

CHEMISTS' SALARIES
and EMPLOYMENT STATUS

Based on the 1978 Salary and Employment Status Survey of ACS Members

# 1978 REPORT <br> OF CHEMISTS' SALARIES <br> AND EMPLOYMENT STATUS 

This report was prepared by the ACS Office of Manpower Studies.

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## INTRODUCTION AND ACKNOWLEDGMENT

This report presents detailed results of the 1978 Comprehensive Salary and Employment Status Survey conducted by the American Chemical Society's Office of Manpower Studies. The principal findings have been published in the June 19, 1978 (pp. 31-37) issue of Chemical and Engineering News.

A summary and analysis of the survey results also have been prepared by the Subcommittee on Surveys of the ACS Council Committee on Economic Status, which is responsible for oversight of the survey. The contribution of this Subcommittee and especially the chairman, Dr. Alan L. McClelland, is gratefully acknowledged. The general responsibility of the Committee chairman, Dr. Samuel M. Gerber, also is recognized. Special thanks go to each of more than 11,000 ACS members who completed and returned survey questionnaires.

Ms. Maria D. Frizat of the ACS Office of Manpower Studies conducted the survey, took responsibility for editing the returns, and put together this report. She was assisted by Ms. Joanna K. Chin, who typed the manuscript, and Mr. Daryle S. Watson of the ACS Chemical Abstracts Service, who handled the computer work. Mr. J. Robert Jones is manager of the ACS Office of Manpower Studies.

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## SUMMARY OF FINDINGS

Analysis of data from a survey such as the ACS annual Comprehensive Survey requires considerable caution since so many variables are involved. The survey, based on responses to a questionnaire sent in late February to a sample of one quarter of the members living in the United States, collects information on salaries, employment status, sex, minority status, citizenship, length of professional experience, type of employer, work function, chemical specialty, number of subordinates, geographic region, etc. Thus many types of correlations can be made, but oversimplifications are not particularly meaningful. A few of the possible comparisons which seem meaningful to the Committee on Economic Status' Subcommittee on Surveys are summarized here.

## Characteristics of Respondents

Tables A-1 through A-17 present the characteristics of survey respondents. An interesting fact is that the proportion of women in the ACS is increasing. Table l below shows the percent of women in the domestic membership and among survey respondents for the past six years.

Table 1
Percent of Women in the American Chemical Society

| Year | Domestic <br> Membership | Survey <br> Responses |
| :--- | :---: | :---: |
| 1973 | na |  |
| 1974 | 7.4 | 7.0 |
| 1975 | 8.3 | 7.3 |
| 1976 | na | 8.0 |
| 1977 | na | 8.2 |
| 1978 | 9.6 | 8.8 |
|  |  | 9.7 |

The proportion of minorities remained about 5\% from 1973 through 1977, but increased to $6 \%$ in 1978. This increase is probably due to the addition by the Equal Employment Opportunity Commission of "Subcontinental Indians" (meaning those from India and neighboring countries) to the "Asian" category.

Table 2
Percent of Minorities in the American Chemical Society (Survey Responses)

| Year | Black | American <br> Indian | Asian | Hispanic | Total |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 1973 | 1.0 | 0.1 | 3.1 | 0.6 | 4.8 |
| 1974 | 1.1 | 0.1 | 3.2 | 0.6 | 5.1 |
| 1975 | 1.0 | 0.2 | 3.4 | 0.6 | 5.2 |
| 1976 | 1.2 | 0.2 | 3.2 | 0.6 | 5.2 |
| 1977 | 0.9 | 0.1 | 4.4 | 0.8 | 5.3 |
| 1978 | 1.0 |  |  |  | 0.7 |
|  |  |  |  |  | 6.4 |

## Employment Status

Unemployment among ACS members stayed essentially constant since last year, $1.4 \%$ in 1978 vs. $1.5 \%$ in 1977. Groups other than the category "Unemployed and seeking employment" who could be considered to have employment problems are the "Employed part-time and seeking full-time employment" at 0.3\% (same in 1977) and "Retired and seeking full-time employment" at 0.4\%. This "retired but seeking" group seems to be quite constant regardless of economic conditions; it has been $0.3 \%$ to $0.4 \%$ in every year since 1972 when it was first listed as a category on the survey (see Table 3).

Table 3
EMPLOYMENT STATUS OF RESPONDENTS: 1971-78
(Percent Distribution)

|  | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Full-time employed (and seeking other employment) | $\begin{array}{r} 90.7 \\ \text { na } \end{array}$ | $\begin{array}{r} 90.8 \\ \text { na } \end{array}$ | $\begin{array}{r} 90.7 \\ \mathrm{na} \end{array}$ | $\begin{array}{r} 93.5 \\ \text { na } \end{array}$ | $\begin{array}{r} 93.2 \\ \text { na } \end{array}$ | $\begin{array}{r} 93.7 \\ \text { na } \end{array}$ | $\begin{aligned} & 93.7 \\ & (7.9) \end{aligned}$ | $\begin{aligned} & 93.7 \\ & (7.9) \end{aligned}$ |
| ```Part-time employed (and seeking full-time employment)``` | $\begin{array}{r} 2.3 \\ \text { na } \end{array}$ | $\begin{array}{r} 1.5 \\ \text { na } \end{array}$ | $\begin{array}{r} 1.3 \\ \text { na } \end{array}$ | $\begin{array}{r} 1.0 \\ \text { na } \end{array}$ | $\begin{gathered} 1.3 \\ (0.7) \end{gathered}$ | $\begin{gathered} 1.3 \\ (0.7) \end{gathered}$ | $\begin{gathered} 1.1 \\ (0.3) \end{gathered}$ | $\begin{gathered} 1.0 \\ (0.3) \end{gathered}$ |
| Postdoctorate or other fellowship | 1.6 | 2.0 | 2.9 | 2.4 | 2.0 | 2.2 | 2.0 | 1.9 |
| Unemployed seeking employment | 2.8 | 3.1 | 1.7 | 1.4 | 1.6 | 1.9 | 1.5 | 1.4 |
| Retired seeking employment | 2.6 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 | 0.4 |
| Not seeking employment |  | 2.2 | 3.0 | 1.4 | 1.4 | 0.7 | 1.4 | 1.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Number of responses | 27,325 | 25,539 | 11,780 | 11,876 | 10,991 | 10,952 | 12,260 | 11,059 |

Note: In 1973 the sample size was reduced permanently from one half to one quarter of the ACS domestic membership. In 1974 and thereafter members over 64 years of age were eliminated from the sample.

In general, comparisons of unemployment rate by other categories such as monority status, age, field of specialty, geographic area, and other breakdowns, show no significant differences, though this is partly because the number of individuals in each comparison cell is frequently too small to allow valid comparisons (see Tables B-l through B-11).

However, the higher unemployment among women compared to men is probably significant, as is the declining unemployment rate for women, as can be seen in Table 4 below.

Table 4

Percent Unemployed Seeking Employment, by Sex: 1971-1978

| Year | Men | Women | Total |
| :--- | :---: | :---: | :---: |
| 1971 |  |  |  |
| 1972 | 2.4 | 6.3 | 2.8 |
| 1973 | 2.3 | 7.3 | 3.1 |
| 1974 | 1.5 | 4.2 | 1.7 |
| 1975 | 1.2 | 3.5 | 1.4 |
| 1976 | 1.5 | 2.7 | 1.6 |
| 1977 | 1.6 | 4.4 | 1.9 |
| 1978 | 1.3 | 3.4 | 1.5 |
|  | 1.2 | 2.8 | 1.4 |

## Industrial Salaries

The survey shows that in 1978 private industry employs $60.8 \%$ of chemist members of the Society. Therefore consideration of industrial salaries serves as a good starting point. These salaries in constant dollars (that is, corrected for inflation) are generally up from 1977. However, compared with 1968, salaries in constant 1967 dollars are down approximately $1 \%$ to $2 \%$ for more experienced people, and down $6 \%$ to $14 \%$ for the less experienced groups. The years 1974-76 were generally the period when constant dollar salaries hit bottom--at all levels there has been some progress upward since. (See Table 5-B).

SALARIES OF CHEMISTS IN PRIVATE INDUSTRY BY DEGREE AND SELECTED EXPERIENCE LEVELS: 1968-78 (Current \$)

| Year | Years of Professional Experience |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2-4 | 10-14 | 20-24 | 30-34 |
| B.S. 1968 | 9,400 | 12,400 | 15,000 | 16,000 |
| 1969 | 9,700 | 12,800 | 15,000 | 16,000 |
| 1970 | 10,800 | 14,000 | 17,000 | 18,500 |
| 1971 | 10,600 | 14,300 | 17,000 | 18,400 |
| 1972 | 11,000 | 15,000 | 17,600 | 19,200 |
| 1973 | 11,200 | 15,300 | 18,400 | 20,000 |
| 1974 | 11,500 | 16,200 | 19,900 | 21,000 |
| 1975 | 12,000 | 17,600 | 22,000 | 23,000 |
| 1976 | 13,300 | 19,000 | 23,000 | 24,000 |
| 1977 | 14,000 | 20,000 | 24,000 | 26,500 |
| 1978 | 15,000 | 21,500 | 27,000 | 29,000 |
| \% change 1977-78 | 7.1 | 7.5 | 12.5 | 9.4 |
| M.S. 1968 | 10,500 | 13,800 | 16,500 | 16,500 |
| $1969$ | 11,200 | 14,100 | 16,200 | 16,900 |
| 1970 | 12,100 | 15,000 | 18,000 | 18,500 |
| 1971 | 12,000 | 15,800 | 18,000 | 19,000 |
| 1973 | 12,400 12,800 | 16,000 17,000 | 19,300 20,100 | 20,000 |
| 1974 | 13,000 | 18,000 | 22,000 | 22,000 23,500 |
| 1975 | 14,200 | 19,500 | 23,000 | 25,000 |
| 1976 | 15,000 | 20,000 | 24,700 | 25,000 |
| 1977 | 16,000 | 22,300 | 27,500 | 25,000 |
| 1978 | 17,000 | 24,000 | 29,900 | 30,700 |
| \% Change 1977-78 | 6.3 | 7.6 | 8.7 | 9.6 |
| Ph.D. 1968 | 14,400 | 17,000 | 19,900 | 21,000 |
| 1969 | 15,300 | 18,300 | 20,700 | 21,700 |
| 1970 | 16,200 | 19,200 | 22,000 | 24,000 |
| 1971 | 16,800 | 20,200 | 23,400 | 24,700 |
| 1972 | 17,300 | 21,100 | 24,300 | 25,000 |
| 1974 | 18,000 | 22,000 | 25,300 | 27,000 |
| 1975 | 19,100 | 26,000 | 26,500 | 29,100 |
| 1976 | 20,000 | 28,000 | 29,500 31,800 | 30,000 34,000 |
| 1977 | 21,500 | 29,100 | 33,000 | 34,000 36,000 |
| 1978 | 23,000 | 31,800 | 36,000 | 38,800 |
| \% change 1977-78 | 7.0 | 9.3 | 9.1 | 5.6 |

