アクロレインのラットを用いた吸入によるがん原性試験報告書

試験番号：0816

APPENDICES

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APPENDIX 1-1

IDENTITY OF ACROLEIN IN THE 2-YEAR INHALATION STUDY

IDENTITY OF ACROLEIN IN THE 2-YEAR INHALATION STUDY

Test Substance : Acrolein (Tokyo Chemical Industry Co., Ltd.)

Lot No. : FNRHH

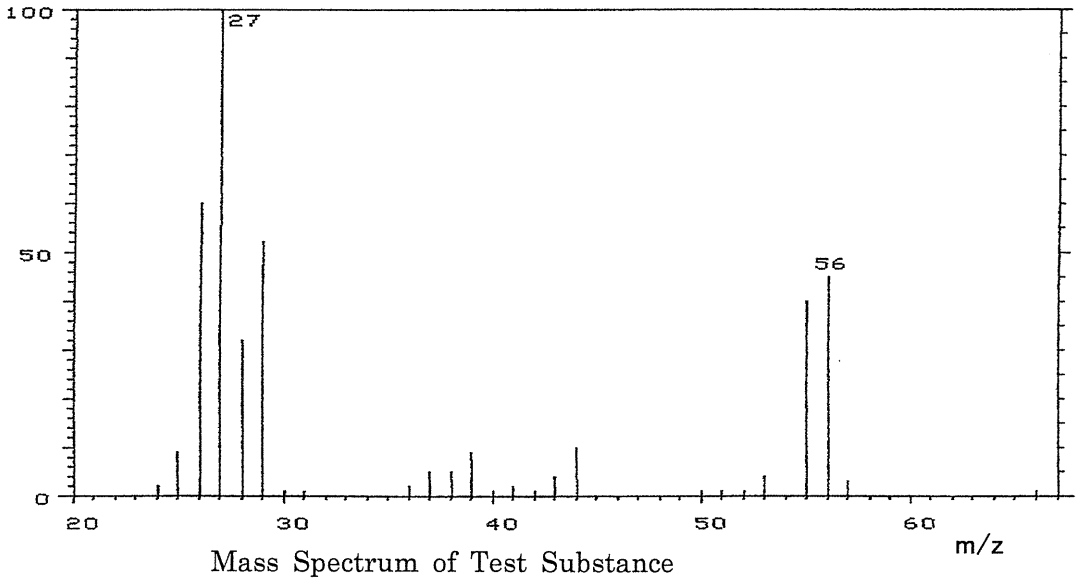
1. Spectral Data

Mass Spectrometry

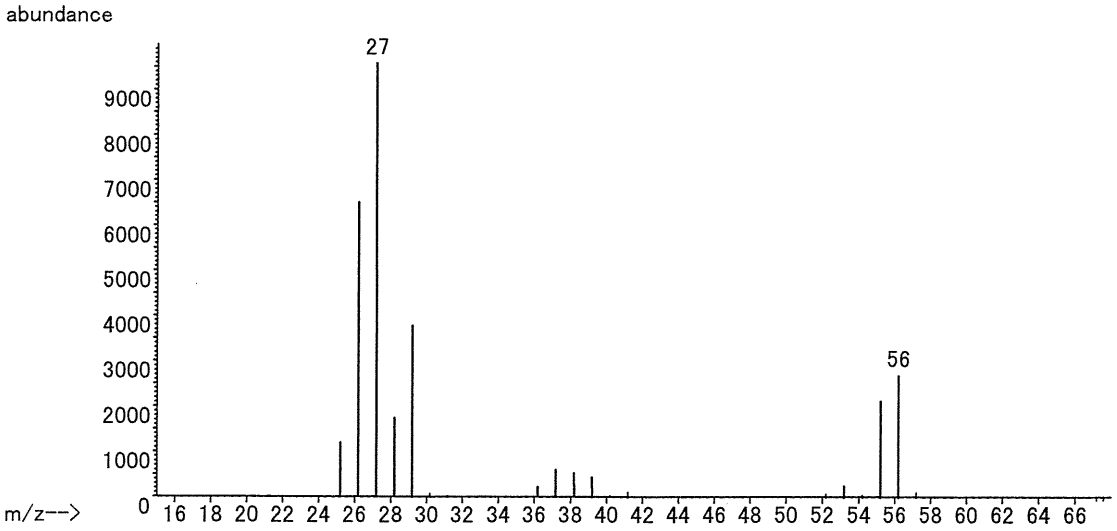
Instrument : Hitachi M-80B Mass Spectrometer

Ionization : EI (Electron Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Test Substance



Mass Spectrum of Literature Data*

Result: The mass spectrum was consistent with literature spectrum.
(*McLafferty FW, ed. 1994. Wiley Registry of Mass Spectral Data. 6th ed. New York, NY:John Wiley and Sons.)

2. Conclusion: The test substance was identified as acrolein by mass spectrum.

2. Impurity

Instrument : Agilent Technologies 5890A Gas Chromatograph

Column : INNOWAX (0.53 mmϕ × 60 m)

Column Temperature: 60° C

Flow Rate : 10 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Sample Name	Peak No.	Area (%)	Peak Name
Test Substance	1	1.42	Acetaldehyde
	2	98.58	Acrolein

Result: Gas chromatography indicated one major peak (peak No. 2) and one impurity. The impurity (peak No. 1) was identified as acetaldehyde by comparing GC-MS with that of standard sample. The amount of acetaldehyde in the test substance was 1.42% (The quantity value by the standard sample was 1.37%.) with a gas chromatograph.

