

BIO-MEDICAL RESEARCH
DOCUMENT DESCRIPTION FORM

R&S 108128

Duplicate in all cards: →

63 68 69 76
1980 0000173

77 78
VC
Sub-Index
Code

year as-1961-

File number
[Right justify
[Numeric only]

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KARLINSKI, R	SPITZ, R	NIOSH		11
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Title of Report; end with space-hyphen-hyphen-space. Follow with Index Terms,
separated from each other with comma-space. Avoid other punctuation;
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N103M
JUNE, 1980

TABLE 1
REPORTED CASES OF ANGIOSARCOMA OF THE LIVER AMONG
VINYL CHLORIDE POLYMERIZATION WORKERS

0000173

R&S 108129

COUNTRY	CASE NO.	BIRTH DATE	1ST VC OR PVC EXP.	DX SARCOMA	AGE AT DX	YEARS TO DX	TOT. YRS. OF EXP.	DATE OF DEATH
BELGIUM	01*	01-12-13	07-00-58	05-00-76	63	18	17	06-29-76
CANADA	01*	12-15-13	00-00-44	00-00-55	41	11	11	09-02-55
CANADA	02*	03-06-14	00-00-43	00-00-57	43	14	14	12-21-57
CANADA	03*	08-26-19	00-00-41	00-00-62	42	21	20	03-22-62
CANADA	04*	04-05-19	00-00-45	00-00-67	48	22	22	01-21-68
CANADA	05*	05-07-11	00-00-44	00-00-68	57	24	05	07-03-68
CANADA	06*	12-15-19	00-00-47	00-00-71	51	24	23	04-10-71
CANADA	07*	11-09-19	00-00-46	00-00-72	53	26	25	12-24-72
CANADA	08*	05-13-20	00-00-61	00-00-73	53	12	05	06-12-73
CANADA	09*	07-19-21	00-00-46	00-00-74	53	28	26	09-04-74
CANADA	10*	05-16-15	00-00-53	00-00-76	61	23	14	04-00-77
CZECH	01*	00-00-28	00-00-57	00-00-73	46	16	16	00-00-74
CZECH	02*	00-00-26	00-00-51	00-00-66	40	15	15	00-00-66
FED. REP. GER.	01*	06-04-30	10-01-56	09-19-68	38	12	12	01-25-69
FED. REP. GER.	02*	07-26-31	10-14-57	09-25-70	39	13	12	12-14-71
FED. REP. GER.	04*	09-04-30	04-16-57	11-26-74	44	17	17	11-25-74
FED. REP. GER.	05*	01-01-32	12-16-62	00-00-75	43	13	12	01-09-75
FED. REP. GER.	07*	09-29-26	00-15-54	11-12-75	49	21	12	11-13-75
FED. REP. GER.	08*	10-19-17	04-19-54	00-00-75	58	22	21	12-25-75
FED. REP. GER.	09*	12-13-34	12-02-59	06-16-76	42	17	15	03-24-78
FED. REP. GER.	10*	07-25-29	10-10-55	06-28-77	47	22	22	06-28-77
FED. REP. GER.	11*	12-29-34	01-02-61	00-00-77	41	16	10	03-07-77
FED. REP. GER.	12*	06-14-38	04-01-61	00-00-77	39	16	06	10-07-77
FED. REP. GER.	13*	08-03-29	10-19-53	10-09-78	49	25	20	10-23-78
FED. REP. GER.	14*	10-07-33	01-10-55	08-07-78	44	23	20	08-07-78
FED. REP. GER.	15*	06-06-37	11-01-61	08-14-78	41	16	11	08-28-78
FED. REP. GER.	16*	00-00-33	01-10-55	08-07-78	44	23	20	08-07-78
FED. REP. GER.	17*	00-00-37	11-01-61	08-14-78	41	16	11	08-28-78
FRANCE	01*	04-15-24	01-00-46	02-18-67	43	21	19	02-19-67
FRANCE	02*	08-03-11	07-06-59	01-08-75	63	15	12	01-24-75
FRANCE	03*	00-00-19	00-00-46	01-00-75	55	29	29	06-29-75
FRANCE	04*	01-27-27	10-19-49	01-04-76	49	26	26	01-04-76
FRANCE	05*	01-29-38	00-00-65	04-00-76	38	11	10	05-13-76
FRANCE	06*	04-14-34	00-00-58	09-00-76	42	18	17	09-12-76
FRANCE	07*	00-00-27	07-01-50	07-00-76	49	26	23	07-02-76
FRANCE	08*	04-01-34	05-23-57	12-03-76	42	19	19	01-30-77
FRANCE	09*	10-08-14	01-10-48	04-26-76	62	28	28	12-16-77