SALARIES OF CHEMISTS IN PRIVATE INDUSTRY
BY DEGREE AND SELECTED EXPERIENCE LEVELS: 1968-78
(Constant 1967 \$)

| Year |  | Years of Professional Experience |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2-4 | 10-14 | 20-24 | 30-34 |
| B.S. | 1968 | 9,144 | 12,062 | 14,591 | 15,564 |
|  | 1969 | 8,981 | 11,852 | 13,889 | 14,815 |
|  | 1970 | 9,432 | 12,227 | 14,847 | 16,157 |
|  | 1971 | 8,848 | 11,937 | 14,190 | 15,359 |
|  | 1972 | 8,871 | 12,097 | 14,194 | 15,484 |
|  | 1973 | 8,629 | 11,787 | 14,176 | 15,408 |
|  | 1974 | 8,036 | 11,321 | 13,906 | 14,675 |
|  | 1975 | 7,605 | 11,153 | 13,942 | 14,575 |
|  | 1976 | 7,940 | 11,343 | 13,731 | 14,328 |
|  | 1977 | 7,856 | 11,223 | 13,468 | 14,871 |
|  | 1978 | 7,903 | 11,328 | 14,226 | 15,279 |
|  | change 1977-78 | 0.6 | 0.9 | 5.6 | 2.7 |
|  | change 1968-78 | -13.6 | -6.1 | -2.5 | -1.8 |
| M.S. | 1968 | 10,214 | 13,424 | 16,051 | 16,051 |
|  | 1969 | 10,370 | 13,056 | 15,000 | 15,648 |
|  | 1970 | 10,568 | 13,100 | 15,721 | 16,157 |
|  | 1971 | 10,017 | 13,189 | 15,025 | 15,860 |
|  | 1972 | 10,000 | 12,903 | 15,565 | 16,129 |
|  | 1973 | 9,861 | 13,097 | 15,485 | 16,949 |
|  | 1974 | 9,085 | 12,579 | 15,374 | 16,422 |
|  | 1975 | 8,999 | 12,357 | 14,575 | 15,843 |
|  | 1976 | 8,955 | 11,940 | 14,746 | 14,925 |
|  | 1977 | 8,979 | 12,514 | 15,432 | 15,713 |
|  | 1978 | 8,957 | 12,645 | 15,753 | 16,175 |
|  | change 1977-78 | -0.2 | 1.0 | 2.1 | 2.9 |
|  | change 1968-78 | -12.3 | -5.8 | -1.9 | 0.8 |
| Ph. D | . 1968 | 14,008 | 16,537 | 19,358 | 20,428 |
|  | 1969 | 14,167 | 16,944 | 19,167 | 20,093 |
|  | 1970 | 14,148 | 16,769 | 19,214 | 20,961 |
|  | 1971 | 14,023 | 16,861 | 19,533 | 20,618 |
|  | 1972 | 13,952 | 17,016 | 19,597 | 20,161 |
|  | 1973 | 13,867 | 16,949 | 19,492 | 20,801 |
|  | 1974 | 12,579 | 16,422 | 18,519 | 20,335 |
|  | 1975 | 12,104 | 16,477 | 18,695 | 19,011 |
|  | 1976 | 11,940 | 16,716 | 18,985 | 20,299 |
|  | 1977 | 12,065 | 16,330 | 18,519 | 20,202 |
|  | 1978 | 12,118 | 16,754 | 18,967 | 20,443 |
|  | change 1977-78 | 0.4 | 2.6 | 2.4 | 1.2 |
|  | change 1968-78 | -13.5 | 1.3 | -2.0 | 0.1 |

## Academic Salaries

Detailed breakdown of academic salaries by years of experience is available starting in 1975. Table 6 summarizes the salaries of Ph.D. chemists in current and constant dollars for those years. The actual numbers of bachelor's and master's degree holders in academia are too small to make a similar analysis at these degree levels meaningful.

Table 6

MEDIAN SALARIES OF Ph.D. CHEMISTS IN COLLEGE OR UNIVERSITY BY SELECTED EXPERIENCE LEVELS: 1975-78
(Current \$)

|  | Years of Professional Experience |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Year | $2-4$ | $10-14$ | $20-24$ | $30-34$ |
| 1975 | 13,300 | 17,700 | 23,500 | 24,100 |
| 1976 | 13,600 | 18,500 | 23,000 | 26,000 |
| 1977 | 13,900 | 19,200 | 25,000 | 26,100 |
| 1978 | 15,000 | 20,000 | 26,000 | 28,600 |
| \% change 1977-78 | 7.9 | 4.2 | 4.0 | 9.6 |

(Constant 1967 \$)

| 1975 | 8,428 | 11,217 | 14,892 | 15,272 |
| :--- | :---: | :--- | :--- | :---: |
| 1976 | 8,119 | 11,045 | 13,731 | 15,522 |
| 1977 | 7,800 | 10,774 | 14,029 | 14,646 |
| 1978 | 7,903 | 10,537 | 13,699 | 15,068 |
|  |  |  |  |  |
| $\%$ change $1977-78$ | 1.3 | -2.2 | -2.4 | 2.9 |
| $\%$ change $1975-78$ | -6.2 | -6.1 | -8.0 | -1.3 |

## Salaries of Women

Women's median salaries are clearly still below men's at nearly all degree and experience levels. Salary differentials are more pronounced for the more experienced groups. Statistical fluctuations tend to obscure any short-term trends in the relationship, but the long-term trends are clearly converging, especially for the less experienced groups (see Table 7).

Table 7

WOMEN'S MEDIAN SALARIES AS PERCENT OF MEN'S BY DEGREE AND SELECTED YEARS OF EXPERIENCE: 1968-78

| Year | Years of Professional Experience |  |  |
| :---: | :---: | :---: | :---: |
|  | 2-4 | 5-9 | 10-14 |
| B. S. 1968 | 84.9 | 82.4 | 80.0 |
| B. S. 1970 | 82.7 | 77.9 | 74.2 |
| 1972 | 91.7 | 90.0 | 87.3 |
| 1974 | 93.0 | 85.7 | 84.8 |
| 1976 | 98.5 | 84.4 | 85.3 |
| 1977 | 94.3 | 89.8 | 94.6 |
| 1978 | 104.2 | 88.9 | 84.7 |
| M. S. 1968 | 77.9 | 78.3 | 73.9 |
| 1970 | 75.4 | 78.3 | 75.6 |
| 1972 | 86.7 | 88.9 | 79.7 |
| 1974 | 88.3 | 83.3 | 80.5 |
| 1976 | 89.0 | 85.6 | 92.3 |
| 1977 | 84.4 | 94.4 | 79.5 |
| 1978 | 90.9 | 93.8 | 87.2 |
| Ph.D. 1968 | 70.3 | 79.9 | 78.1 |
| 1970 | 69.1 | 73.2 | 73.4 |
| 1972 | 66.7 | 74.3 | 76.5 |
| 1974 | 87.9 | 76.0 | 84.9 |
| 1976 | 80.0 | 81.1 | 78.3 |
| 1977 | 84.0 | 86.4 | 74.8 |
| 1978 | 91.4 | 83.3 | 71.4 |

## Chemical Engineers' Salaries

Since a smaller, more select group of chemical engineers join the ACS, as compared with the AIChE, the significance of the Comprehensive Survey data on chemical engineers' salaries is more difficult to evaluate than the chemists' data. The engineering membership of the ACS may not be truly typical. However, in accord with ACS starting salary survey and other sources of data, the survey does support the general picture of higher salaries for chemical engineers.

Table 8

## 1978 MEDIAN SALARIES OF CHEMISTS \& CHEMICAL ENGINEERS BY DEGREE AND SELECTED YEARS OF EXPERIENCE



Source: Tables D-1, D-42 and D-81.

Subcommittee on Surveys
Don R. Baker
Madeleine M. Joullie'
Alan L. McClelland, Chairman

RESPONDENTS BY SEX AND DEGREE

## HIGHEST DEGREE EARNED



TABLE A-2
RESPONDENTS BY AGE AND DEGREE

HIGHEST DEGREE EARNED
AGE

20-24
25-29

30-34
35-39

40-44
45-49
50-54
55-59
60-64

AVERAGE AGE
COLUMN
 LESS BS
table a-3
RESPONDENTS BY AGE, SEX, AND DEGREE


TABLE A-4

RESPONDENTS BY WORK SPECIALTY AND DEGREE

TABLE A-6


## TABLE A-8

MINORITY RESPONDENTS BY DEGREE AND SEX



TABLE A-7 7
RESPONDEN

TABLE A-10
POSTDOCTORAL RESPONDENTS BY AGE AND SEX

table A-11
POSTDOCTORAL RESPONDENTS BY MINORITY CLASSIFICATION AND CITIZENSHIP

table A-9
POSTDOCTORAL RESPONDENTS BY YEARS SINCE PHD AND SEX



NUMBER OF
SUBORDI NATES

$$
\begin{aligned}
& \text { RDFESNLS } \\
& 0 \\
& 1 T O 2 \\
& 3 T O 6 \\
& 7 T O 20 \\
& 21 \text { OR }
\end{aligned}
$$

[^0]
## OFESNLS 0 1 TO 2 3 TO 6 7 TO 20 21 OR

TECHNCNS

## $\begin{array}{lll}0 & \\ 1 & \\ 2 & \\ 3 & \text { TO } & 6 \\ 7 & T O & 20 \\ 21 & \text { OR }\end{array}$

OTHERS
0
1 TO 2
3 TO 20
21 OR

AVERAGE YEARS OF EXPERIENCE OF FULL-TIME EMPLOYED CHEMISTS

by Work Function and Degree



TABLE A-16
AVERAGE YEARS OF EXPERIENCE OF FULL-TIME EMPLOYED CHEMISTS by Work function and Degree - Men

| WORK FUNCTION <br> RED MGMT, ADMINIS | HIGHES | DEGREE MASTERS | NED DOCTORS | $\begin{aligned} & \text { ROW } \\ & \text { TOTAL } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | 24.92 I | 23.71 <br> 204 | $20.05{ }^{796}$ | 21.854 |
|  | 12.25 I | 17.72 |  | 13.96 |
| APPLIED RED | 17.56 | 18.21 442 | 120.94 12 | 15.70 |
| GEN MGMT,ADMINIS $\frac{1}{1}$ | $23.24 \frac{1}{1}$ | 20.70 | $22.13{ }^{2} \frac{1}{1}$ | 22.38 |
| TEACHING,RESRCH | 10.26 I | 1759 147 | 16.54 1368 | 16.53 |
| MKT, SALE,PUR, TCH | 22.48 I | $20.45{ }_{11} \frac{1}{1}$ | $17.16{ }^{16}$ | 20.84 436 |
| PKD, QUAL CONTROL $\frac{\text { I }}{\text { I }}$ | $15.82{ }^{1}$ | $17.4{ }^{1}{ }^{1}$ | $13.01{ }^{16}$ | 15.87 565 |
| FORENSIC,LAB ANL | 13.63 I | ${ }^{13} \cdot 57$ | $15.51 \frac{1}{1}$ | 13.67 |
| WRITE,ABST, LIBRY $\frac{\text { I }}{\text { I }}$ | $21.29 \frac{1}{1}$ | $21.00 \frac{1}{16}$ | 19.391 | ${ }_{6}^{20.25}$ |
| DATA PROCESSING | $12.73{ }^{\frac{1}{1}}$ | $12.07 \frac{1}{14}$ | 14.888 | 13.34 |
| CONSULTING | 23.356 | 21.87 | $23.934 \frac{1}{1}$ | ${ }^{23.17}$ |
| OTHER | 18.35 I | $19.83{ }^{1}$ | $17.488 \frac{1}{1}$ | ${ }^{18} 1768$ |
| COLUMN COEAN | 180918 | 19.03 | 16.39 | 17850 8208 |

