

Appendix 2. Observed number of mesotheliomas in the peritoneum and pleura among men in Sweden in occupations exposed to chemical agents with SIRs from 1961 to 2009

| NYK | Occupational title, 1980 | Exposure code ¹ | N | | | Peritoneum (ICD-7 158) | | | Pleura (ICD-7 162.2) | | |
|-----|----------------------------------------------------------------------------|-------------------------------------------------|---------|-----|--------|------------------------|-----|--------|----------------------|-----|--------|
| | | | Obs | SIR | 95% CI | Obs | SIR | 95% CI | Obs | SIR | 95% CI |
| 003 | Mechanical engineers and technicians | DEEX | 102,447 | 6 | 1.08 | 0.40, 2.36 | 158 | 1.67 | 1.42, 1.95 | | |
| 011 | Chemists and physicists | BENZ, NIGW | 8,340 | 0 | 0.00 | 0.00, 9.14 | 2 | 0.30 | 0.04, 1.08 | | |
| 014 | Laboratory technicians and assistants | BENZ | 2,091 | 0 | 0.00 | 0.00, 78.60 | 1 | 1.34 | 0.03, 7.48 | | |
| 021 | Veterinarians | ANIM, PPWL, UV | 1,256 | 0 | 0.00 | 0.00, 53.10 | 0 | 0.00 | 0.00, 3.09 | | |
| 045 | Medical technicians | FORM, NIGW | 2,108 | 0 | 0.00 | 0.00, 29.40 | 4 | 2.01 | 0.55, 5.13 | | |
| 338 | Filling station attendants and demonstrators | BENZ, DEEX, GASO, NIGW, PPWL, TOLU | 8,248 | 2 | 3.89 | 0.47, 14.10 | 3 | 0.35 | 0.07, 1.03 | | |
| 401 | Working proprietors: agricultural, horticultural, and forestry enterprises | ANIM, PPWL, UV | 202,251 | 9 | 0.71 | 0.32, 1.34 | 49 | 0.23 | 0.17, 0.31 | | |
| 405 | Livestock breeders | ANIM, FORM | 1,194 | 0 | 0.00 | 0.00, 51.80 | 2 | 1.72 | 0.21, 6.21 | | |
| 406 | Breeders of fur-bearing animals | ANIM, PPWL, UV | 967 | 0 | 0.00 | 0.00, 59.00 | 0 | 0.00 | 0.00, 3.55 | | |
| 411 | Agricultural and livestock workers | ANIM, PPWL, UV | 52,282 | 1 | 0.31 | 0.01, 1.71 | 5 | 0.09 | 0.03, 0.22 | | |
| 414 | Fur-bearing animal farm workers | ANIM, PPWL, UV | 488 | 0 | 0.00 | 0.00, 113.00 | 0 | 0.00 | 0.00, 6.71 | | |
| 418 | Agricultural, horticultural, and livestock work n.e.c. | ANIM, PPWL, UV | 905 | 0 | 0.00 | 0.00, 93.20 | 1 | 1.54 | 0.04, 8.58 | | |
| 419 | Non-specified agricultural, horticultural, and livestock work | ANIM, PPWL, UV | 7 | 0 | 0.00 | 0.00, 8,212.00 | 0 | 0.00 | 0.00, 441.00 | | |
| 441 | Forest workers and log-drivers | FORM, PPWL, UV | 65,024 | 1 | 0.26 | 0.01, 1.46 | 14 | 0.22 | 0.12, 0.38 | | |
| 501 | Miners and quarrymen | BAP, DEEX, IRAD, PPWL, QUAR | 12,178 | 0 | 0.00 | 0.00, 5.57 | 5 | 0.47 | 0.15, 1.11 | | |
| 502 | Well drillers and diamond drillers | PPWL, QUAR, UV | 1,829 | 0 | 0.00 | 0.00, 36.10 | 2 | 1.20 | 0.15, 4.35 | | |
| 503 | Ore dressers | NI, PPWL, QUAR | 1,065 | 0 | 0.00 | 0.00, 64.40 | 1 | 1.11 | 0.03, 6.18 | | |