FRANCE	10*	05-26-19	12-24-56	01-10-78	58	21	21	01-10-78
FRANCE	11*	02-15-12	01-00-41	08-12-78	66	37	31	11-13-78
FRANCE	12*	08-16-14	02-09-49	05-00-79	65	30	27	06-23-79
FRANCE	13*	01-19-31	09-23-63	06-26-79	40	16	13	08-22-79
GREAT BRIT.	01*	04-20-01	04-04-48	12-00-72	71	28	22	12-03-72
GREAT BRIT.	03*	06-02-37	02-00-66	12-00-74	37	09	04	12-24-74
GREAT BRIT.	04*	06-23-20	04-26-54	06-00-79	59	25	18	10-12-79
GREAT BRIT.	05*	03-30-14	01-08-51	10-00-79	65	28	21	11-19-79
GREAT BRIT.	06*	00-00-31	00-00-62	01-09-80	49	18	12	01-09-80
ITALY	02*	11-13-29	00-00-57	12-13-72	43	15	06	12-00-72
ITALY	03*	03-14-20	00-00-53	07-10-75	55	22	21	07-10-75
JAPAN	01*	08-01-22	04-00-53	08-21-74	52	22	22	10-24-75
JAPAN	02*	08-02-39	11-00-58	08-10-76	37	18	13	08-10-76
NORWAY	01*	12-23-15	03-00-50	12-20-71	56	22	21	01-04-72
SWEDEN*	01*	06-23-27	08-10-51	08-00-74	43	19	18	10-20-70
SWEDEN	03*	06-10-10	05-00-47	03-19-76	65	29	21	03-19-76
SWEDEN	04*	11-18-14	00-00-46	05-12-77	62	31	31	05-12-77
U.S.A.	01*	10-17-23	12-09-48	03-03-73	49	24	21	03-03-73
U.S.A.	02*	08-19-33	11-15-55	05-00-70	37	14	13	09-23-71
U.S.A.	03*	05-25-15	11-23-45	12-19-73	58	28	29	12-19-73
U.S.A.	04*	01-15-24	07-06-52	08-19-67	43	15	15	01-07-68
U.S.A.	05*	01-25-12	08-19-44	04-09-64	52	20	20	04-09-64
U.S.A.	06*	11-23-28	01-17-62	02-00-74	46	12	12	07-24-75
U.S.A.	07*	05-03-22	08-27-44	00-00-68	45	24	17	03-23-68
U.S.A.	08*	05-06-20	10-07-46	08-00-61	41	15	15	08-29-61
U.S.A.	09*	11-08-31	05-28-45	03-01-74	43	29	24	03-00-75
U.S.A.	10*	08-16-13	06-12-51	05-00-68	55	17	17	05-10-68
U.S.A.	11*	05-27-09	10-14-46	03-00-70	61	23	23	03-16-70
U.S.A.	12*	11-17-18	09-13-49	05-02-69	50	20	19	05-02-69
U.S.A.	13*	12-01-21	12-11-42	05-00-74	52	32	26	07-04-74
U.S.A.	16*	11-04-27	05-08-50	00-00-69	41	19	04	03-27-69
U.S.A.	17*	05-08-31	06-23-55	10-11-74	43	19	19	ALIVE
U.S.A.	18*	04-22-28	09-15-54	03-00-75	46	21	11	11-02-75
U.S.A.	19*	00-00-15	00-00-43	08-19-75	60	32	22	04-08-76
U.S.A.	20*	08-31-17	00-00-55	01-30-76	58	21	18	01-30-77
U.S.A.	21*	09-02-09	12-00-46	00-00-77	67	30	21	01-02-77
U.S.A.	22*	10-02-23	07-11-57	01-00-76	52	29	28	12-04-76
U.S.A.	23*	00-00-23	09-08-58	04-06-73	50	15	14	04-06-73
U.S.A.	24*	05-07-17	00-00-39	05-27-77	60	38	26	05-27-77
U.S.A.	25*	08-07-10	02-00-47	03-10-77	67	30	20	03-10-77
U.S.A.	26*	07-07-23	10-23-47	00-00-77	52	28	16	02-11-75
U.S.A.	27*	05-11-16	07-01-41	11-30-78	62	37	27	11-25-78
U.S.A.	28*	04-11-17	08-30-44	11-03-78	61	34	28	11-03-78
YUG. SLAVIA	01*	10-12-37	05-00-42	03-00-40	72	38	16	03-01-80
YUG. SLAVIA	02*	04-05-14	02-00-53	04-08-73	59	20	20	04-08-73
YUG. SLAVIA	03*	06-11-30	12-13-58	09-03-78	48	20	18	09-03-78

TOTAL REPORTED CASES = 63

One case was microscopically confirmed
but the remaining 62 cases were confirmed as having cholangiosarcoma
because they had been diagnosed as having cholangiosarcoma
within 5 years of death. A reevaluation of the microscopic slides
confirmed the diagnosis of cholangiosarcoma in all 62 cases.