TABLE A-17
AVERAGE YEARS OF EXPERIENCE OF FULL-TIME EMPLOYED CHEMISTS BY WORK FUNCTION AND DEGREE - WOMEN

TABLE B-1
EMPLOYMENT STATUS OF RESPONDENTS
by Highest Degree Earned

EMPLOYMENT STATUS OF RESPONDENTS
Men by Highest Degree Earned

TABLE B-3

## EMPLOYMENT STATUS OF RESPONDENTS <br> Women by Highest Degree Earned



EMPLOYMENT STATUS OF RESPONDENTS
by Minority Group Classification

TABLE B-7

| EMPLOYMENT STATUS | CITIZENSHIP |  |  |
| :---: | :---: | :---: | :---: |
|  |  | NON-U.S. |  |
|  | U.S | REM CTHER CIDENT VISA | ROW total |
| fulltime not seeki | 9167 $86.4 \%$ | ${ }_{74.08}^{268}$ I $\quad 36.78$ I | $\begin{aligned} & 9453 \\ & 85.8 \% \end{aligned}$ |
|  | $\begin{aligned} & 806 \\ & 7.6 \end{aligned}$ | $17.1{ }^{62}$ I ${ }^{\text {I }}$ | 873 |
| PARTtime seeking - ${ }_{\text {I }}^{\text {I }}$ | 32 0.3 | $0.3{ }^{1} \frac{1}{1} \quad 0.00^{\text {a }}$ | 0.33 |
| PRTTIME NCT SEEK ${ }^{-\frac{1}{1} \text { I }}$ | 72 0.7 | $0 . \frac{1}{3} \frac{1}{\frac{1}{1}}$ | 0.74 0.7 |
| POSTEOC,FELLOW | 161 | 22 6.1 | 207 |
| UNEMPLYE SEEKING $-\frac{1}{\text { I }}$ | $\begin{array}{r}148 \\ 14 \\ \hline\end{array}$ | $1.4{ }^{5} 4{ }^{\text {a }}$ | 153 |
| UNEMPLD NOT SEEK $\frac{\mathrm{I}}{\text { I }}$ | 60 0.6 | $0.6{ }^{\frac{1}{1}}$ | 63 0.6 |
| RETIREC SEEKG Ft ${ }_{\text {I }}^{\text {I }}$ | 0. 8 | $\begin{array}{llll}0 \\ 0.0 & \frac{1}{1} & 0.0 \\ 0\end{array}$ | 0. 8 |
| RETIREE SEEKG PT $\frac{1}{\frac{1}{1} \text { I }}$ | $\begin{array}{r}33 \\ 0.3 \\ \hline\end{array}$ | $00^{0} 0^{\frac{1}{1}} 00.000 \frac{1}{1}$ | 33 0.3 |
| RETIRED NOT SEEK $\frac{1}{\frac{1}{1}}$ | 117 <br> 1.1 <br> 1 |  | 118 1.1 |
| $\begin{aligned} & \text { COLUMN } \\ & \text { TOTAL } \end{aligned}$ | $\begin{gathered} 10604 \\ \text { S6. } 3 \% \end{gathered}$ | $\begin{array}{ll} 362 \\ 3.3 \% & 0.49 \end{array}$ | $\begin{aligned} & 11015 \\ & 100.0 \% \end{aligned}$ |


EMPLOYMENT STATUS OF RESPONDENTS
TABLE B-9
by Present or Most recent Work function




See page 141 for list of states by geographic region.

TABLE C-1

LENGTH OF UNEMPLOYMENT OF RESPONDENTS

UNEMPLOYED ANY TIME DURING YEAR ENDING MARCH 1, 1978
by Highest Degree Earned

O TC 1 MONTHS
1 TO 2 MONTHS
2 TG 3 MCNTHS
3 TC 6 MONTHS
6 TO 12 MONTHS

12 TO 18 MONTHS
18 TO 24 MONTHS
24 TC 36 MONTHS
36 CR MORE
COLUMN

HIGHEST CEGREE EARNED


ROW TOTAL 78 18.4\% 12.5 15.6 21.92 21.8 19
4.5 10
2.4 1.4
2.6

424
$0.0 \%$

TABLE C-2

## LENGTH OF UNEMPLOYMENT OF RESPONDENTS

UNEMPLOYED ANY TIME DURING YEAR ENDING MARCH 1, 1978

Men by Highest Degree Earned

LENTH OF UNEMPLOYMENTI HIGHEST DEGREE EARNED

O TO 1 MONTHS
1 TO 2 MONTHS
2 TO 3 MONTHS

3 TO 6 MONTHS
6 TO 12 MONTHS
12 TO 18 MONTHS
18 TO 24 MONTHS
24 TO 36 MCNTHS

36 GR MORE

> COLUMN




ROW TOTAL $20.71 \%$ | 39 |
| :--- | 12.5

74 21.6 22.47 5.2 2.7 1.4 2.9 343
$0.0 \%$

## LENGTH OF UNEMPLOYMENT OF RESPONDENTS

UNEMPLOYED ANY TIME DURING YEAR ENDING MARCH 1, 1978

Women by Highest Degree Earned

0 TO 1 MONTHS
1 TO 2 MONTHS
2 TO 3 MONTHS
3 TO 6 MONTHS
6 TO 12 MONTHS
12 TO 18 MONTHS

18 TO 24 MONTHS
24 TO 36 MONTHS
36 CR MCRE
COLUMN
HIGHEST DEGREE EARNED
LENTH GF UNEMPLOYMENTI IBACHLORS MASTERS DOCTORS


ROW
tOTAL
8. ${ }^{7}$ \%

174
17.3
23
284
18
22.2
12
14.8

1. ${ }^{\frac{1}{2}}$

3
3.7
2.5
$1 . \frac{1}{2}$
100.81
TABLE C-4
by Field of Highest Degree


TABLE C-6
by Minority Group Classification


TABLE C-7

LENGTH OF UNEMPLOYMENT OF RESPONDENTS

UNEMPLOYED ANY TIME DURING YEAR ENDING MARCH 1,1978

BY CITIZENSHIP

TABLE C-8
LENGTH OF UNEMPLOYMENT OF RESPONDENTS UNEMPLOYED ANY TIME DURING YEAR ENDING MARCH 1, 1978
by Present or Most recent employer

TABLE C-9
LENGTH OF UNEMPLOYMENT OF RESPONDENTS UNEMPLOYED ANY TIME DURING YEAR ENDING MARCH 1,1978

table c-10
LENGTH OF UNEMPLOYMENT OF RESPONDENTS UNEMPLOYED ANY TIME DURING YEAR ENOING MARCH 1,1978
WCRK SPECIALTY

TABLE C-11
TABLE D-1
BY DEGREE AND EXPERIENCE

TABLE D－2
SALARIES OF CHEMISTS
NヨW－ヨวNヨIyヨdxヨ an甘 ヨヨyפヨด 人日

table d-3
by Degree and Experience - women


TABLE D-4
SALARIES OF CHEMISTS
by Employer and Degree

## HI GHEST DEGREE EARNED.

EMPLOYER

MANUFAC-
TURING
NONMANUF ACTURING


TABLE D-5
SALARIES OF CHEMISTS
by Employer and Degree - Men


TABLE D-6

SALARIES OF CHEMISTS
by Employer and degree - Women


by Employer and Experience - Master's Degree

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline EMPLOYER \& LESS \& 2－4 \& 5－9 \& \[
\begin{array}{r}
Y E A \\
10-14
\end{array}
\] \& \[
\begin{aligned}
\& =\text { PROFE } \\
\& 15-19
\end{aligned}
\] \& NAL EXP
\[
20-24
\] \&  \& 30－34 \& 35－39 \& 40 OR MORE \& \[
\begin{gathered}
\text { ROW } \\
\text { TOTAL }
\end{gathered}
\] \\
\hline \& \& \& \& \& \& \& \& \& \& \& \\
\hline \begin{tabular}{lr} 
MANUFAC－ \& MEDIANI \\
TURANI \\
COUNTI
\end{tabular} \& \[
\begin{array}{r}
21600 \\
21345 \\
44 \\
\hline
\end{array}
\] \& \[
\begin{array}{r}
23000 \\
22987 \\
247
\end{array}
\] \& \[
\begin{array}{r}
26400 \\
26897 \\
475
\end{array}
\] \& \[
\begin{array}{r}
3200 \\
3191 \\
41
\end{array}
\] \& \[
\begin{array}{r}
33000 \\
34091 \\
287
\end{array}
\] \& \[
\begin{array}{r}
36000 \\
38183 \\
288
\end{array}
\] \& \[
\begin{array}{r}
37400 \\
40346 \\
253
\end{array}
\] \& \[
\begin{gathered}
3880 \\
4294 \\
14
\end{gathered}
\] \& \[
\begin{array}{r}
4000 \\
4303
\end{array}
\] \& \[
\begin{aligned}
\& 43700 \\
\& 51611 \\
\& 28
\end{aligned} \frac{I}{I}
\] \& \(33157{ }^{\circ}\) \\
\hline NONMANUFACTURING \(\frac{1}{1}\) \& 21000
20233
6 \& 23400
22793

29 \& 25000
25657
37 \& 30000
30100

31 \& $$
\begin{array}{r}
34500 \\
35258 \\
19
\end{array}
$$ \& 33800

36465

23 \& $$
\begin{array}{r}
30000 \\
37243 \\
21
\end{array}
$$ \& \[

$$
\begin{array}{r}
28800 \\
34167 \\
6
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
42000 \\
49629 \\
7
\end{array}
$$

\] \& \[

$$
\begin{array}{cc}
50000 \\
50000 \\
1
\end{array}
$$ \frac{1}{1}

\] \& \[

$$
\begin{array}{r}
3 C 877 \\
180
\end{array}
$$
\] <br>

\hline CGLLEGE，UNIVRSTY \& 12400.
13171
10 \& 15000
15703
129 \& 17000
17876

346 \& $\begin{array}{r}20000 \\ 21423 \\ 361 \\ \hline\end{array}$ \& \[
$$
\begin{array}{r}
23400 \\
24528 \\
292
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
26000 \\
26871 \\
234
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
28000 \\
28990 \\
187
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
28600 \\
30313 \\
125
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
32000 \\
31972 \\
74
\end{array}
$$

\] \& \[

$$
\begin{array}{ccc}
33600 \\
30782 . & \frac{1}{1} \\
11
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
23403 \\
1773
\end{array}
$$
\] <br>

\hline HIGH SCH，OTHR SC I \& 0.

0. \& \& $$
\begin{array}{r}
14500 \\
16700 \\
6
\end{array}
$$ \& 12000

13167

3 \& $\begin{array}{r}19000 \\ 15867 \\ \hline\end{array}$ \& \[
$$
\begin{array}{r}
20000 \\
18600 \\
3
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
14000 \\
14650 \\
2
\end{array}
$$
\] \& 16300

16300

1 \& $$
\begin{array}{r}
27000 \\
27000 \\
1
\end{array}
$$ \& $\begin{array}{lll}10 & -1 \\ 00 & \frac{1}{1} \\ 0 & \\ 0 & \frac{1}{1}\end{array}$ \& \[

16616
\] <br>

\hline FEDERAL GOVERNMT $\frac{\text { I }}{\text { I }}$ \& \& 22000
23169
26 \& 26000
25793
71 \& 30000
29369
45 \& 32000
32695

43 \& $\begin{array}{r}36000 \\ 36132 \\ \hline 57 \\ \hline\end{array}$ \& $\begin{array}{r}39000 \\ 39226 \\ 42 \\ \hline\end{array}$ \& \[
$$
\begin{array}{r}
36900 \\
38056 \\
27
\end{array}
$$

\] \& \[

40000
\]

$$
\begin{array}{r}
39194 \\
17
\end{array}
$$ \& \[

$$
\begin{array}{r}
34000 \\
31433 \\
3
\end{array}
$$ \frac{\frac{1}{I}}{1}

\] \& \[

$$
\begin{array}{r}
32194 \\
331
\end{array}
$$
\] <br>

\hline STATE，LOCL GOV $\frac{\text { I }}{\text { I }}$ \& 0.
0.
0 \& 16000
15917
6 \& 18700
19875
12 \& 25000
25900

11 \& $$
\begin{array}{r}
27000 \\
27600 \\
6
\end{array}
$$ \& 26000

24240

5 \& $\begin{array}{r}20000 \\ 23500 \\ \hline\end{array}$ \& $\begin{array}{r}15900 \\ 19867 \\ \hline\end{array}$ \& \[
$$
\begin{gathered}
25000 \\
30500 \\
4
\end{gathered}
$$