| 504 | Mining and quarrying work n.e.c. | DEEX, QUAR | 3,674 | 0 | 0.00 | 0.00, 19.20 | 2 | 0.65 | 0.08, 2.34 | | |
| 509 | Non-specified mining and quarrying work | DEEX, QUAR | 37 | 0 | 0.00 | 0.00, 1,710.00 | 0 | 0.00 | 0.00, 105.00 | | |
| 631 | Railway engine drivers and assistants | ASB, DEEX, NIGW | 9,605 | 1 | 1.71 | 0.04, 9.54 | 19 | 1.82 | 1.09, 2.84 | | |
| 633 | Motor-vehicle drivers and tram drivers | DEEX, NIGW | 155,917 | 7 | 0.87 | 0.35, 1.79 | 76 | 0.57 | 0.45, 0.71 | | |
| 635 | Deliverymen | DEEX, NIGW, PPWL, UV | 2,214 | 0 | 0.00 | 0.00, 46.70 | 0 | 0.00 | 0.00, 3.16 | | |
| 636 | Bus and tram conductors, traffic assistants | DEEX, NIGW, UV | 1,439 | 0 | 0.00 | 0.00, 48.00 | 0 | 0.00 | 0.00, 2.79 | | |
| 639 | Non-specified rail and road transport work | DEEX, NIGW, UV | 1,417 | 0 | 0.00 | 0.00, 53.40 | 4 | 3.61 | 0.98, 9.25 | | |
| 641 | Harbormasters | DEEX, NIGW | 958 | 0 | 0.00 | 0.00, 75.30 | 0 | 0.00 | 0.00, 4.63 | | |
| 644 | Road traffic supervisors | DEEX, NIGW | 6,829 | 0 | 0.00 | 0.00, 11.20 | 2 | 0.37 | 0.04, 1.34 | | |
| 649 | Non-specified traffic supervision | DEEX, NIGW | 5 | 0 | 0.00 | 0.00, 11,844.00 | 0 | 0.00 | 0.00, 589.00 | | |
| 712 | Fur tailors | ANIM | 1,074 | 0 | 0.00 | 0.00, 54.50 | 1 | 0.86 | 0.02, 4.80 | | |
| 714 | Upholsterers | BENZ, MCH, PPWL, TCE, TOLU, WOOD | 6,569 | 1 | 2.62 | 0.07, 14.60 | 5 | 0.78 | 0.25, 1.82 | | |
| 715 | Patternmakers and cutters | FORM | 2,294 | 0 | 0.00 | 0.00, 24.00 | 2 | 0.76 | 0.09, 2.75 | | |
| 718 | Sewing work n.e.c. | FORM | 1,563 | 0 | 0.00 | 0.00, 42.00 | 3 | 2.06 | 0.43, 6.03 | | |
| 722 | Shoe cutters, lasters, and sewers | BENZ, TOLU | 3,642 | 0 | 0.00 | 0.00, 17.30 | 1 | 0.28 | 0.01, 1.58 | | |
| 729 | Non-specified shoe and leather goods work | BENZ, TOLU | 10 | 0 | 0.00 | 0.00, 6,035.00 | 0 | 0.00 | 0.00, 323.00 | | |
| 731 | Furnacemen | ASB, BAP, CR, FE, NI, NIGW, PB, PPWL, QUAR, SO2 | 11,199 | 1 | 1.74 | 0.04, 9.72 | 6 | 0.65 | 0.24, 1.42 | | |
| 732 | Metal annealers, temperers, and case-hardeners | BAP, CR, FE, NI, NIGW, PB, PPWL, WELD | 2,586 | 0 | 0.00 | 0.00, 26.40 | 2 | 0.89 | 0.11, 3.22 | | |
| 733 | Rolling mill workers | CR, CR, FE, NI, NIGW, PPWL, SO2, WELD | 5,788 | 0 | 0.00 | 0.00, 11.50 | 4 | 0.76 | 0.21, 1.96 | | |

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Appendix 2. Continued

| NYK | Occupational title, 1980 | Exposure code ¹ | N | Peritoneum (ICD-7 158) | | | Pleura (ICD-7 162.2) | | |
|-----|----------------------------------------------------|------------------------------------------------------------------------|---------|------------------------|-------|----------------|----------------------|-------|--------------|
| | | | | Obs | SIR | 95% CI | Obs | SIR | 95% CI |
