

1803 BUILDING
March 18, 1986

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In order to avoid duplicating of the entire report, only part of the preface and Tables 1, 2, 3 and 4A are attached from the 51 page report.

The complete report will be filed in 1803 Building.



T. R. Torkelson

C O N F I D E N T I A L

REGISTER OF CASES OF ANGIOSARCOMA OF THE LIVER DUE TO EXPOSURE TO VINYL CHLORIDE - REVIEW DATE 1 JANUARY 1986

P R E F A C E : Acknowledgments, significant changes and comments

1. The new cases in the Register are the following :

France	18
Germany	23, 24, 25, 26, 27
UK	11, 12
2. There are amendments from the previous Register against the following cases: Germany 21, 22 US 36, 38
3. I would like to thank Dr De Sloover, Dr D M J Williams and Dr Friedel for informing me of new cases.
4. For the case corrections I would like to thank Dr Friedel, Mr J T Barr and Mr R W Frase.
5. For other corrections and information, thanks to Dr D Forman, Mr J T Barr, Mr T H Sutherland and Mr N F Humphry.
6. I should be very grateful if all recipients of the Register could continue to keep me fully informed of any new cases, or, if they should hear of other Companies who have acquired a case of ASL, it would be much appreciated if I could be notified by the appropriate person.

It is extremely helpful if new information is supplied in tabulated form, using the headings in the Register as far as possible.
7. I would like to thank the many people who have suggested research topics, and should be grateful if I could be kept up to date.
8. I shall be happy to supply to any recipient of the Register a copy of the Paper "Exposure to Vinyl Chloride and Angiosarcoma of the Liver: a report of the Register of cases" by Dr David Forman, myself, Dr John Stafford and Sir Richard Doll, published in the British Journal of Industrial Medicine, November 1985 (42: 750-753)

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LIVER ANGIOSARCOMA CASES (REVIEW DATE - 1 JANUARY 1986)

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Incidence of ASL Cases Per AnnumBy date of death

1955	1
6	0
7	1
8	0
9	0
1960	0
1	1
2	1
3	0
4	2
5	0
6	0
7	1
8	5
9	3
1970	2
1	3
2	5
3	8
4	5
5	11
6	11
7	9
8	10
9	5
1980	10
1	5
2	2
3	9
4	5
5	2
Total	
117	

N.B. 1 Does not include Italian 01 but does include German 03.

2 The 1977 total includes US case 24 which is a Cholangiosarcoma.

3 The 1982 total does not include US 33 and F 15 who are alive.

4 The 1983 total does not include US 36 who is alive.

*1980 Corrected as per letter of
March 6, 1986, The Italian
117. TAT*

Distribution of ASL Cases by Country

USA	35 ***
W Germany	26 **
France	18 ***
UK	11
Canada	10
Sweden	5 ****
Yugoslavia	4 *****
Italy	4 *
Czechoslovakia	2
Japan	2
Belgium	2
Norway	1
	—
Total	120
	—

* Omit It01 - atypical case of PVC bag extruder.

** Includes GE03 aerosol can filler.

*** Includes case US 24 which was diagnosed as Cholangiosarcoma & US 33, and 36; and F 15 who are alive.

**** Includes one monomer worker.

***** Includes two monomer workers.

i.e Western Europe	67
North America	45
Rest of World	8

—
Total 120
—

TABLE 3Pattern of ASL Cases by Factory(a) W Europe

Of the 67 cases in W Europe, 57 have occurred in clusters at 11 factories. Of the 26 German cases, 23 have occurred in clusters at 4 factories.

	<u>ASL Cases</u>
Dynamit, Troisdorf, Germany	11
Chloe Chimie (Formerly RP), St Fons, France	8
BP, Barry, UK	8
Wacker, Burghausen, Germany	7
Kemanord, Sundsvall, Sweden	5
PCUK, Brignoud, France	5
CWH, Marl, Germany	3
ICI, Hillhouse, UK	3
Solvay, Tavaux, France	3
Lonza, Waldshut, Germany	2
Solvay, Jemeppe, Belgium	2
	<u>57</u>

NB: There are 32 pre 1962 PVC plants in W Europe; 18 of these have had ASL cases (Ref Table 8)

(b) N America

Of the 45 cases in N America, 38 have occurred at four factories out of a total of 54 factories:- In N America 43 plants have not had ASL cases.

	<u>ASL Cases</u>
BFG, Louisville, US	14
BFG, Shawinigan, Canada	10
UCC, S Charleston	10
Goodyear, Niagara	4
	<u>38</u>

NB: There are 28 pre 1962 PVC plants in N America; 11 of these have had ASL cases (Ref Tables 9 & 10)

(c) Rest of World

The 8 ASL cases are believed to be in 1 cluster of 4 and 2 clusters of 2 cases.

TABLE 4A

Latency Periods (Years from first Exposure to Diagnosis)

	<u>Country</u>	<u>No of Cases</u>	<u>Total Years</u>	<u>Average</u>
<u>W Europe</u>	Belgium	2	35	17.5
	France	18	459	25.5 *
	Germany	26	495	19.04 *
	Italy	4	74	18.5
	Norway	1	22	22
	Sweden	5	122	24.5
	UK	<u>11</u>	<u>254</u>	23.09 *
		<u>67</u>	<u>1461</u>	21.80
<u>N America</u>				
	US	35	886	25.31 *
	Canada	<u>10</u>	<u>204</u>	20.4 *
		<u>45</u>	<u>1090</u>	24.22
<u>Rest of World</u>				
	Czechoslovakia	2	30	15.0
	Japan	2	39	19.5
	Yugoslavia	<u>4</u>	<u>85</u>	21.2
		<u>8</u>	<u>154</u>	19.2
<u>Summary</u>				
	W Europe	67	1461	21.80
	N America	45	1090	24.22
	Rest of World	<u>8</u>	<u>154</u>	19.2
		<u>120</u>	<u>2705</u>	22.54

* Of the countries with > 10 cases, France, UK and USA have an average latency period above world average, Germany and Canada below world average.

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