\] \& \[

$$
\begin{array}{rr}
38500 \\
38500 & \frac{I}{I} \\
1
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
23458 \\
52
\end{array}
$$
\] <br>

\hline SELF－EMPLOYED $\frac{\text { I }}{\text { I }}$ \& \[
$$
\begin{array}{r}
43000 \\
43000 \\
1 \\
\hline
\end{array}
$$

\] \& 000 \& \[

$$
\begin{array}{r}
15000 \\
18000 \\
2
\end{array}
$$
\] \& 30000

32500
4 \& 68000． \& 30000
31667
3 \& 28000
30714

7 \& $$
\begin{array}{r}
30000 \\
30000 \\
1
\end{array}
$$ \& \[

$$
\begin{array}{r}
30000 \\
38629 \\
7
\end{array}
$$

\] \& \[

$$
\begin{aligned}
& 45000 \\
& 45000 \\
& \\
& 1
\end{aligned}
$$

\] \& \[

$$
\begin{gathered}
40400 \\
31
\end{gathered}
$$
\] <br>

\hline HOSPITAL，IND LAB \& 30000． \& 19000
20430
10 \& 22900
22814
28 \& 30000
30833
9 \& 24000
28350

8 \& $$
\begin{array}{r}
39000 \\
39167
\end{array}
$$ \& \[

$$
\begin{array}{r}
30000 \\
39500 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
38000 \\
37667 \\
3
\end{array}
$$

\] \&  \& \[

$$
\begin{aligned}
& 30600 . \\
& 30600 . \\
& 1 \\
& 1
\end{aligned}
$$

\] \& \[

28270
\] <br>

\hline NONPRFT RES INST $\frac{\text { I }}{\frac{1}{1}}$ \& 0.
0

0 \& $$
\begin{aligned}
& 20600 \\
& 20364 \\
& 22
\end{aligned}
$$ \& \[

$$
\begin{array}{r}
24900 \\
24335 \\
26
\end{array}
$$
\] \& 26300

26577

22 \& $$
\begin{array}{r}
28000 \\
28641 \\
34
\end{array}
$$ \&  \&  \& 38000 36880

10 \& $$
\begin{aligned}
& 65000 \\
& 65000
\end{aligned}
$$

$$
65000
$$ \& \[

$$
\begin{gathered}
32700 \\
3456 \\
3
\end{gathered}
$$

\] \& \[

$$
\begin{array}{r}
29243 \\
167
\end{array}
$$
\] <br>

\hline | $\square$ |
| :--- |
| OTHER | \& \[

$$
\begin{array}{r}
15300 \\
20650 \\
2 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{aligned}
& 17000 \\
& 17900
\end{aligned}
$$

\] \& \[

$$
\begin{array}{r}
24000 \\
23625 \\
4
\end{array}
$$

\] \& \[

$$
\begin{aligned}
& 21100 . \\
& 30683 .
\end{aligned}
$$

\] \& \[

$$
\begin{array}{r}
24000 \\
24000 \\
\quad 1 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
30000 \\
38500 \\
-\quad 2
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
48000 \\
46000 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
24300 \\
27650 \\
2
\end{array}
$$

\] \& \&  \& \[

$$
\begin{array}{r}
29470 \\
27
\end{array}
$$
\] <br>

\hline CGLUMN MEAN \& $$
\begin{array}{r}
19990 \\
68
\end{array}
$$ \& \[

$$
\begin{gathered}
20684 \\
474
\end{gathered}
$$

\] \& \[

$$
\begin{array}{r}
23319 \\
1007
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
27288 \\
911
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
29868 \\
698
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
33494 \\
650
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
35790 \\
550
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
36797 \\
322
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
38860 \\
220
\end{array}
$$

\] \& \[

43792

\] \& \[

$$
\begin{array}{r}
29168 \\
4949
\end{array}
$$
\] <br>

\hline
\end{tabular}



TABLE D-11
SALARIES OF CHEMISTS
by Work Function and Degree - Men

| WORK FUNCTION | HIGHEST DEGREE EARNED |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | BACHLORS | MASTERS | DOC TORS | TOTW |
| RED MGMT, MEDIAN ADMINIS MEAN COUNT | 30300 31603 256 | 31800. 32606. 204 | 37000 38969 796 | 36434. 1256 |
| BASIC RESEARCH | $\begin{gathered} 18000 \\ 18456 \\ 106 \end{gathered}$ | $\begin{array}{r} 22000 \\ 23754 \\ 108 \end{array}$ | $\begin{aligned} & 27200 \\ & 28188 \\ & 639 \end{aligned}$ | $\begin{array}{r} 264173^{\circ} \end{array}$ |
| APPLIED RED |  | 25000. 25141 442 | 28000. ${ }^{28662} 1$ | $\begin{gathered} 26393 \\ 2194 \end{gathered}$ |
| GEN MGMT, ADMINIS | 28600 33115 280 | $\begin{aligned} & 30000 \\ & 33016 \\ & 132 \end{aligned}$ | $\begin{aligned} & 36000 \\ & 42011 \\ & 274 \end{aligned}$ | $\begin{array}{r} 36649 \\ 686 \end{array}$ |
| TEACHING,RESRCH | 13000 13900 27 | 18200 18807 147 | $\begin{array}{r} 21100 \\ 22973 \\ 1368 \end{array}$ | $\begin{gathered} 22417 \\ 1547^{\circ} \end{gathered}$ |
| MKT, SALE, PUR,TCH | $\begin{aligned} & 26000 . \\ & 27770 \\ & 232 \end{aligned}$ | $\begin{array}{r} 28500 . \\ 29161^{\circ} \\ 113 \end{array}$ | $\begin{array}{r} 32000 . \\ 33571 \\ 91 \end{array}$ | $\begin{array}{r} 29342 \\ 436 \end{array}$ |
| PRD,QUAL CONTROL | 19900 20508 342 3 | 23000 23722 147 | 25000 26292 76 | $22122{ }^{\circ}$ |
| FORENSIC, LAB ANL | 18000* 18 | $\begin{array}{r} 20000 \text { • } \\ 21338 \\ 76 \end{array}$ | $\begin{gathered} 25000 \\ 26692 \\ 64 \end{gathered}$ | $\begin{array}{r} 20801 \\ 316 \end{array}$ |
| WRITE, ABST,LIBRY | 25500 24465 17 | 23000 25144 16 | 26100* | $264612^{\circ}$ |
| DATA PROCESSING | 22600 22355 11 | $\begin{gathered} 21000 \\ 23807 \\ 14 \end{gathered}$ | $\begin{gathered} 25000 \\ 25800 \\ 16 \end{gathered}$ | $24195$ |
| CONSULTING | 19500 25536 25 | $\begin{array}{r} 28200 \\ 29122 \\ 23 \end{array}$ | $\begin{aligned} & 35000^{\circ} \\ & 37224 \\ & 33^{\circ} \end{aligned}$ | $\begin{gathered} 31316 \\ 81 \end{gathered}$ |
| OTHER | $\begin{aligned} & 25000 \\ & 26176 \\ & 72 \end{aligned}$ | $\begin{array}{r} 25700 \\ 27605 \\ 41 \end{array}$ | 30000 34171 63 | $\begin{gathered} 29371 \\ 176 \end{gathered}$ |
| CGLUMN COUNT | $\begin{gathered} 24790 \\ 2091 \end{gathered}$ | $\begin{gathered} 26243 \\ 1463 \end{gathered}$ | $\begin{gathered} 29627 \\ 4654 \end{gathered}$ | $\begin{array}{r} 27792 \\ 8208 \end{array}$ |

by Work function and degree - Women

## HI GHEST DEGREE EARNED

\begin{tabular}{|c|c|c|c|c|}
\hline WORK FUNCTION \& BACHLORS \& MASTERS \& DOCTORS \& TOTAL <br>
\hline $\ldots-\quad \frac{1}{\frac{1}{1}}$ \& \& \&  \& <br>
\hline MEDIANI
RED MGMT, MEAN I
ADMINIS COUNTI \& $$
\begin{aligned}
& 25000 . \\
& 23911
\end{aligned}
$$ \& 25000
28622 \& 31000
31579
14. \& 28591* <br>
\hline BASIC RESEARCH \& 16800.
16985
41 \& 20100.
$1974{ }^{\text {a }}$, \& $$
\begin{array}{r}
21500 \\
21802 \\
65
\end{array}
$$ \& $$
\begin{array}{r}
19893^{\circ} \\
138
\end{array}
$$ <br>
\hline APPLIED RED \& 17000
18186
87 \& $$
\begin{array}{r}
19600 \\
20079 \\
57
\end{array}
$$ \& $$
\begin{array}{r}
23700 \\
25072 \\
43
\end{array}
$$ \& $$
\begin{gathered}
20347^{\circ} \\
187
\end{gathered}
$$ <br>
\hline GEN MGMT, ADMINIS $\frac{1}{\text { I }}$ \& 20000
21139

23 \& $$
\begin{gathered}
25000 \\
34600 \\
10
\end{gathered}
$$ \& \[

$$
\begin{array}{r}
28500 \\
28260 \\
15 \\
\hline
\end{array}
$$
\] \& 26169 <br>

\hline TEACHING, RESRCH \& 11500.
1317
12 \& 16000
16282
56 \& 17000
18462

127 \& $$
\begin{array}{r}
17507 . \\
195
\end{array}
$$ <br>

\hline MKT,SALE,PUR,TCH \& 18000
18671

1 \& $$
\begin{aligned}
& 12400 \\
& 21700 \\
& 2
\end{aligned}
$$ \& $\begin{array}{r}18000 \\ 20050 \\ \hline\end{array}$ \& \[

$$
\begin{array}{r}
191743^{\circ}
\end{array}
$$
\] <br>

\hline PRD, QUAL CONTROL \& 16000* \& 20400
19264

11 \& $$
\begin{aligned}
& 25500 \\
& 24033 \\
& 3
\end{aligned}
$$ \& \[

17193
\] <br>

\hline FORENSIC, LAB ANL \& 14500
14979

34 \& 17200
18694
18 \& 18700
20650
6 \& $16719{ }^{\circ}$ <br>

\hline WRITE, ABST,LIBRY \& $$
\begin{array}{r}
22800 \\
2238 \\
24
\end{array}
$$ \& \[

$$
\begin{array}{r}
18700 \\
18838 \\
16
\end{array}
$$

\] \& $\begin{array}{r}24300 \\ 29033 \\ \hline\end{array}$ \& \[

22017
\] <br>

\hline DATA PROCESSING \& $$
\begin{aligned}
& 19500 . \\
& 18300 \\
& 7
\end{aligned}
$$ \& \[

15200

\] \& \[

$$
\begin{array}{r}
167000 \\
18350 \\
2
\end{array}
$$

\] \& \[

17727
\] <br>

\hline CONSULTING \& $$
\begin{aligned}
& 13500 \\
& 15275 \\
& 4
\end{aligned}
$$ \& \& 0

0
0

0 \& $$
15275 \text { • }
$$ <br>

\hline OTHER \& $$
\begin{gathered}
17300 \\
18694^{\circ} \\
17
\end{gathered}
$$ \& \[

$$
\begin{array}{r}
20500 \\
18500 \\
10
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
24300 \\
25814 \\
7
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
20103 \\
34
\end{array}
$$
\] <br>

\hline COLUMN COUNT \& $$
\begin{array}{r}
17907 \\
332
\end{array}
$$ \& \[

$$
\begin{array}{r}
19731 \\
223
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
218280 \\
292
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
19739^{\circ} \\
847
\end{array}
$$
\] <br>