| 735 | Smiths and forgers | BAP, FE, NIGW, PB, PPWL, WELD | 10,725 | 1 | 1.68 | 0.04, 9.37 | 13 | 1.34 | 0.72, 2.30 |
| 736 | Metal casters and moulders | BAP, CR, FE, FORM, NI, NIGW, PB, PPWL, QUAR, WELD | 11,315 | 0 | 0.00 | 0.00, 5.73 | 10 | 0.96 | 0.46, 1.76 |
| 737 | Wire and tube drawers | CR, FE, NI, NIGW, PPWL, WELD | 2,594 | 0 | 0.00 | 0.00, 25.90 | 1 | 0.43 | 0.01, 2.40 |
| 738 | Metal processing work n.e.c. | CR, FE, NI, PB, PPWL, QUAR, SO ₂ , TCE, TRI, WELD | 6,940 | 1 | 2.78 | 0.07, 15.50 | 10 | 1.73 | 0.83, 3.19 |
| 739 | Non-specified metal processing work | CR, FE, NI, PB, PPWL, QUAR, SO ₂ , TCE, TRI, WELD | 503 | 0 | 0.00 | 0.00, 187.00 | 1 | 2.76 | 0.07, 15.40 |
| 750 | Toolmakers, machine-tool setters, and operators | BAP, CR, FE, NI, PB, PPWL, TCE, TRI, WELD | 95,837 | 7 | 1.43 | 0.57, 2.94 | 120 | 1.48 | 1.22, 1.77 |
| 751 | Machinery fitters and machine assemblers | ASB, BAP, BENZ, CR, DEEX, FE, GASO, MCH, NI, PB, PPWL, TCE, TOLU, WELD | 127,226 | 6 | 0.96 | 0.35, 2.10 | 180 | 1.75 | 1.50, 2.02 |
| 753 | Sheet metal workers | ASB, CR, FE, NI, PB, PPWL, TRI, UV, WELD | 38,172 | 3 | 1.55 | 0.32, 4.52 | 140 | 4.38 | 3.68, 5.17 |
| 754 | Plumbers and pipe fitters | ASB, CR, FE, NI, PB, PPWL, WELD | 31,515 | 6 | 3.56 | 1.31, 7.76 | 139 | 4.99 | 4.20, 5.90 |
| 755 | Welders and flame cutters | ASB, BAP, CR, FE, FORM, NI, PB, PPWL, UV, WELD | 41,203 | 3 | 1.45 | 0.30, 4.24 | 54 | 1.57 | 1.18, 2.04 |
| 757 | Metal platers and coaters | CR, FE, FORM, NI, PB, PER, PPWL, TCE, TRI, WELD | 3,090 | 0 | 0.00 | 0.00, 23.00 | 6 | 2.32 | 0.85, 5.05 |
| 759 | Non-specified engineering and building metal work | CR, FE, NI, PB, PPWL, TCE, TRI, WELD | 21,302 | 0 | 0.00 | 0.00, 2.66 | 20 | 0.87 | 0.53, 1.34 |
| 761 | Electrical fitters and wiremen | ASB, PPWL | 63,493 | 7 | 2.21 | 0.89, 4.55 | 119 | 2.28 | 1.89, 2.72 |
| 764 | Radio and television assemblers and repairmen | MCH, PB, PER, TCE, TRI | 15,557 | 1 | 1.39 | 0.04, 7.73 | 12 | 1.00 | 0.52, 1.75 |
| 766 | Telephone and telegraph installers and repairmen | PB, PPWL, UV | 21,069 | 0 | 0.00 | 0.00, 3.43 | 8 | 0.44 | 0.19, 0.86 |
| 769 | Non-specified electrical and electronics work | ASB, FORM, MCH, PB, PER, TCE, TRI | 4,649 | 1 | 3.35 | 0.08, 18.60 | 6 | 1.21 | 0.44, 2.63 |
| 771 | Construction carpenters and joiners | ASB, PPWL, QUAR, UV, WOOD | 83,073 | 2 | 0.46 | 0.06, 1.67 | 98 | 1.40 | 1.14, 1.70 |
| 772 | Bench carpenters and cabinet makers | FORM, PPWL, WOOD | 47,242 | 2 | 0.76 | 0.09, 2.75 | 54 | 1.25 | 0.94, 1.63 |
| 773 | Laminated wood and fiberboard workers | CR, FORM, PPWL, WOOD | 543 | 0 | 0.00 | 0.00, 334.00 | 1 | 6.26 | 0.16, 34.90 |
| 774 | Frame and circular sawyers and planers | CR, NIGW, PPWL, WOOD | 11,368 | 0 | 0.00 | 0.00, 6.57 | 3 | 0.33 | 0.07, 0.98 |
