. Fetal kidneys were examined and graded for renal
* papillae development. Heads from approximately one-half of the fetuses in
* each litter were placed in Bouin's fixative for subsequent soft-tissue
* examination by the Wilson sectioning technique. The heads from the
* remaining one-half of the fetuses were examined by a mid-coronal slice.
* All carcasses were eviscerated and fixed in 100% ethyl alcohol. Following
* fixation in alcohol, each fetus was macerated in potassium hydroxide and
* stained with Alizarin Red S and Alcian Blue. External, visceral and
* skeletal findings were recorded as developmental variations (alterations
* in anatomic structure that are considered to have no significant
* biological effect on animal health or body conformity and/or occur at
* high incidence, representing slight deviations from normal) or
* malformations (those structural anomalies that alter general body
* conformity, disrupt or interfere with normal body function, or may be
* incompatible with life). The fetal developmental findings were summarized
* by: 1) presenting the incidence of a given finding both as the number of
* fetuses and the number of litters available for examination in the group;
* and 2) considering the litter as the basic unit for comparison and
* calculating the number of affected fetuses in a litter on a proportional
* basis as follows:

**
** Summation per Group (%) = summation of Viable Fetuses Affected/Litter (%)
* divided by No. Litters/Group
**

** Where:

** Viable Fetuses Affected/Litter (%) = No. Viable Fetuses Affect./Litter
* divided by No. Viable Fetuses/Litter x 100
**

** STATISTICAL METHODS

** Analyses were conducted using two-tailed tests (except as noted
* otherwise) for minimum significance levels of 1% and 5%, comparing each
* test article-treated group to the control group. Each mean was presented
* with the standard deviation (S.D.) and the number of animals (N) used to
* calculate the mean. Where applicable, the litter was used as the
* experimental unit.
**

** Mean maternal body weights (absolute and net), body weight changes
* (absolute and net) and feed consumption, gravid uterine weights, numbers
* of corpora lutea, implantation sites and viable fetuses, and fetal body
* weights (separately by sex and combined) were subjected to a parametric
* one-way analysis of variance (ANOVA) (Snedecor and Cochran, Statistical
* Methods, 7th ed.; The Iowa State University Press: Ames, IA, pp 215-237,
* 1980) to determine intergroup differences. If the ANOVA revealed
* statistically significant ($p < 0.05$) intergroup variance, Dunnett's test
* (Dunnett, Biometric, 20:482-491, 1964) was used to compare the test
* article-treated groups to the control group. Mean litter proportions
* (percent per litter) of prenatal data (viable and nonviable fetuses,
* early and late resorptions, total resorptions, pre- and postimplantation
* loss, and fetal sex distribution), total fetal malformations and
* developmental variations (external, visceral, skeletal and combined) and
* each particular external, visceral and skeletal malformation or variation
* were subjected to the Kruskal-Wallis nonparametric ANOVA test (Kruskal
* and Wallis, Journal of the American Statistical Association,
* 47:583-621, 1952) to determine intergroup differences. If the ANOVA
* revealed statistically significant ($p < 0.05$) intergroup variance, the
* Dunn's test (Dunn, Technometrics, 6(3):241-252, 1964) was used to compare
* the test article-treated groups to the control group.

F020 1494

EOR

F002 9

F010 5.8.2

F004 2

F005 RE

F006 Stump, D.G. (2005). A prenatal developmental toxicity study of allyl
* alcohol in rats. Study Number - WIL-14038, WIL Research Laboratories,
* LLC., Ashland, OH. Sponsored by the Lyondell Chemical Company, Houston,
* TX.

F007 Stump, D.G. (2005). A prenatal developmental toxicity study of allyl
* alcohol in rats. Study Number - WIL-14038, WIL Research Laboratories,
* LLC., Ashland, OH. Sponsored by the Lyondell Chemical Company, Houston,
* TX.

F020 1499

EOR

F002 9

F010 5.8.2

F004 2

F005 RL

F006 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F007 Guideline, GLP study. No circumstances occurred that would have affected
* the quality and integrity of the data.