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL

0000173VC

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
ROBERT A. TAFT LABORATORIES
4676 COLUMBIA PARKWAY, CINCINNATI, OHIO 45226

December 19, 1980

T. R. Torkelson, Sc.D.
Dow Chemical U.S.A.
Health and Environmental Sciences
1803 Building
Midland, Michigan 48640

Dear Dr. Torkelson:

Your suggestion concerning the distribution of the NIOSH register of angiosarcomas among vinyl chloride workers is well taken. In the future, I shall routinely mail updates of this register to Dr. Stack, Mr. Lawrence, yourself and others who show interest in this list.

Enclosed are the most recent updates of Tables 1 and 2 of the NIOSH register. The only difference between this update of Table 1 and the one dated October, 1980 is that U.S. case 17 is no longer listed as alive. You will note that no changes have been made on Table 2 in the last couple of years.

Please call or write if you have any questions concerning these lists (513-684-3284).

Sincerely yours,

Rose Kaminski

Rose Kaminski
Statistician
Illness Effects Section
Surveillance Branch
Division of Surveillance, Hazard
Evaluations and Field Studies

Enclosures

CC Bob Dubre OC
LYMAN SKORY 1070
RALPH COCK 1403

R&S 108130

NIOSH
AUGUST, 1978

R&S 108131

TABLE 2

REPORTED CASES OF ANGIOSARCOMA OF THE LIVER AMONG
NON-POLYMERIZATION WORKERS EXPOSED TO VC

			1ST VC	DX	AGE	YEARS	TOT.	DATE	
	CASE	BIRTH	DR PVC	ANGIO-	AT	1ST EXP. YRS.	OF		
COUNTRY	NO.	DATE	EXP.	SARCOMA	DX	TO DX	EXP.	DEATH	
FED. REP. GER.	03*	07-16-30	06-09-52	03-00-73	43	21	14	10-10-73	NOTE 6
FED. REP. GER.	06*	05-09-36	04-02-60	00-00-74	38	14	03	12-16-74	NOTE 9
GREAT BRIT.	02*	09-08-14	00-00-46	02-00-70	55	24	11	12-00-70	NOTE 1
ITALY	01	06-15-34	00-00-65	04-19-71	36	06	03	04-16-71	NOTE 2&7
SWEDEN	02*	11-27-11	00-00-45	08-00-74	61	27	23	08-16-72	NOTE 3&1
U.S.A.	15*	00-00-25	00-00-00	07-00-72	47	00	00	02-15-73	NOTE 5
YUGOSLAVIA	02*	11-15-31	00-00-50	07-12-73	42	23	18	07-12-73	NOTE 3
YUGOSLAVIA	03*	12-21-31	06-04-54	01-11-76	45	22	22	01-11-76	NOTE 3

NOTE 1 - POURING PVC OIL MIXTURE ONTO FABRIC BASES,

NOTE 2 - PRODUCTION OF PVC SACKS,

NOTE 3 - PRODUCTION OF VINYL CHLORIDE,

NOTE 5 - ACCOUNTANT AT PLANT MAKING PVC FABRIC,

NOTE 6 - LOADING PESTICIDE CANS WITH VC PROPELLANT,

NOTE 7 - ANGIOSARCOMA INVOLVING LIVER, LUNG AND PERICARDIUM,

ALTHOUGH DIFFICULT TO DETERMINE, PRIMARY SITE SEEMS TO BE
PERICARDIUM.