| 778 | Woodwork n.e.c. | PPWL, WOOD | 9,787 | 1 | 1.72 | 0.04, 9.58 | 8 | 0.85 | 0.37, 1.67 |
| 779 | Non-specified woodwork | PPWL, WOOD | 8,632 | 0 | 0.00 | 0.00, 6.72 | 4 | 0.45 | 0.12, 1.16 |
| 781 | Painters | ASB, BENZ, CR, FORM, MCH, PB, PPWL, TCE, TOLU, UV | 49,244 | 7 | 2.70 | 1.08, 5.56 | 73 | 1.72 | 1.35, 2.16 |
| 791 | Bricklayers | ASB, PPWL, QUAR, UV | 18,956 | 6 | 5.42 | 1.99, 11.80 | 29 | 1.60 | 1.07, 2.30 |
| 792 | Masons | PPWL, QUAR, UV | 252 | 0 | 0.00 | 0.00, 267.00 | 1 | 4.52 | 0.11, 25.20 |
| 793 | Concrete and construction workers | ASB, PPWL, QUAR, UV | 72,332 | 5 | 1.29 | 0.42, 3.01 | 76 | 1.23 | 0.97, 1.54 |
| 794 | Insulators | ASB, BAP, BITU, PPWL, UV | 2,589 | 8 | 64.70 | 28.0, 128.00 | 22 | 10.90 | 6.81, 16.50 |
| 799 | Non-specified other building and construction work | ASB, PB, PPWL, QUAR, UV | 7,333 | 0 | 0.00 | 0.00, 7.42 | 22 | 2.75 | 1.72, 4.17 |
| 801 | Typographers and lithographers | PB | 27,145 | 1 | 0.72 | 0.02, 4.00 | 13 | 0.56 | 0.30, 0.97 |
| 806 | Bookbinders | MCH, PPWL | 2,842 | 0 | 0.00 | 0.00, 25.00 | 0 | 0.00 | 0.00, 1.54 |
| 808 | Printing work n.e.c. | BENZ, GASO, MCH, PB, PPWL, TCE, TOLU | 652 | 0 | 0.00 | 0.00, 150.00 | 1 | 2.72 | 0.07, 15.10 |
| 809 | Non-specified printing work | BENZ, GASO, PB, TOLU, TRI | 15 | 0 | 0.00 | 0.00, 4.343.00 | 0 | 0.00 | 0.00, 247.00 |
| 811 | Glass formers and cutters | ASB, NI, NIGW, PB, PPWL, QUAR | 2,083 | 0 | 0.00 | 0.00, 30.00 | 3 | 1.47 | 0.30, 4.30 |
| 812 | Potters | NI, NIGW, PB, PPWL, QUAR | 1,758 | 0 | 0.00 | 0.00, 36.40 | 0 | 0.00 | 0.00, 2.22 |

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Appendix 2. Continued

| NYK | Occupational title, 1980 | Exposure code ¹ | N | Peritoneum (ICD-7 158) | | | Pleura (ICD-7 162.2) | | |
|-----|----------------------------------------------------------------|--------------------------------------------------------|--------|------------------------|------|----------------|----------------------|------|--------------|
| | | | | Obs | SIR | 95% CI | Obs | SIR | 95% CI |
| 813 | Glass and ceramics kilnmen | NI, NIGW, PB, PPWL, QUAR, SO2 | 1,313 | 0 | 0.00 | 0.00, 48.10 | 2 | 1.66 | 0.20, 6.00 |
| 814 | Glass, china, and ceramics painters and decorators | NI, NIGW, PB, QUAR | 348 | 0 | 0.00 | 0.00, 188.00 | 0 | 0.00 | 0.00, 11.30 |
| 818 | Glass, pottery, and tile work n.e.c. | NIGW, QUAR | 1,691 | 0 | 0.00 | 0.00, 47.60 | 2 | 1.61 | 0.19, 5.80 |
| 819 | Non-specified glass, pottery, and tile work | NIGW, QUAR | 3,007 | 0 | 0.00 | 0.00, 20.40 | 4 | 1.38 | 0.38, 3.54 |
| 831 | Chemical process workers | BENZ, MCH, NIGW, PER, PPWL, TOLLU, TRI | 8,783 | 0 | 0.00 | 0.00, 8.44 | 15 | 2.15 | 1.20, 3.54 |