F020 1498

EOR

F002 9

F010 5.8.2

F004 2

F005 RS

F006 Maternal Toxicity LOAEL - 10 mg/kg bwt/day, NOAEL - <10 mg/kg bwt/day

**

** Developmental Toxicity LOAEL - 35 mg/kg bwt/day, NOAEL - 10 mg/kg bwt/day

**

** The developmental toxicity observed was limited to an increased frequency
* of total litter loss

F007 Maternal Toxicity LOAEL - 10 mg/kg bwt/day, NOAEL - <10 mg/kg bwt/day

**

** Developmental Toxicity LOAEL - 35 mg/kg bwt/day, NOAEL - 10 mg/kg bwt/day

**

** The developmental toxicity observed was limited to an increased frequency
* of total litter loss in the 35 and 50 mg/kg bwt/day dose levels
* (2/group). In each instance of total litter loss, the dam experienced
* severe toxicity (loss of body weight, severe decreases in feed
* consumption, and evidence of significant liver toxicity). Signs of liver
* toxicity were noted in dams in the 10 mg/kg bwt/day group. One and six
* females from the 35 and 50 mg/kg bwt/day groups, respectively, died
* between gestation days 9 and 20. Despite the severe maternal toxicity
* observed, there were no test-article related increases in malformation
* rates or incidence of variations. Intrauterine growth and survival was
* not affected in the fetuses from dams that survived to necropsy.

**

** SURVIVAL AND CLINICAL SIGNS

** One and six females in the 35 and 50 mg/kg bwt/day groups, respectively,
* were found dead between gestation days 9-20. The following clinical
* observations were noted within 4 days for all females found dead:
* salivation and/or clear material on various body surfaces and wiping the

* mouth on the cage floor and/or walls at the daily examinations and/or 1
* hour following dose administration as a result of the irritant properties
* of the test article, signs of poor grooming as a result of declining
* health, including unkempt appearance and/or yellow, brown and/or red
* colored material on various body surfaces, behavioral findings indicative
* of moribundity, including extremities cool to the touch, rocking,
* lurching or swaying while walking and/or hypoactivity at the daily
* examinations and/or 1 hour following dose administration. One female had
* shallow respiration and several had decreased defecation.

**
** The following findings were noted at necropsy of the animals that died
* during the dosing period: distended stomach, dark red stomach contents
* and/or dark red areas on the stomach lining, white and yellow areas on
* the liver at necropsy, and (in one animal) an entirely resorbed litter.
* Based on all of the adverse maternal findings in the animals found dead
* in the 35 and 50 mg/kg bwt/day groups, all mortalities were considered
* test article-related. All other animals survived to the scheduled
* necropsy.

**
** At the time of dose administration, salivation was noted in several
* animals in the 35 and 50 mg/kg bwt/day groups, respectively. Excessive
* pawing of and/or mouth wiping on the cage floor and/or walls occurred in
* many of the animals in the 10, 35 and 50 mg/kg bwt/day groups,
* respectively, at the time of dosing. However, these findings were rarely
* observed 1 hour following dose administration. Lacrimation was observed
* in six females in the 50 mg/kg bwt/day group approximately 1 hour
* following dose administration. All of these clinical findings were
* attributed to the irritant properties of the test article. In addition,
* red, yellow and/or brown materials on various body surfaces were found in
* six females approximately 1 hour following dose administration in both
* the 35 and 50 mg/kg bwt/day groups.

**
** BODY WEIGHT AND FEED INTAKE

** All animals found dead had large body weight losses and reduced feed
* consumption within 2-4 days prior to death.

** Maternal body weight effects present in the 50 mg/kg bwt/day group
* included: maternal body weight loss of 12 g during gestation days 6-9
* compared to a mean body weight gain of 11 g in the control group.
* ($p < 0.05$) lower maternal body weights on gestation days 8-11 (5.3% to
* 8.5%) and continued to be slightly reduced (3.6% to 5.5%) throughout the
* remainder of the treatment period. ($p < 0.05$) Because many of the most
* severely affected animals in this group died by gestation day 11, mean
* body weight gain in this group was statistically significantly ($p < 0.05$)
* higher on gestation days 9-12 and similar to the control group on
* gestation days 12-20.

** Maternal body weight effects present in the 35 mg/kg bwt/day group
* included: maternal body weight loss of 4 g during gestation days 6-9
* compared to a mean body weight gain of 11 g in the control group.
* ($p < 0.01$) Mean maternal body weight gains in the 35 mg/kg bwt/day group
* were similar to the control group during gestation days 9-12, but
* statistically significantly ($p < 0.05$ or $p < 0.01$) reduced on gestation days
* 12-20 and when the entire treatment period (gestation days 6-20) was
* evaluated. The sustained reductions in mean body weight gain in the 35
* mg/kg bwt/day group were attributed to the continued survival of the
* animals most affected by test article administration. This trend was

* opposite that observed in the 50 mg/kg bwt/day group, where those animals
* most affected by test article administration died between gestation days
* 9 and 16, thus no longer contributing to the overall reduced mean body
* weight gains. As a result of the effects on mean body weight gain in the
* 35 mg/kg bwt/day group, mean body weights were reduced 4.0% to 7.6% on
* gestation days 16 to 20; the difference on gestation day 20 was
* statistically significant ($p < 0.05$).