\hline
\end{tabular}




TABLE D-16
SALARIES OF CHEMISTS

BY WORK SPECIALTY AND DEGREE

\begin{tabular}{|c|c|c|c|c|}
\hline \multicolumn{5}{|c|}{HIGHEST DEGREE EARNED} \\
\hline WORK SPECIALTY \(\frac{1}{1}\) \& BACHLORS \& MASTERS \& DOC TORS \& \[
\begin{aligned}
\& \text { ROW } \\
\& \text { TOTAL }
\end{aligned}
\] \\
\hline ANALYTICAL MEDIANI \(\begin{gathered}\text { MEANI } \\ \text { COUNTI }\end{gathered}\) \& \[
\begin{aligned}
\& 20000 . \\
\& 21096 \\
\& 706
\end{aligned}
\] \& 22900
2380
368 \& 25000
26424
55 \& \[
\begin{gathered}
23521 \\
1631
\end{gathered}
\] \\
\hline INORG ANIC \& 24000
24055
78 \& 24300. \& 22400
23681
286 \& \[
\begin{array}{r}
23907 \\
411
\end{array}
\] \\
\hline ORGANIC \& 24500.
26581.
221. \& 25500. \& \begin{tabular}{l}
26000 \\
27961 \\
\hline 940
\end{tabular} \& \[
\begin{array}{r}
27574 \\
1359^{\circ}
\end{array}
\] \\
\hline POLYMER,MACROMUL \({ }^{-\frac{1}{I}}\) \& 25000
26420
337 \& 26000
27589

234 \& $$
\begin{aligned}
& 31000 . \\
& 32162 \\
& 560
\end{aligned}
$$ \& \[

$$
\begin{gathered}
29505 \\
1131
\end{gathered}
$$
\] <br>

\hline PHYSICAL, THEORET $\frac{\text { I }}{\text { I }}$ \& 25000
24705

20 \& 27000
26500
30

30 \& 25700. \& $$
\begin{array}{r}
26979 \\
520
\end{array}
$$ <br>

\hline BIOCHEMISTRY \& (17500. \& 20400. \& | 26500 |
| :---: |
| 28147 |
| 560 | \& \[

$$
\begin{array}{r}
26769 \\
660
\end{array}
$$
\] <br>

\hline AGRICUL, FOOD \& 22000. \& 24800. \& 30400
31722

183 \& $$
\begin{gathered}
28559 \\
386
\end{gathered}
$$ <br>

\hline PHARMA, MED, CLN $\frac{1}{\text { I }}$ \& $19500^{\circ}$
217860
150 \& 24000
24371
125 \& 30000.
32141

407 \& $$
\begin{array}{r}
28439 \\
682
\end{array}
$$ <br>

\hline CHEMSTRY, GENERAL \& $\begin{array}{r}23100 \\ 24854 \\ 248 \\ \hline\end{array}$ \& \[
$$
\begin{array}{r}
20000 \\
21837 \\
210
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
24100 \\
28220 \\
272
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
25242 \text { • } \\
730
\end{array}
$$
\] <br>

\hline CHEMSTRY, OTHER \& 22900
25781
328 \& 25000
27370
263 \& 30000
31570
478 \& 28761 ${ }^{1069}$ <br>

\hline NON- CHEMICAL \& $$
\begin{array}{r}
23500 \\
24354 \\
155
\end{array}
$$ \& \[

$$
\begin{array}{r}
23300 \\
275244^{\circ} \\
90
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
31500 \\
355444 \\
238
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
30459 \\
483
\end{array}
$$
\] <br>

\hline CCLUMN COEAN \& $$
\begin{array}{r}
23851 \\
2425
\end{array}
$$ \& 25379 \& \[

$$
\begin{array}{r}
29168 . \\
4949
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
27039 \\
9062
\end{array}
$$
\] <br>

\hline
\end{tabular}

TABLE D-17
SALARIES OF CHEMISTS
by Work Specialty and Degree - Men

| WORK SPECIALTY $\frac{I}{I}$ | HIGHEST DEGREE EARNED |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | BACHLORS | MASTERS | DOCTORS | $\begin{aligned} & \text { ROW } \\ & \text { TOTAL } \end{aligned}$ |
|  |  |  | $\frac{1}{1}$ |  |
| ANALYTICAL MEDIAN I $\begin{gathered}\text { MEAN } \\ \text { COUNT }\end{gathered}$ | $\begin{array}{cc} 21000 \\ 21694 \\ 601 \end{array}$ | $\begin{array}{r} 23500 \\ 24380^{\circ} \\ 319 \end{array}$ | $\begin{array}{r} 25000 \\ 26726 \\ 529 \end{array}$ | $\begin{gathered} 24124 \bullet \\ 1449^{\circ} \end{gathered}$ |
| INORGANIC $\quad \frac{-\frac{I}{I}}{\frac{1}{1}}$ | $\begin{gathered} 24000 \\ 24393 \\ 72 \end{gathered}$ | $\begin{gathered} 25000 \\ 25495 \\ 44 \end{gathered}$ | $\begin{array}{r} 23000 \\ 23920 . \frac{I}{I} \\ 271 \end{array}$ | $24 \frac{187}{387}$ |
| ORGANIC | $\begin{array}{r} 25000 \\ 27320 \\ 202 \end{array}$ | $\begin{gathered} 26000 \\ 27370^{\circ} \\ 181 \end{gathered}$ | $\begin{array}{r} 26000 \cdot \frac{I}{I} \\ 28127 \\ 912 \end{array}$ | $\begin{gathered} 27897 \\ 1295 \end{gathered}$ |
| POLYMER,MACROMOL $\frac{-1}{\text { I }}$ | 25000 2675 321 | $\begin{gathered} 26500 \\ 28000 \\ 221 \end{gathered}$ | $\begin{aligned} & 31000-\bar{I} \\ & 32361 \\ & 548 \frac{I}{I} \\ & \end{aligned}$ | $\begin{gathered} 29826 \\ 1090 \end{gathered}$ |
| PHYSICAL, THEORET $\frac{\text { I }}{\text { I }}$ | 25000 24922 18 | 27000 26472 29 | $\begin{aligned} & 26000 \\ & 27549 \\ & 437 \end{aligned}$ | $\begin{array}{r} 27387 \\ 484 \end{array}$ |
| BIOCHEMISTRY | 20000 18394 $35^{\circ}$ | $\begin{array}{r} 23000 \\ 22941 \\ 29 \end{array}$ | 27500 29108 489 | $28107$ |
| AGRICUL, FOOD $\quad-\frac{\mathrm{I}}{\text { I }}$ | $\begin{array}{cc} 23000 \\ 26374 \\ 105 \end{array}$ | $\begin{gathered} 25000 \\ 27447 \\ 70 \end{gathered}$ | $\begin{gathered} 30700 \\ 32084^{\circ} \\ 174 \end{gathered}$ | $\begin{array}{r} 29436 \\ 349 \end{array}$ |
| PHARMA, MED, CLN $\frac{-\frac{I}{I} \text { I }}{\text { I }}$ | $\begin{gathered} 21000 \\ 22959 \\ 120 \\ 1 \\ \hline \end{gathered}$ | $\begin{gathered} 24500 \\ 25513 \\ 94 \end{gathered}$ | $\begin{aligned} & 30000 \\ & 32579 \\ & 383 \end{aligned}$ | $\begin{gathered} 29532 \\ 597 \end{gathered}$ |
| CHEMSTRY, GENERAL | $\begin{array}{r} 24000 \\ 25615 \\ 227 \end{array}$ | $\begin{gathered} 22000 \\ 23226 \\ 167 \end{gathered}$ | 25000 29507 244 | $\begin{array}{r} 26478 \\ 638 \end{array}$ |
| CHEMSTRY, OTHER $\quad \frac{-\mathrm{I}}{\text { I }}$ | 24000 $27244{ }^{\circ} \mathrm{I}$ 281 | $\begin{array}{r} 26000 \\ 28092 \\ 240 \end{array}$ | $\begin{array}{ccc} 30000 \\ 31986 . & \text { I } \\ 448 & \frac{I}{I} \end{array}$ | $\begin{gathered} 29646 \\ 969 \end{gathered}$ |
| NON- <br> CHEMICAL |  | $\begin{array}{r} 27000 \\ 28630 \\ 69 \\ \hline \end{array}$ | $\begin{aligned} & 32500 . \\ & 36631 \\ & 219 \end{aligned}$ | $\begin{array}{r} 32353 \\ 397 \end{array}$ |
| COLUMN $\begin{gathered}\text { MEAN } \\ \text { COUNT }\end{gathered}$ | $\begin{gathered} 24790 \\ 2091 \end{gathered}$ | $\begin{aligned} & 26243 \\ & 1463 \end{aligned}$ | $\begin{gathered} 29628 \\ 4654 \end{gathered}$ | $\begin{array}{r} 27792 \\ 8208 \end{array}$ |