3. Conclusion: The test substance was identified as acrolein by mass spectrum. Gas chromatography indicated one major peak (acrolein) and one impurity. The impurity was acetaldehyde in the test substance.

APPENDIX 1-2

STABILITY OF ACROLEIN IN THE 2-YEAR INHALATION STUDY

STABILITY OF ACROLEIN IN THE 2-YEAR INHALATION STUDY

Test Substance : Acrolein (Tokyo Chemical Industry Co., Ltd.)

Lot No. : FNRHH

1. Gas Chromatography

Instrument : Agilent Technologies 5890A Gas Chromatograph

Column : INNOWAX (0.53 mmϕ × 60 m)

Column Temperature: 60° C

Flow Rate : 10 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
2013.02.01	1	2.005	1.42
	2	2.668	99.58
2015.02.23	1	1.997	1.28
	2	2.640	98.72

Result: Gas chromatography indicated one major peak (peak No.2) and one impurity (peak No. 1 < 2.0% of total area) analyzed on 2013.2.1 and one major peak (peak No.2) and one impurity (peak No. 1 < 2.0% of total area) analyzed on 2015.2.23. No new trace impurity peak in the test substance analyzed on 2015.2.23 was detected.

2. Conclusion: The test substance was stable for the period that the test substance had been used for the study.

APPENDIX 2

ENVIRONMENTAL CONDITIONS OF INHALATION CHAMBER IN THE 2-YEAR INHALATION STUDY OF ACROLEIN

ENVIRONMENTAL CONDITIONS OF INHALATION CHAMBER
IN THE 2-YEAR INHALATION STUDY OF ACROLEIN

Group Name	Temperature (℃) Mean ± S.D.	Humidity (%) Mean ± S.D.	Ventilation Rate (L/min) Mean ± S.D.	Air Change (time/h) Mean
Control	22.9 ± 0.2	54.9 ± 1.4	1516.5 ± 10.2	12.0
0.1 ppm	23.0 ± 0.2	54.8 ± 1.5	1516.1 ± 10.1	12.0
0.5 ppm	23.2 ± 0.2	54.3 ± 1.5	1514.2 ± 11.8	12.0
2 ppm	23.1 ± 0.2	54.8 ± 1.0	1517.4 ± 11.4	12.0

APPENDIX 3

METHODS, UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-YEAR INHALATION STUDY OF ACROLEIN

METHODS, UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-YEAR INHALATION STUDY OF ACROLEIN

Item	Method	Unit	Decimal place
Hematology			
Red blood cell (RBC)	Light scattering method [1]	$\times 10^6/\mu L$	2
Hemoglobin(Hgb)	Cyanmethemoglobin method [1]	g/dL	1
Hematocrit(Hct)	Calculated as RBC×MCV/10 [1]	%	1
Mean corpuscular volume(MCV)	Light scattering method [1]	fL	1
Mean corpuscular hemoglobin(MCH)	Calculated as Hgb/RBC×10 [1]	pg	1
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as Hgb/Hct×100 [1]	g/dL	1
Platelet	Light scattering method [1]	$\times 10^3/\mu L$	0
Reticulocyte	Light scattering method [1]	%	1
White blood cell(WBC)	Light scattering method [1]	$\times 10^3/\mu L$	2
Differential WBC	Light scattering method [1]	%	0
Biochemistry			
Total protein(TP)	Biuret method [2]	g/dL	1
Albumin (Alb)	BCG method [2]	g/dL	1
A/G ratio	Calculated as Alb/(TP−Alb) [2]	−	1
T-bilirubin	BOD method [2]	mg/dL	2
Glucose	GlcK・G-6-PDH method [2]	mg/dL	0
T-cholesterol	CE・COD・POD method [2]	mg/dL	0
Triglyceride	MGLP・GK・GPO・POD method [2]	mg/dL	0
Phospholipid	PLD・ChOD・POD method [2]	mg/dL	0
Aspartate aminotransferase (AST)	JSCC method [2]	U/L	0
Alanine aminotransferase (ALT)	JSCC method [2]	U/L	0
Lactate dehydrogenase (LDH)	JSCC method [2]	U/L	0
Alkaline phosphatase (ALP)	JSCC method [2]	U/L	0
γ-Glutamyl transpeptidase (γ-GTP)	JSCC method [2]	U/L	1
Creatine kinase (CK)	JSCC method [2]	U/L	0
Urea nitrogen	Urease・GLDH method [2]	mg/dL	1
Creatinine	Creatinase・SOD・POD method [2]	mg/dL	2
Sodium	Ion selective electrode method [2]	mEq/L	0
Potassium	Ion selective electrode method [2]	mEq/L	1
Chloride	Ion selective electrode method [2]	mEq/L	0
Calcium	OCPC method [2]	mg/dL	1
Inorganic phosphorus	PNP・XOD・POD method [2]	mg/dL	1

1) Automatic blood cell analyzer (ADVIA120 : Siemens Healthcare Diagnostics Inc.)
2) Automatic analyzer (Hitachi 7080 : Hitachi,Ltd.)