**
** Mean maternal body weights, body weight gains, net body weight, and net
* body weight gain in the 10 mg/kg bwt/day group were similar to the
* control group.

**
** FEED CONSUMPTION

** A decrease ($p < 0.01$) in mean maternal feed consumption, (evaluated as
* g/animal/day and g/kg bwt/day), was noted for the 50 mg/kg bwt/day group
* during gestation days 6-9 and 9-12. Mean feed consumption in this group
* was similar to the control group when the entire treatment period
* (gestation days 6-20) was evaluated as a result of the deaths of the most
* severely affected animals by gestation day 16. Mean feed consumption
* measured as g/kg bwt/day was higher than the control group during
* gestation days 12-20. However, since mean feed consumption measured as
* g/animal/day was similar to the control group, this effect was attributed
* to the reduced body weights in this group.

** In the 35 mg/kg bwt/day group, a reduction ($p < 0.01$) in mean feed
* consumption was observed during gestation days 6-9, that corresponded to
* the reduced mean body weight gain in this group for the same interval.
* Mean feed consumption was lower ($p < 0.05$) on gestation days 9-12. Due to
* the mortality observed in this study and the number of animals not
* consuming an appreciable amount of feed, the staff veterinarian and the
* sponsor approved administration of supplemental feed (an approximately
* 50/50 mixture of Hills Prescription Diet canine feed and water) to all
* animals consuming less than 10 g per day. Reported feed consumption
* values include only the amount of basal feed consumed and do not include
* the amounts of supplemental diet administered. Supplementation of the
* diet with the prescription diet for six animals in the 35 mg/kg bwt/day
* group beginning on gestation day 14 allowed for mean feed consumption
* values to increase, albeit not to control values. There was a reduction
* ($p < 0.01$) in mean feed consumption (g/animal/day) noted in the 35 mg/kg
* bwt/day group when the entire treatment period (gestation days 6-20) was
* evaluated. Therefore, the lower feed consumption in the 35 mg/kg/day
* group relative to the 50 mg/kg bwt/day group during gestation days 12-20
* and 6-20 was attributed to the continued survival of the most affected
* animals in the 35 mg/kg bwt/day group due to dietary supplementation.

** Feed consumption in the 10 mg/kg bwt/day group was similar to that in the
* control group throughout gestation. Differences from the control group
* were slight and not statistically significant.

**
** MATERNAL NECROPSY DATA

** One and six females in the 35 and 50 mg/kg bwt/day groups, respectively,
* were found dead between gestation days 9-20. The one female in the 35
* mg/kg bwt/day group had white and yellow areas on all lobes of the liver
* and an entirely resorbed litter (all early resorptions). Three of the
* females that died in the 50 mg/kg bwt/day group had a distended stomach,
* dark red stomach contents, and/or dark red areas on the stomach lining.
* These stomach findings were attributed to the irritant properties of the

* test article. All animals found dead had severe mean body weight losses
* and reduced food consumption within 2-4 days prior to death.

**
* At the scheduled necropsy on gestation day 20, 11 of the surviving 24 and
* 12 of the surviving 19 females in 35 and 50 mg/kg bwt/day groups,
* respectively, had test article-related liver findings, including yellow
* and/or white areas on the liver, liver adhesions and/or misshapen or
* mottled livers. Of the animals with liver findings, one female each in
* the 35 and 50 mg/kg bwt/day groups had an enlarged spleen and two females
* in the 35 mg/kg bwt/day group had a thickened pericardium and/or
* pericardium adhesions, one of which also had white discoloration of the
* heart. One female in the 10 mg/kg bwt/day group had yellow areas on the
* liver. The yellow areas on the liver were considered to be test
* article-related because this finding was observed at a higher incidence
* in the 35 and 50 mg/kg bwt/day groups but was not observed in any control
* group females.

**
** MATERNAL ORGAN WEIGHTS

** Test article-related increases in mean liver weights (5.4% and 11.6%)
* were observed in the 35 and 50 mg/kg bwt/day groups, respectively, when
* compared to the control group. The increased liver weights correlated
* with the macroscopic liver findings observed in these two groups. No test
* article-related effects mean liver weight was noted in the 10 mg/kg
* bwt/day group.