TABLE D-18
SALARIES OF CHEMISTS
by Work Specialty and Degree - Women

HIGHEST DEGREE EARNED


\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline WORK SPECIALTY \& 1 OR LESS \& 2-4 \& 5-9 \& 10-14. \& OF PRO
$$
15-19
$$ \& $$
20-24
$$ \& ENCE
$$
25-29
$$ \& 30-34 \& 35-39 \& $$
40 \text { DR }
$$
MORE \& $$
\begin{aligned}
& \text { ROH } \\
& \text { TRTAI }
\end{aligned}
$$ <br>
\hline  \& $$
1320 t
$$ \& 14500 \&  \& \& \& \& \& \& \& MORE \& TOTAL <br>
\hline  \& $$
\begin{array}{r}
13200 \\
12864 \\
28 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
14500 \\
14234 \\
116 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
18700 \\
17389 \\
-117 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
19600 \\
20392 \\
96
\end{array}
$$ \& $$
\begin{array}{r}
2400 \\
2407 \\
8
\end{array}
$$ \& $$
\begin{array}{r}
2560 \\
2626 \\
\hline
\end{array}
$$ \&  \& $$
\begin{array}{r}
26000 \\
26160 \\
57
\end{array}
$$ \& $$
\begin{array}{r}
27000 \\
27219 \\
31
\end{array}
$$ \& $$
\begin{aligned}
& 2590 \\
& 26720
\end{aligned}
$$ \& $$
\begin{array}{r}
21096 \\
706
\end{array}
$$ <br>
\hline INGRGANIC \& $$
\begin{array}{r}
9000 \\
9000 \\
1
\end{array}
$$ \& $$
\begin{array}{r}
15000 \\
14645 \\
11 \\
\hline
\end{array}
$$ \& 16000
16450
10 \& $$
\begin{array}{r}
22500 \\
21607 \\
3 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
24000 \\
25686 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
24000 \\
26175 \\
8
\end{array}
$$ \& $$
\begin{array}{r}
28500 \\
29329 \\
17
\end{array}
$$ \& $$
\begin{array}{r}
25000 \\
25590 \\
10
\end{array}
$$ \& $$
\begin{array}{r}
30000 \\
30388 \\
8
\end{array}
$$ \& $$
\begin{array}{r}
23800 \\
32900 \\
2
\end{array}
$$ \& $$
24055
$$ <br>
\hline ORG ANIC \& $$
\begin{array}{r}
11900 \\
13417 \\
\end{array}
$$ \& $$
\begin{array}{r}
14000 \\
14500 \\
32 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
18500 \\
18731 \\
26
\end{array}
$$ \& $$
\begin{array}{r}
22800 \\
22364 \\
11
\end{array}
$$ \& $$
\begin{array}{r}
26000 \\
25666 \\
32
\end{array}
$$ \& $$
\begin{array}{r}
28000 \\
30326 \\
27 \\
\hline
\end{array}
$$ \&  \& $$
\begin{array}{r}
30000 \\
37009 \\
22 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
30000 \\
37143 \\
14
\end{array}
$$ \& $$
\begin{array}{r}
30000 \\
35450 \\
8
\end{array}
$$ \& $$
\begin{array}{r}
26581 \\
221
\end{array}
$$ <br>
\hline POLYMER, MACROMCL \& 13800
13633
6 \& $$
\begin{array}{r}
14800 \\
15428 \\
36
\end{array}
$$ \& $$
\begin{array}{r}
18200 \\
19326 \\
38
\end{array}
$$ \& 22000
23043
40 \& $$
\begin{array}{r}
25000 \\
2768 \\
31
\end{array}
$$ \& $$
\begin{array}{r}
3000 \\
2978 \\
-\quad 3 \\
\hline
\end{array}
$$ \& $\begin{array}{r}27100 \\ 30969 \\ 65 \\ \hline\end{array}$ \& $$
\begin{array}{r}
28000 \\
28665 \\
43 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
30000 \\
34237 \\
35
\end{array}
$$ \& $$
\begin{array}{r}
35000 \\
34383 \\
6
\end{array}
$$ \& $$
\begin{array}{r}
26420 \\
337
\end{array}
$$ <br>
\hline PHYSICAL, THEORET $\frac{\text { I }}{\text { I }}$ \& $$
\begin{array}{r}
4700 \\
4700 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
13700 \\
16350 \\
\\
\hline
\end{array}
$$ \& 19000. \& 26200. \& $\begin{array}{r}25000 \\ 25900 \\ \hline\end{array}$ \& $\begin{array}{r}22400 \\ 22400 \\ \hline\end{array}$ \& $$
\begin{array}{r}
26000 \\
28900 \\
\\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
25800 \\
31650 \\
2 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
25000 \\
26500 \\
2
\end{array}
$$ \& $$
\begin{array}{r}
27100 \\
30050 \\
2
\end{array}
$$ \& $$
\begin{array}{r}
24705 \\
22
\end{array}
$$ <br>
\hline BIGCHEMISTRY I \& 11000
12250
2 \& $\begin{array}{r}10600 \\ 11136 \\ 14 \\ \hline\end{array}$ \& $$
\begin{aligned}
& 11600 \\
& 14111 \\
& 9
\end{aligned}
$$ \& 20500. \& 16300 \& $$
\begin{array}{r}
19200 \\
19700 \\
6
\end{array}
$$ \& $$
\begin{array}{r}
20700 \\
22375 \\
\quad 4
\end{array}
$$ \& $$
\begin{array}{r}
25000 \\
27700 \\
\hline
\end{array}
$$ \& 24000. \& $$
\begin{array}{r}
21000 \\
21000 \\
1
\end{array}
$$ \& $$
17168
$$ <br>
\hline AGRICUL, FOOD \& $\begin{array}{r}14100 \\ 14680 \\ \\ \hline\end{array}$ \& 15000
14567
21 \& $\begin{array}{r}18500 . \\ 16813 \\ \hline 15\end{array}$ \& $$
\begin{array}{r}
18400 \\
20670 \\
10
\end{array}
$$ \& $\begin{array}{r}23000 \\ 24760 \\ 15 \\ \hline\end{array}$ \& $$
\begin{array}{r}
28500 \\
34109 \\
11 \\
\hline
\end{array}
$$ \& $\begin{array}{r}25500 \\ 28183 \\ 18 \\ \hline\end{array}$ \& $$
\begin{array}{r}
29500 \\
30300 \\
16 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
34000 \\
34285 \\
13
\end{array}
$$ \& $$
\begin{array}{r}
40000 \\
44250 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
24997 \\
128
\end{array}
$$ <br>
\hline  \& $\begin{array}{r}12500 \\ 14480 \\ \hline\end{array}$ \& $\begin{array}{r}14700 \\ 14774{ }^{\circ} \\ \hline 1\end{array}$ \& $\begin{array}{r}16000 \\ 17156 \\ \hline\end{array}$ \& $\begin{array}{r}19000 \\ 18256 \\ \hline 16\end{array}$ \& $$
\begin{array}{r}
2340 \\
2607 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
24000 \\
23787 \\
\\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
25000 \\
29005 \\
21 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
36000 \\
34545 \\
11
\end{array}
$$ \& $$
\begin{aligned}
& 28000 \\
& 26111 \\
& 9
\end{aligned}
$$ \& $$
\begin{array}{r}
28800 \\
29267 \\
3
\end{array}
$$ \& $$
\begin{array}{r}
21786 \\
150
\end{array}
$$ <br>
\hline CHEMSTRY, GENERAL $\frac{\frac{I}{I}}{\frac{I}{1}}$ \& $$
\begin{array}{r}
11000 \\
11311 \\
9
\end{array}
$$ \& 15200
1439

23 \& 17500
17887

30 \& $$
\begin{array}{r}
20400 \\
21273 \\
\quad 26 \\
\hline
\end{array}
$$ \& \[

$$
\begin{array}{r}
2350 \\
2545 \\
3
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
25400 \\
27108 \\
26
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
27000 \\
29007 \\
\quad 45 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{gathered}
26300 \\
29617 \\
24
\end{gathered}
$$

\] \& \[

$$
\begin{array}{r}
29000 \\
36120 \\
25 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
26000 \\
25167 \\
6
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
24854 \\
248
\end{array}
$$
\] <br>

\hline CHEMSTRY, OTHER $\frac{1}{1}$ \& $\begin{array}{r}10000 \\ 10888 \\ -8 \\ \hline 13000\end{array}$ \& \[
$$
\begin{array}{r}
14400 \\
13922 \\
36 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
18300 \\
17717 \\
54 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
22000 \\
21953 \\
30
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
24000 \\
26222 \\
27
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
26100 \\
26615 \\
40
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
2600 \\
2798 \\
47
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
29900 \\
32131 . \\
42 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
29000 \\
37114 \\
35
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
32700 \\
57356 \\
9
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
25781 \\
328
\end{array}
$$
\] <br>

\hline | NGN- |
| :--- |
| CHEMICAL | \& \[

$$
\begin{array}{r}
13000 \\
13400 \\
8 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
14800 \\
14267 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
18800 \\
19300 \\
13 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
22500 \\
23578 \\
23 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
23500 \\
23917 \\
\hline
\end{array}
$$

\] \&  \& \[

$$
\begin{array}{r}
2700 \\
2858 \\
2
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
25000 \\
29826 \\
\quad 19 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{gathered}
35000 \\
34400 \\
10
\end{gathered}
$$

\] \& \[

$$
\begin{aligned}
& 23000 \\
& 33500
\end{aligned}
$$

\] \& \[

$$
\begin{gathered}
24354 \\
155^{\circ}
\end{gathered}
$$
\] <br>

\hline COLUMN CMEAN \& $$
\begin{array}{r}
12691 \\
79
\end{array}
$$ \& \[

$$
\begin{array}{r}
14330 \\
339
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
17722 \\
346
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
21302 \\
265
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
25221 \\
272
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
27488 \\
244
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
28303 \\
396
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
29856 \\
248
\end{array}
$$

\] \& \[

$$
\begin{gathered}
33260 \\
186
\end{gathered}
$$

\] \& \[

36728 .

\] \& \[

$$
\begin{array}{r}
23851^{\circ} \\
2420^{\circ}
\end{array}
$$
\] <br>

\hline
\end{tabular}




TABLE D-22

SALARIES OF CHEMISTS
by Geographic Region and Degree


See page 141 for list of states by geographic region.

See page 141 for list of states by geographic region.

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline OGRAPHIC \& REGION \& LESS \& \& \& 10-14 \& 15-19 \& 20-24 \& 25-29 \& 30-34 \& 35-39 \& 40 MOR <br>
\hline PACIFIC \& $$
\begin{aligned}
& \text { MEDIAA } \\
& \text { MEAN } \\
& \text { COUNT }
\end{aligned}
$$ \& $$
\begin{array}{r}
15500 \\
15500^{\circ} \\
\hline
\end{array}
$$ \& $$
\begin{gathered}
16000 \\
16342 \\
12
\end{gathered}
$$ \& $$
\begin{array}{r}
20000 . \\
19962 \\
29
\end{array}
$$ \& \& \& \& $$
\begin{aligned}
& 2800 \\
& 3073
\end{aligned}
$$ \& $$
\begin{array}{r}
31000 \\
33593 \\
15
\end{array}
$$ \& $$
\begin{array}{r}
30000 . \\
33800 \\
13
\end{array}
$$ \& $$
\begin{array}{r}
32500 \\
35167 \\
3
\end{array}
$$ <br>
\hline MOUNT AIN \& \& $$
\begin{aligned}
& 14100 \text { 14100. } \\
& 14
\end{aligned}
$$ \& $$
\begin{gathered}
15000 . \\
15950 . \\
6
\end{gathered}
$$ \& $$
\begin{array}{r}
18000 \\
18436 \\
11
\end{array}
$$ \& $$
\begin{aligned}
& 18500 \\
& 20413 \\
& \hline
\end{aligned}
$$ \& $$
\begin{array}{r}
24000 \\
22575
\end{array}
$$ \& 20000 \& $$
\begin{aligned}
& 2900 \\
& 3133
\end{aligned}
$$ \& 2400 \& 22800. \& 0.
0
0 <br>
\hline WEST NO. \& CENTRAL \& $$
\begin{gathered}
14100 . \\
14100 \\
1
\end{gathered}
$$ \& $$
\begin{array}{r}
16500 \\
16620 \\
10
\end{array}
$$ \& $$
\begin{array}{r}
19200 \\
19369 \\
13
\end{array}
$$ \& $$
\begin{array}{r}
18000 \\
22340 \\
10
\end{array}
$$ \& $$
234
$$ \& $$
\begin{aligned}
& 2320 \\
& 2454
\end{aligned}
$$ \& $$
\begin{aligned}
& 2650 \\
& 2682
\end{aligned}
$$ \& $$
3200(
$$ \& $$
\begin{array}{r}
34000 \\
34000 \\
\hline
\end{array}
$$ \& $$
\begin{aligned}
& 420000 \\
& 42000 \\
& \hline
\end{aligned}
$$ <br>
\hline WEST SO. \& CENTRAL \& $$
\begin{gathered}
16200 . \\
16120 . \\
5
\end{gathered}
$$ \& $$
5736
$$ \& $$
\begin{array}{r}
19800 \\
18680 \\
25
\end{array}
$$ \& $$
\begin{array}{r}
23000 \\
22988 \\
17
\end{array}
$$ \& $$
\begin{array}{r}
26000 \\
26392 \\
13
\end{array}
$$ \& 30 \& 286 \& 3300 \& 28000. \& $21200{ }^{21200}$ <br>
\hline EAST NO. \& CENTRAL \& 17000: \& 17200
17100
24 \& 18500
19088

58 \& $\begin{array}{r}21500 \\ 23042 \\ \hline 67\end{array}$ \& $$
\begin{array}{r}
4398 \\
44
\end{array}
$$ \& 57 \& 288 \& 2800 \& 27500

30496
-24 \& 40. <br>
\hline EAST SO. \& Central \& 0.
0

0 \& | 15000 |
| :--- |
| 14720 | \& (18400. \& 23500

24600 \& $\frac{1821}{22}$ \& 28653 \& 2400 \& 40000 \& | 25000 |
| :--- |
| 26000 | \& 0. <br>

\hline MIDDLE \& ATLANTIC \& $$
\begin{aligned}
& 15000 \\
& 14592 \\
& 12
\end{aligned}
$$ \& \[

$$
\begin{array}{r}
15600 \\
1584^{\circ} \\
34^{\circ}
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
19000 \\
19550 \\
58
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
22500 \\
23214 \\
56
\end{array}
$$

\] \& \[

$$
\begin{aligned}
& 25800 \\
& 27147 \\
& 47
\end{aligned}
$$
\] \& 2800

285

4 \& 2870 \& 1000 \& $$
\begin{array}{r}
28000 \\
33197 \\
31
\end{array}
$$ \& \[

$$
\begin{aligned}
& 000 \\
& 855 \\
& 11
\end{aligned}
$$
\] <br>

\hline SOUTH A \& ATLANTIC \& $$
\begin{gathered}
15000 \\
17125 \\
4
\end{gathered}
$$ \& \[

$$
\begin{gathered}
66000 \\
6300 \\
19
\end{gathered}
$$

\] \& \[

$$
\begin{array}{r}
19400 . \\
19529 . \\
41
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
23000 \\
24093 \\
\quad 28
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
2400 \\
2493 \\
\hline
\end{array}
$$