| 834 | Paper pulp workers | NIGW, SO2 | 9,431 | 0 | 0.00 | 0.00, 7.29 | 17 | 2.10 | 1.22, 3.36 |
| 836 | Paper and paperboard workers | ASB, FORM, NIGW, PPWL | 15,354 | 1 | 1.29 | 0.03, 7.17 | 13 | 1.04 | 0.56, 1.79 |
| 838 | Chemical and cellulose processing work n.e.c. | ASB, BENZ, BITU, FORM, MCH, NIGW, PB, PPWL, QUAR, TOLU | 2,050 | 0 | 0.00 | 0.00, 34.9 | 1 | 0.59 | 0.01, 3.29 |
| 839 | Non-specified chemical and cellulose processing work | NIGW, SO2 | 4,724 | 0 | 0.00 | 0.00, 14.90 | 3 | 0.77 | 0.16, 2.24 |
| 851 | Rubber products workers | BENZ, NIGW, PPWL, TCE, TOLLU, TRI | 7,891 | 1 | 2.46 | 0.06, 13.70 | 9 | 1.36 | 0.62, 2.59 |
| 852 | Plastic products workers | FORM, MCH, NIGW, PB, PPWL, TCE | 7,628 | 0 | 0.00 | 0.00, 10.70 | 8 | 1.47 | 0.63, 2.89 |
| 853 | Tanners and fur dressers | CR, NIGW, PPWL | 1,545 | 0 | 0.00 | 0.00, 39.80 | 1 | 0.65 | 0.02, 3.62 |
| 856 | Stone cutters and carvers | NIGW, PPWL, QUAR | 3,223 | 0 | 0.00 | 0.00, 20.70 | 2 | 0.72 | 0.09, 2.60 |
| 857 | Paper and paperboard products workers | FORM, NIGW, PPWL | 3,920 | 1 | 5.42 | 0.14, 30.20 | 2 | 0.66 | 0.08, 2.39 |
| 871 | Stationary engine and related equipment operators | DEEX, NIGW, SO2 | 11,851 | 2 | 3.14 | 0.38, 11.30 | 18 | 1.77 | 1.05, 2.79 |
| 872 | Crane and hoist operators | ASB, NIGW | 9,881 | 0 | 0.00 | 0.00, 6.56 | 14 | 1.51 | 0.83, 2.54 |
| 873 | Riggers and cable splicers | ASB, NI, PPWL | 269 | 0 | 0.00 | 0.00, 252.00 | 2 | 8.64 | 1.05, 31.2 |
| 874 | Construction machine operators | BITU, DEEX, PPWL | 24,172 | 1 | 0.77 | 0.02, 4.27 | 8 | 0.37 | 0.16, 0.72 |
| 875 | Truck and conveyor operators | DEEX, NIGW, PPWL | 27,549 | 2 | 1.54 | 0.19, 5.56 | 14 | 0.67 | 0.37, 1.13 |
| 876 | Greasers | DEEX, PPWL, TOLU | 3,077 | 0 | 0.00 | 0.00, 22.90 | 3 | 1.16 | 0.24, 3.40 |
| 879 | Non-specified operations monitoring and material handling work | DEEX, PPWL, TOLU | 60 | 0 | 0.00 | 0.00, 1,562.00 | 0 | 0.00 | 0.00, 110.00 |
| 882 | Dockers and freight handlers | DEEX, PPWL, UV | 13,522 | 1 | 1.39 | 0.04, 7.77 | 9 | 0.79 | 0.36, 1.51 |
| 883 | Store and warehouse workers | ASB, PPWL | 59,447 | 0 | 0.00 | 0.00, 1.25 | 45 | 0.96 | 0.70, 1.29 |
| 902 | Policemen | DEEX, NIGW, PB, PPWL | 20,783 | 1 | 0.92 | 0.02, 5.12 | 17 | 0.92 | 0.54, 1.47 |
| 933 | Chimney sweeps | ASB, BAP, PPWL | 2,656 | 0 | 0.00 | 0.00, 27.70 | 5 | 2.29 | 0.74, 5.34 |
| 943 | Laundryers and dry-cleaners | BENZ, PER, PPWL, TCE, TRI | 3,130 | 0 | 0.00 | 0.00, 21.90 | 3 | 1.09 | 0.22, 3.18 |

SIR, standardized incidence ratio; NYK, Nordic Occupational Classification; N, number of persons in follow-up; ICD, International Classification of Diseases; Obs, observed; CI, confidence interval; n.e.c., not elsewhere classified.

¹See Appendix 1 for exposure codes.