**
** GESTATION DAY 20 LAPAROHYSTERECTOMY DATA

** Test article-related increases (not statistically significant) in the
* mean litter proportions of postimplantation loss (early resorptions) were
* observed in the 35 and 50 mg/kg bwt/day groups (16.2% and 14.3% per
* litter, respectively) compared to the control group value (6.9% per
* litter). These values also exceeded the maximum value in the laboratory
* historical control data (8.6% per litter). Corresponding reductions in
* the mean litter proportion of viable fetuses were also observed in the 35
* and 50 mg/kg bwt/day groups. The increased postimplantation loss in these
* two groups was primarily attributed to two female rats in each of the 35
* mg/kg bwt/day and 50 mg/kg bwt/day groups that had entirely resorbed
* litters. These animals also had test article-related effects in mean body
* weight gains during the treatment period. The mean litter proportion of
* postimplantation loss was unaffected by test article administration in
* the 10 mg/kg bwt/day group.

**
* Overall mean fetal weight was slightly reduced (3.4 g) in the 35 mg/kg
* bwt/day group when compared to the control group (3.6 g). However, this
* was primarily due to one female rat that had a drastically reduced mean
* fetal weight (1.7 g) and also resorbed 39% of its litter. This dam also
* had a large body weight loss over the entire treatment period. Due to
* these factors as well as the lack of a dose response across groups, the
* reduction in mean fetal weight in the 35 mg/kg bwt/day group was not
* considered to be a direct effect of test article administration. Mean
* fetal weight in the 10 and 50 mg/kg bwt/day groups was unaffected by test
* article administration.

**
* Other parameters evaluated, including mean live litter size, fetal sex
* ratios and numbers of corpora lutea and implantation sites, were similar
* to the control group values at all dose levels.

**
** FETAL MORPHOLOGICAL DATA

** The numbers of fetuses (litters) available for morphological evaluation
* were 387(25), 406(24), 296(19) and 241(16) in the control, 10, 35 and 50
* mg/kg bwt/day groups, respectively. Malformations were observed in 0(0),
* 2(2), 1(1) and 0(0) fetuses (litters) in these same respective dose
* groups and were considered spontaneous in origin. When the total
* malformations (0.0%, 0.5%, 0.5% and 0.0% per litter) and developmental
* variations (37.6%, 37.5%, 41.2% and 40.9% per litter) were evaluated on a
* proportional basis in the control, 10, 35 and 50 mg/kg bwt/day groups,
* respectively, no statistically significant differences from the control
* group were noted. Fetal malformations and developmental variations, when
* observed in the test article-treated groups, occurred infrequently or at
* a frequency similar to that in the control group, did not occur in a
* dose-related manner and/or were within the laboratory historical control
* data ranges. Based on these data, no fetal malformations or
* developmental variations were attributed to the test article.

F020 1495

EOR

F002 9

F010 5.8.2

F004 2

F005 TS

F006 Allyl alcohol; 99.4%

F007 Allyl alcohol; 99.4%

F020 1496

EOB

C

X

INFORMATION TECHNOLOGY SUPPORT BRANCH (ITSB)

MAY, 2005

1. OD review and approval the website's accountability and access Authorization Reports (due around May time frame)
2. Implementation of NDPS (this is now an Agency requirement)
3. Implementation of Zenworks on the Admin LAN (this is now an Agency requirement)
 - A. Install the client software on users desktops
4. Monitor remote AAA / IPAS
5. Update Coop's laptops
6. Run monthly BINDVIEW Reports
7. Reserve/Schedule/Monitor/Maintenance the OPPT Training Room
8. Update CBI's Notes application servers
9. Update the Domino Directory (working with division AOs) to clean up division email account
10. Implementation of Asset Management
11. IT Coordinators meeting
12. HP printer assessment
13. Plan for Active Directory (this is now an Agency requirement)
14. Surplus equipment

JUNE, 2005

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Implement LAN printers and Laptops policies
4. Update the Domino Directory (working with division AOs) to clean up division email account
5. IT Coordinators meeting
6. Establish new and update existing SOPs

JULY, 2005

1. Complete GX-280 PCs installations
2. Run monthly BINDVIEW Reports
3. Monitor remote AAA / IPAS
4. Update the Domino Directory (working with division AOs) to clean up division email account
5. Surplus equipment
6. IT Coordinators meeting
7. Establish new and update existing SOPs

AUGUST, 2005

1. Plan and order new PCs (25% annual replacement)
2. Run monthly BINDVIEW Reports
3. Monitor remote AAA / IPAS
4. Update the Domino Directory (working with division AOs) to clean up division email account
5. Renew CISCO switches
6. Renew Oracle's servers and desktops licenses
7. Surplus equipment
8. Run Asset Management Reports
9. Run Bank Card Reports
10. IT Coordinators meeting
11. Establish new and update existing SOPs
12. Implementation of Active Directory (this is now an Agency requirement)