\] \& 3107 \& $\begin{array}{r}2800 \\ 3002 \\ \\ \hline\end{array}$ \&  \& \[

$$
\begin{array}{r}
30000 \\
32556 \\
16 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
3175 \\
\hline
\end{array}
$$
\] <br>

\hline NEW EN \& ENGLAND \& $$
\begin{gathered}
14000 . \\
14250 \\
2
\end{gathered}
$$ \& \[

$$
\begin{array}{r}
14000 \\
13940 \\
10
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
19200 \\
18976 \\
\hline 25 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
24500 \\
25492 \\
13
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
23100 \\
22285 \\
\quad 13
\end{array}
$$
\] \& 3800 \& 2600 \& 34500

3692 \& $$
\begin{array}{r}
28000 \\
31000 \\
\hline
\end{array}
$$ \& \[

$$
\begin{array}{r}
23700 \\
28650 \\
4 \\
\hline
\end{array}
$$
\] <br>

\hline CCLUMN \& MEAN \& 15780. \& 16040 \& $$
\begin{array}{r}
19346 \\
270^{\circ}
\end{array}
$$ \& 23374

.224 \& 2529 \& 2802 \& 2973 \& 3171 \& 31538
108 \& 38107. <br>
\hline
\end{tabular}



See page 141 for list of states by geographic region.
TABLE D-26
by Degree and Selected States of Residence



\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline state of residence \& \({ }_{\text {L }}^{\text {Le }}\) ORS \& \(2-\) \& 5-9 \& \({ }_{10-14}\) \& OF PROFE
15-19 \& OnAL EXP
\(20-24\) \& \[
\begin{aligned}
\& \text { ENCE } \\
\& 25-29
\end{aligned}
\] \& 30-34 \& 35-39 \& 40 MaR \& TOPTAL \\
\hline CALIfornia \(\begin{gathered}\text { MEDIAN } \\ \text { MEAN } \\ \text { MOUNT }\end{gathered}\) \& 155000: \& 16300
16808
13 \& 20000: \& 24700
24739
18. \& 26200
2715
19 \& 24300
24710
21 \& 28000
\(31568:\)
28
20 \& 30800
34250
12 \& 28800
35880
10 \& 22000. \& 264350 \\
\hline texas \& 11500: \& 15100. \& 203000: \& 23400
24180
10 \& \(\begin{array}{r}26000 \\ 26617 \\ \hline\end{array}\) \& \begin{tabular}{l}
30000 \\
30158. \\
\hline
\end{tabular} \& \begin{tabular}{l}
26000 \\
30200 \\
\hline
\end{tabular} \& 31600
33500
6 \& 4000
42000
3
3 \& \({ }_{21200}^{21200}\) \& 25533.
86 \\
\hline michigan \& 17600: \& 17500: \& 21000
21900
11 \& 23900. \& 24000
\(26814^{\circ}\) \& \(\begin{array}{r}2850 \\ 2847 \\ \hline\end{array}\) \& 33000
332929
13 \& \begin{tabular}{l}
30790 \\
32820 \\
\hline
\end{tabular} \& \(\begin{array}{r}31000 \\ 37020 \\ \hline\end{array}\) \& \(\begin{array}{r}24000 \\ 3150 \\ \hline\end{array}\) \& 26857. \\
\hline ILL INJIS \& 14700. \& 16600
17060
10 \& \(\begin{array}{r}17200 \\ 17500 \\ \hline 21\end{array}\) \& 20500
21511
18
18 \& \begin{tabular}{l}
23500 \\
26578 \\
18 \\
\hline
\end{tabular} \& 25000
28183 \& 24700
24527
15 \& \(\begin{array}{r}25000 . \\ 26795 \\ \hline 20\end{array}\) \& \begin{tabular}{l}
24000 \\
312888 \\
\hline 2380
\end{tabular} \&  \& \({ }^{23463} 12\) \\
\hline OHIO \& 18400. \& 16300: \& 19109: \& \(\begin{array}{r}21800 . \\ 24896 . \\ \hline 27\end{array}\) \& 24030
\(24600^{\circ}\)
13 \& 25000.
26200
-15 \& 28703
2983
-24 \& \(2890{ }^{280}\) \& 23800
2695
11 \& \(\begin{array}{r}26700 \\ 2685 \\ \hline\end{array}\) \& \({ }^{25261} 12{ }^{-}\) \\
\hline NEW YORK \& 12009:94, \& 15600.
16533
15 \& 19200
19026
19 \& \(\begin{array}{r}24300 \\ \\ \hline 2412 \\ \hline\end{array}\) \& \(\begin{array}{r}25000 \\ 25682 \\ \hline 11\end{array}\) \& 28000
\(2774{ }^{2}\)
1 \& 27700
28190 \& 28000
37075
1 \& \begin{tabular}{l}
28000 \\
35845 \\
\\
\hline
\end{tabular} \& 36400. \& 26232.
131 \\
\hline PENNS YLVANIA \& 17300: \& 16300
1420
10 \& 19000
19800
15 \& - 2805000 \& \(\begin{array}{r}24000 \\ 2627 \\ \hline\end{array}\) \& \(\begin{array}{r}30000 \\ 30922 \\ \hline\end{array}\) \& \(\begin{array}{r}28000 \\ 312050 \\ \hline\end{array}\) \& \begin{tabular}{l}
31000. \\
32133 \\
\hline
\end{tabular} \& \begin{tabular}{l}
26700 \\
27823 \\
\hline 13
\end{tabular} \& \({ }^{24000} \mathbf{2 0 0 0}\) \& 248580
111 \\
\hline NEW JERSEY \& 152000: \& \(\begin{array}{r}15500 \\ 16482 \\ \hline 11\end{array}\) \& \(\begin{array}{r}19000^{\circ} \\ 19723^{2} \\ \hline\end{array}\) \& \(\begin{array}{r}2400 . \\ 250.0 \\ \hline 23\end{array}\) \& - 260000 \& \(\begin{array}{r}28000 \\ 29742 \\ -26 \\ \hline 28\end{array}\) \& \(\begin{array}{r}29500 \\ 31579 \\ 33 \\ \hline\end{array}\) \& \(\begin{array}{r}33000 . \\ 32833 \\ \hline 24 \\ \hline-2172\end{array}\) \& \(\begin{array}{r}30000 \\ 35871 \\ \hline\end{array}\) \& 46000: \& \(28054{ }^{\circ}\)
188 \\
\hline column mean count \& \({ }^{15984}\) \& 16422- \& \({ }_{1961} 14\). \& \({ }^{23789}{ }^{2} 5\) \& 26565
113 \& \({ }^{28027} 11\) \& \(30193{ }^{16}\) \& \({ }^{31727} 9\) \& 32959

74 \& $3551{ }^{2}$ \& ${ }^{25984 .}$ <br>
\hline
\end{tabular}

TABLE D-29
by Selected States of Residence and Experience - Doctor's Degree

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{State of residence} \& \multicolumn{11}{|l|}{YEARS OF PROFESSIONAL EXPERIENCE} <br>
\hline \& LESS \& 2-4 \& 5-9 \& 10-14 \& 15-19 \& 20-24 \& 25-29 \& 30-34 \& 35-39 \& $4_{\text {MDRE }}{ }^{\text {a }}$ \& TOTAL <br>
\hline TEXAS \& 21000 \& 20800
18876
25 \& 21200 \& 28500
29040
50 \& $\begin{array}{r}31000 \\ 29871 \\ \hline\end{array}$ \& 31900
36019
26 \& 32400
35331
16

16 \& 产 32000. \& 34900
479
4 \& 35500
35500
1 \& 28317
208 <br>
\hline MICHIGAN \& ${ }^{12500}$ \& 22000
20892.

26 \& $\begin{array}{r}26100 \\ 25200 \\ \hline 36\end{array}$ \& | 25600 |
| :--- |
| 2590 |
| 46 | \& $\begin{array}{r}35000 \\ 33529 \\ \hline\end{array}$ \& 3780

37537
3

3 \& $\begin{array}{r}36000 \\ 36420 \\ 20 \\ \hline\end{array}$ \& $$
\begin{array}{r}
46930 . \\
42050 \\
8
\end{array}
$$ \& 38000

46517

6 \& O: \& $$
\begin{array}{r}
30088 \\
206
\end{array}
$$ <br>

\hline ILLINOIS \& 20000. \& $\begin{array}{r}21000 \\ 21256 \\ \hline 25\end{array}$ \& | 25000 |
| :--- |
| 23920 | \& 27600

28790
-39 \& $\begin{array}{r}26800 \\ 29161 \\ 28 \\ \hline\end{array}$ \& $\begin{array}{r}32000 \\ 33079 \\ 288 \\ \hline\end{array}$ \& 31700.
33866.
29 \& 33600
37045
20 \& 40000
41890
10 \& 45000. 41 \& 29432. <br>
\hline OHIO \& 21800.

21536 \& | 22000 |
| :--- |
| 21592 |
| 36 | \& $\begin{array}{r}23000 . \\ 23018 . \\ \hline\end{array}$ \& 26700

25397
67 \& $\begin{array}{r}29090 \\ 30520 \\ \hline 46 \\ \hline\end{array}$ \& 29090
3172
4
4 \& 28009 29819 \& 33099
3518
15 \& 34000
35173
11 \& 32700. ${ }^{\text {322330 }}$ \& 27537.
286 <br>
\hline NEW YORK \& 19200
17890
1 \& 22000
21010
41 \& $\begin{array}{r}25000 \\ 24340 \\ \hline\end{array}$ \& 26200
27515.
665 \& $\begin{array}{r}30000 \\ 33292 \\ \hline\end{array}$ \& 30000
31660
47 \& 36000.
39400.
4. \& 30000.
34533
21 \& $\begin{array}{r}36000 \\ 46367 \\ \hline 15\end{array}$ \& $56300 \cdot \frac{1}{1}$
1301000

3 \& $$
\begin{gathered}
30786 \\
376
\end{gathered}
$$ <br>

\hline PENNSYLVANIA \& 20000. \& $\begin{array}{r}22200 . \\ 207360 \\ \hline 33\end{array}$ \& $\begin{array}{r}25000 \\ 24149 \\ \hline\end{array}$ \& $\begin{array}{r}30000 \\ 29151 . \\ \hline 61\end{array}$ \& $\begin{array}{r}29300 \\ 31203 \\ \hline\end{array}$ \& $\begin{array}{r}32000 \\ 32966 \\ \hline 47\end{array}$ \& 33000.
38858.
26. \& 34100.
34558.