NOTE 9 - ASSISTANT FACTORY CHEMIST,

NOTE 10 - THIS MAN WAS HEAVILY EXPOSED TO VCM IN AN OLD, INDOOR PLANT

***DIAGNOSIS WAS MICROSCOPICALLY CONFIRMED
"00"--INDICATES UNKNOWN DATA

0000173VC

TABLE 1
REPORTED CASES OF VITILIGO-CELL OF THE LIVER AMONG
VITILIGO-CELL POLYMERIZATION AGENTS

COUNTRY	CASE NO.	BIRTH DATE	1ST VC OR PVC EXP.	DX SARCOMA	AGE AT 1ST EXP.	YEARS TO DX	TOT. YRS. OF EXP.	DATE OF DEATH
BELGIUM	01*	01-12-13	07-00-54	05-00-75	63	18	17	06-29-76
CANADA	01*	12-15-13	00-00-44	00-00-55	41	11	11	09-02-55
CANADA	02*	01-06-14	00-00-43	00-00-57	43	14	14	12-21-57
CANADA	03*	03-26-19	00-00-41	00-00-62	42	21	20	03-22-62
CANADA	04*	04-05-19	00-00-45	00-00-67	48	22	22	01-21-68
CANADA	05*	05-07-11	00-00-40	00-00-68	57	24	05	07-05-68
CANADA	06*	12-15-19	00-00-47	00-00-71	51	24	23	04-10-71
CANADA	07*	11-09-19	00-00-48	00-00-72	53	24	25	12-24-72
CANADA	08*	05-13-20	00-00-61	00-00-73	53	12	05	06-12-73
CANADA	09*	02-19-21	00-00-76	00-00-78	53	28	28	09-04-78
CANADA	10*	05-16-15	00-00-00	00-00-76	61	23	14	04-00-77
CZECH	01*	00-00-24	00-00-00	00-00-73	46	16	16	09-00-78
CZECH	02*	00-00-26	00-00-51	00-00-66	40	15	15	00-00-66
FED. REP. GER.	01*	06-04-30	10-01-56	07-19-68	38	12	12	01-25-69
FED. REP. GER.	02*	07-26-31	10-14-57	05-70	39	13	12	12-10-71
FED. REP. GER.	03*	09-04-30	04-16-57	00-74	44	17	17	11-25-74
FED. REP. GER.	04*	01-01-32	12-10-62	00-75	43	13	12	01-09-75
FED. REP. GER.	07*	09-29-26	04-15-54	11-12-75	49	21	12	11-13-75
FED. REP. GER.	08*	10-19-17	04-19-54	00-00-75	58	22	21	12-25-75
FED. REP. GER.	09*	12-13-34	12-02-59	06-16-76	42	17	15	03-24-78
FED. REP. GER.	10*	07-25-29	10-10-55	06-28-77	47	22	22	06-28-77
FED. REP. GER.	11*	12-29-36	01-02-61	00-00-77	41	16	10	03-07-77
FED. REP. GER.	12*	06-14-38	04-01-61	00-00-77	39	16	06	10-07-77
FED. REP. GER.	13*	05-03-29	10-19-53	10-09-78	49	25	20	10-23-78
FED. REP. GER.	15*	06-04-37	11-01-61	08-14-78	41	16	11	08-26-78
FED. REP. GER.	16*	00-00-33	01-10-55	08-07-78	44	23	20	08-07-78
FED. REP. GER.	17*	00-00-37	11-01-61	08-14-78	41	16	11	08-28-78
FRANCE	01*	04-15-24	01-00-46	02-18-67	43	21	19	02-19-67
FRANCE	02*	06-03-11	07-06-59	01-08-75	63	15	12	01-24-75
FRANCE	03*	00-00-19	00-00-48	01-00-75	55	29	29	06-29-75
FRANCE	04*	01-27-27	10-19-49	01-04-76	49	26	26	01-04-76
FRANCE	05*	01-29-38	00-00-45	04-00-76	38	11	10	05-13-76
FRANCE	06*	04-14-34	00-00-54	09-00-76	42	18	17	09-12-76
FRANCE	07*	00-00-27	07-01-50	07-00-76	49	26	23	07-02-76
FRANCE	08*	04-01-34	05-23-57	12-03-76	42	19	19	01-30-77
FRANCE	09*	10-08-14	01-10-48	04-26-78	52	28	28	12-16-77
FRANCE	10*	05-26-19	12-24-56	01-10-78	58	21	21	01-10-78
FRANCE	11*	02-15-12	01-00-41	08-12-78	66	37	31	11-13-78
FRANCE	12*	08-16-14	02-09-49	05-00-79	65	30	27	06-21-79