SEPTEMBER, 2005

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Run Asset Management Reports
4. Plan for FY06/07 Central IT Budget
5. Submit new Service Agreement to obtain contractor support via WCF (due 09/30/05)
6. Update the Domino Directory (working with division AOs) to clean up division email account
7. IT Coordinators meeting
8. Establish new and update existing SOPs
9. Update Coop's laptops
10. Refresh Network Printers across OPPT (September - October)
11. Surplus equipment
12. IT role-based training for ITSB staff

OCTOBER, 2005

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Update the Domino Directory (working with division AOs) to clean up division email account
4. IT Coordinators meeting
5. Establish new and update existing SOPs
6. Refresh Network Printers across OPPT (September - October)
7. Division ITC retreat (tentative schedule 10/30)
8. Surplus equipment

9. IT role-based training for ITSB staff
10. Begin to plan for the Next PC roll out
11. Quality Assurance/Maintenance Schedule for laptops across OPPT (**January, April, July and October**)

NOVEMBER, 2005

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS INDVIEW Report
3. Update the Domino Directory (working with division AOs) to clean up division email account
4. IT Coordinators meeting
5. Establish new and update existing SOPs
6. Surplus equipment
7. IT role-based training for ITSB staff
8. Adobe Acrobat (version 7.0) upgrade across OPPT
9. SIB collaboration needed – VM Ware and MS Terminal Service.

DECEMBER, 2005

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Run Asset Management Reports (Cycle is TBD)
4. Update the Domino Directory (working with division AOs) to clean up division email account
5. Run Bank Card Reports
6. IT Coordinators meeting
7. Establish new and update existing SOPs
8. Surplus equipment
9. IT role-based training for ITSB staff
10. Adobe Acrobat (version 7.0) upgrade across OPPT
11. SIB collaboration needed – VM Ware and MS Terminal Service.

JANUARY, 2006

1. Run monthly BINDVIEW Reports
2. Run Asset Management Reports (quarterly)
3. Monitor remote AAA / IPAS
4. Update the Domino Directory (working with division AOs) to clean up division email account
5. IT Coordinators meeting

6. Go-learn training for branch staff
7. Establish new and update existing SOPs
8. Update Coop's laptops
9. Surplus equipment
10. IT role-based training for ITSB staff
11. Yearly assessment on IT products:
 - a. Desktops
 - b. Servers
 - c. Software
 - d. Network printers
 - e. MFPs
 - f. Voice over IP
 - g. Backup solutions
 - h. Laptops
 - i. Portable peripherals (i.e. printer, scanners)
12. SIB collaboration needed – VM Ware and MS Terminal Service.

FEBRUARY, 2006

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Update the Domino Directory (working with division AOs) to clean up division email account
4. Surplus all old equipment
5. IT Coordinators meeting
6. Go-learn training for branch staff
7. Establish new and update existing SOPs
8. Surplus equipment
9. IT role-based training for ITSB staff
10. SIB collaboration needed – VM Ware and MS Terminal Service.

MARCH, 2006

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Update the Domino Directory (working with division AOs) to clean up division email account
4. IT Coordinators meeting
5. Go-learn training for branch staff
6. Establish new and update existing SOPs
7. Surplus equipment
8. IT role-based training for ITSB staff

9. SIB collaboration needed – VM Ware and MS Terminal Service.

APRIL, 2006

1. Run monthly BINDVIEW Reports
2. Monitor remote AAA / IPAS
3. Run Asset Management Reports (quarterly)
4. Update the Domino Directory (working with division AOs) to clean up division email account
5. IT Coordinators meeting
6. Go-learn training for branch staff
7. Establish new and update existing SOPs
8. Surplus equipment
9. IT role-based training for ITSB staff
10. SIB collaboration needed – VM Ware and MS Terminal Service.

MAY, 2006

1. OD review and approval the website's accountability and access Authorization Reports (due around May time frame)
2. Run monthly BINDVIEW Reports
3. Monitor remote AAA / IPAS
4. Update the Domino Directory (working with division AOs) to clean up division email account
 - a. Take this opportunity to clean up all interns; contractors' notes accounts so that they won't show up on the IT training roster.
5. IT Coordinators meeting
6. Go-learn training for branch staff
7. Establish new and update existing SOPs
8. Update Coop's laptops
9. Surplus equipment
10. IT role-based training for ITSB staff
11. SIB collaboration needed – VM Ware and MS Terminal Service.