FRANCE	13*	01-19-31	09-23-63	06-26-79	40	16	13	08-22-79
GREAT BRIT.	01*	04-29-01	04-00-48	12-00-72	71	28	22	12-03-72
GREAT BRIT.	03*	06-02-37	02-00-66	12-00-74	37	09	04	12-24-74
GREAT BRIT.	04*	06-23-20	04-26-54	06-00-79	59	25	18	10-12-79
GREAT BRIT.	05*	01-30-14	01-00-51	10-00-79	65	28	21	11-19-79
GREAT BRIT.	06*	00-00-31	00-00-62	01-09-80	49	18	12	01-09-80
ITALY	02*	11-13-29	00-00-57	12-13-72	43	15	06	12-00-72
ITALY	03*	03-14-20	00-00-53	07-10-75	55	22	21	07-10-75
JAPAN	01*	05-01-22	04-00-53	08-21-74	52	22	22	10-24-75
JAPAN	02*	08-02-39	11-00-58	08-10-76	37	18	13	08-10-76
NORWAY	01*	12-23-15	03-00-50	12-20-71	56	22	21	01-04-72
SWEDEN	01*	06-23-27	08-14-51	08-00-74	43	19	18	10-20-70
SWEDEN	02*	06-14-10	05-00-47	03-19-76	45	29	21	03-19-76
SWEDEN	04*	11-16-14	00-00-46	05-12-77	62	31	31	05-12-77
U.S.A.	01*	10-17-23	12-09-48	03-03-73	49	24	21	03-03-73
U.S.A.	02*	08-19-33	11-15-55	05-00-70	37	14	13	09-24-71
U.S.A.	03*	05-25-15	11-28-45	12-19-73	58	28	28	12-19-73
U.S.A.	04*	01-15-24	07-06-52	09-19-67	43	15	15	01-07-68
U.S.A.	05*	01-25-12	06-19-44	04-09-64	52	20	20	04-09-64
U.S.A.	06*	11-23-28	01-17-62	02-00-74	46	12	12	07-24-75
U.S.A.	07*	05-03-22	08-27-44	02-00-68	45	24	17	03-23-68
U.S.A.	08*	05-06-20	10-07-66	08-00-61	41	15	15	08-29-61
U.S.A.	09*	11-08-31	05-28-45	03-01-74	43	29	24	03-01-75
U.S.A.	10*	08-16-13	04-12-51	05-00-68	55	17	17	05-10-68
U.S.A.	11*	05-27-09	10-10-46	03-00-70	61	23	23	03-16-70
U.S.A.	12*	11-17-19	09-13-49	05-02-69	50	20	19	05-02-69
U.S.A.	13*	12-01-21	12-11-42	05-00-74	52	32	26	07-04-74
U.S.A.	14*	11-04-27	05-08-50	00-00-69	41	19	04	03-27-69
U.S.A.	17*	05-06-31	06-23-55	10-11-74	43	19	19	00-00-74
U.S.A.	18*	04-22-28	09-15-54	00-00-75	46	21	11	11-02-75
U.S.A.	19*	00-00-15	00-00-43	04-19-75	40	32	22	04-06-76
U.S.A.	20*	08-31-17	00-00-55	01-30-76	54	21	18	01-30-77
U.S.A.	21*	09-02-09	12-00-46	00-00-72	67	33	21	01-02-72
U.S.A.	22*	10-02-23	07-11-47	01-00-76	52	29	25	12-04-76
U.S.A.	23*	00-30-23	09-02-58	04-06-73	50	15	14	04-06-73
U.S.A.	24*	05-07-17	00-00-39	05-27-77	60	38	26	05-27-77
U.S.A.	25*	07-02-23	10-03-47	00-00-77	52	28	18	02-11-75
U.S.A.	27*	05-11-16	07-01-41	11-30-78	62	37	27	11-25-78
U.S.A.	28*	04-11-12	08-03-44	11-03-78	61	34	28	11-03-78
U.S.A.	29*	10-12-07	05-00-42	03-00-80	72	38	16	03-01-80
YUGOSLAVIA	01*	04-05-14	00-00-53	04-08-73	59	20	20	04-08-73
YUGOSLAVIA	04*	06-11-30	12-15-58	09-03-78	48	20	18	09-03-78

TOTAL REPORTED CASES = 81

*DIAGNOSIS WAS MICROSCOPICALLY CONFIRMED

**INDICATES UNKNOWN DATA

* THIS CASE WAS LATER DIAGNOSED AS HAVING CHOLANGIOCARCINOMA.

* THIS CASE WAS CONFIRMED 4 YEARS AFTER DEATH THROUGH A REEVALUATION OF THE MICROSCOPIC SLIDES.

DIAGNOSIS AT AUTOPSY WAS PRIMARY LIVER CANCER.