38. \& \begin{tabular}{l}
38200 <br>
36513 <br>
\hline 16

 \& 

40000 <br>
47000 <br>
\hline
\end{tabular} \& 29905

350 <br>

\hline NEN JERSEY \& $$
\begin{array}{r}
22000 . \\
21867 \\
\hline
\end{array}
$$ \& \[

$$
\begin{array}{r}
23000 \\
22429 \\
\quad 24 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
25500 \\
26227 \\
\hline
\end{array}
$$

\] \&  \& \[

$$
\begin{array}{r}
32000 \\
34123 \\
-\quad 53 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
354000 \\
40379 \\
-57
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
39000 \\
42589 \\
-37 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{array}{r}
40000 \\
43295 \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{gathered}
40000 \\
38013 \\
16 \\
\hline
\end{gathered}
$$

\] \& \[

$$
\begin{gathered}
42000 \\
42588 \\
\hline
\end{gathered}
$$

\] \& \[

$$
\begin{array}{r}
33607 \\
372
\end{array}
$$
\] <br>

\hline COLUMN COUAN \& $19271{ }^{\circ}$ \& 21311 $25{ }^{\circ}$ \& 24102 \& 282688 \& 31573

335 \& $3481{ }^{1}$ \& 37074. \& 36642 \& $39516{ }^{\circ}$ \& $51319{ }^{\circ}$ \& $$
\begin{gathered}
30970 . \\
2411
\end{gathered}
$$ <br>

\hline
\end{tabular}

TABLE D-30
SALARIES OF CHEMISTS
BY NUMBER OF SUBORDINATES (PROFESSIONALS AND TECHNICIANS)
AND EXPERIENCE - BACHELOR's DEGREE

TABLE D-31
SALARIES OF CHEMISTS
By NUMBER OF SUBORDINATES (PROFESSIONALS AND TECHNICIANS)
and Experience - Master's Degree






SALARIES OF CHEMISTS
(EXCLUDING TEACHERS AND SELF-EMPLOYED)
BY DEGREE AND EXPERIENCE - MEN


SALARIES OF CHEMISTS
Employed Full-time and Actively Seeking Other Employment
By DEGREE AND EXPERIENCE

by Degree and Experience
SALARIES OF MINORITY CHEMISTS

by Employer and Years since Ph.D.
TABLE D-42
SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY DEGREE AND EXPERIENCE

TABLE D-43
SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY DEGREE AND EXPERIENCE - MEN


BY WORK FUNCTION AND EXPERIENCE - BACHELOR'S DEGREE

by Work Specialty and Experience - Bachelor's Degree

by Work Specialty and Experience - Doctor's Degree

TABLE D-53
SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Geographic Region and Experience - Doctor's Degree

See page 141 for list of states by geographic region.
SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Degree and Number of Subordinates (Professionals and Technicians)

##  <br> 

SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Degree and Number of Subordinates （Professionals and Technicians）－Men
NUMBER OF PROFESSIONALS AND TECHNICIANS
RGW
TOAL
25485
1661
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MASTERS
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SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Degree and Number of Subordinates
(Professionals and Technicians) - Women
NUMBER OF PROFESSIONALS AND TECHNICIANS

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SALARIES OF CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by DEGREE AND TOTAL NUMbER OF SUbORdinates - Women
By Number of Subordinates (Professionals) and Experience - Bachelor's Degree


[^1]BY NUMBER OF SUBORDINATES (PROFESSIONALS)
AND EXPERIENCE - MASTER'S DEGREE
SALARIES OF RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
TABLE D-62
SALARIES OF RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
By NUMBER OF SUBORDINATES (PROFESSIONALS) AND EXPERIENCE - DOCTOR's DEGREE
YEARS OF PROFESSIONAL EXPERIENCE

|  |  |
| :---: | :---: |
|  |  |



$29862^{\circ}$
33909.
38657.
311
46689
187
$\underset{\substack{\operatorname{inc} \\ \text { Nin }}}{ }$
SALARIES OF RED CHEMISTS in PRIVATE INDUSTRY or business
BY NUMBER OF SUBORDINATES (TECHNICIANS)
AND EXPERIENCE - BACHELOR'S DEGREE


[^2]TABLE D-64
SALARIES OF RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Number of SUbordinates (TEChNiCIANS)
and Experience - Master's Degree

SALARIES OF RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY NUMBER OF SUBORDINATES (TECHNICIANS) and Experience - Doctor's Degree
Note: Includes those in basic research, applied R\&D, and management or administration or R\&D.
SALARIES OF RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY NUMBER OF SUBORDINATES (PROFESSIONALS AND TECHNICIANS)
AND EXPERIENCE -NASTER'S DEGREE and Experience -Master's Degree

Note: İncludes those in basic research, applied $R \& D$, and management or administration of $R \& D$.
TABLE D-68
SALARIES OF RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY NUMBER OF SUBORDINATES (PROFESSIONALS AND TECHNICIANS) AND EXPERIENCE - DOCTOR'S DEGREE

Note: Includes those in basic research, applied $R \& D$, and management or administration or $R \& D$.
TABLE D-69
SALARIES OF NON-R\&D CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Number of SUbordinates (Professionals and Technicians)
and Experience - Bachelor's Degree
TABLE D 6


SALARIES OF NON-RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY NUMBER OF SUBORDINATES (PROFESSIONALS AND TECHNICIANS)
AND EXPERIENCE - MASTER'S DEGREE

TABLE D-71
SALARIES OF NON-RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
BY NUMBER OF SUBORDINATES (PROFESSIONALS AND TECHNICIANS)
AND EXPERIENCE - DOCTOR'S DEGREE

TABLE D-72
by Total Number of Subordinates
and Experience - Bachelor's Degree
SALARIES OF NON-RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS

SALARIES OF NON-ReD CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by TOTAL Number of Subordinates
and Experience - Master's Degree

TABLE D-74
SALARIES OF NON-RED CHEMISTS IN PRIVATE INDUSTRY OR BUSINESS
by Total Number of SUBORdinates
and EXPERIENCE - DOCTOR's DEGREE

TABLE D-75
SALARIES OF CHEMISTS IN COLLEGE OR UNIVERSITY
BY WORK FUNCTION AND EXPERIENCE - BACHELOR'S OR MASTER'S DEGREE YEARS OF PROFESSIONAL EXPERIENEE

ROW
TOTAL
16779
43
19250
4
4
17273
15
$15167^{\circ}$
14840
13496。
0.0
0
$\infty$
$\infty$
$\infty$
13222.
18183.
83
18663.
14500
10
16945
226




SALARIES OF CHEMICAL ENGINEERS
BY EMPLOYER AND EXPERIENCE - BACHELOR'S DEGREE


YEARS OF PROFESSIONAL EXPERIENCE

TABLE D-86
SALARIES OF CHEMICAL ENGINEERS
by WORK Function and Experience - Master's Degree

TABLE D-87
YEARS OF PROFESSIONAL EXPERIENCE

TABLE E-1
1977 INCOME OF CHEMISTS
BY DEGREE AND EXPERIENCE

BY EMPLOYER AND EXPERIENCE - BACHELOR'S DEGREE

|  | YEARS OF PROFESSIONAL EXPERIENCE |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  MEDIANI <br> MANUFAC- MEANI <br> TURING COUNTI | $\begin{array}{r}12500 \\ 12438 \\ \hline\end{array}$ | $\begin{array}{r}14700 \\ 14568 \\ \hline 209 \\ \hline\end{array}$ | $\begin{array}{r} 17600 \\ 18415 \\ 225 \\ \hline \end{array}$ | $\begin{array}{r} 21500 \\ 22338 \\ 175 \\ \hline \end{array}$ | $\begin{array}{r} 25200 \\ 2649 \\ 188 \\ \hline \end{array}$ | $\begin{array}{r} 28000 \\ 29488 \\ 169 \end{array}$ | $\begin{array}{r} 2740 \\ 3017 \\ 28 \end{array}$ | $\begin{array}{r} 2900 \\ 3243 \\ 17 \end{array}$ | $\begin{array}{r} 30300 \\ 37090 \\ 129 \end{array}$ | $\begin{array}{r} 31000 \\ 40924 \\ 41 \end{array}$ | $\begin{gathered} 25992 \\ 1628 \end{gathered}$ |
| NONMANUFACTURING $\frac{1}{\frac{1}{1}}$ | $\begin{array}{r} 8800 \\ 10050 \\ \hline \end{array}$ | $\begin{array}{r} 13500 \\ 13083 \\ 29 \\ \hline \end{array}$ | $\begin{array}{r} 17300 \\ 17694 \\ 32 \\ \hline \end{array}$ | $\begin{array}{r} 18500 \\ 19183 \\ 18 \end{array}$ | $\begin{array}{r} 22600 \\ 28121 \\ \hline \end{array}$ | $\begin{aligned} & 23200 \\ & 26057 \end{aligned}$ | $\begin{array}{r} 2700 \\ 2969 \\ \hline \end{array}$ | $\begin{array}{r} 27000 \\ 27207 \\ \hline \end{array}$ | $\begin{array}{r} 28300 \\ 43133 \\ 21 \\ \hline \end{array}$ |  | $\begin{gathered} 24256 \\ 175 \end{gathered}$ |
| COLLEGE, UNI VRSTY | 9500 10900 | $\begin{array}{r} 10000 \\ 9350 \\ 18 \\ \hline \end{array}$ | $\begin{array}{r} 10600 \\ 10860 \\ 10 \\ \hline \end{array}$ | $\begin{array}{r} 16000 \\ 17350 \\ \hline \end{array}$ | $\begin{aligned} & 20000 \\ & 19866 \end{aligned}$ |  | $\begin{array}{r} 20000 \\ 25975 \\ \hline \end{array}$ | $\begin{array}{r} 16000 \\ 16580 \\ \hline \end{array}$ | $\begin{array}{r} 21000 \\ 23600 \\ 4 \end{array}$ | - | $\begin{array}{r} 14485 \\ 61 \end{array}$ |
| HIGH SCH, OTHR SC | $\begin{array}{r} 10000 \\ 9650 \\ 4 \end{array}$ | $\begin{array}{r} 8100 \\ 8925 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 10500 \\ 12417 \\ \quad 6 \\ \hline \end{array}$ | $\begin{array}{r}13000 \\ 14000 \\ 2 \\ \hline\end{array}$ | 13000 |  | $\begin{array}{r} 18000 \\ 20500 \end{array}$ |  | 0 0 0 | $\begin{array}{r} 29000 \\ 29000 \\ 1 \\ \hline \end{array}$ | $\begin{gathered} 13100 . \\ 21 \end{gathered}$ |
| FEDERAL GOVERNMT $\frac{\text { I }}{\text { I }}$ | 15000 16333 3 | $\begin{array}{r}13300 \\ 13960 \\ 15 \\ \hline\end{array}$ | 16600 18010 21 | $\begin{array}{r}23000 \\ 22200 \\ 15 \\ \hline\end{array}$ | $\begin{aligned} & 24500 \\ & 24218 \\ & 34 \end{aligned}$ | $\begin{array}{r} 2800 \\ 2915 \\ 24 \end{array}$ | $\begin{array}{r} 27000 \\ 29121 \\ 33 \end{array}$ | $\begin{array}{r} 28600 \\ 30428 \\ 18 \end{array}$ | $\begin{array}{r} 29600 \\ 31406 \\ 18 \end{array}$ | $\begin{array}{r} 23900 \\ 28450 \\ 2 \end{array}$ | $\begin{array}{r} 25266 \\ 183 \end{array}$ |
| STATE, LOCL GOV I | 13600 13600 1 | 12000 12715 13 | $\begin{array}{r} 17000 \\ 17829 \\ 21 \end{array}$ | $\begin{array}{r} 16800 \\ 18381 \\ \hline \end{array}$ | 18500 | 1850 | 20000 20800 14 | $\begin{array}{r} 23800 \\ 25300 \\ 6 \end{array}$ | $\begin{array}{r} 17600 \\ 18200 \\ 4 \\ \hline \end{array}$ |  | $\begin{gathered} 18442 \\ 91 \end{gathered}$ |
| SELF- EMPLOYED $\frac{\text { I }}{\text { I }}$ | $\begin{array}{r} 10000 \\ 10000 \\ 1 \end{array}$ | $\begin{array}{r}12000 \\ 13200 \\ 2 \\ \hline\end{array}$ | 16800 25900 2 | $\begin{array}{r}19700 \\ 23233 \\ \hline 3\end{array}$ |  | $\begin{array}{r} 30000 \\ 57500 \\ \\ \hline \end{array}$ |  | $\begin{array}{r} 39000 \\ 66750 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 33000 \\ 32250 \\ \\ \hline \end{array}$ | $\begin{array}{r} 12000 \\ 12000 \\ \quad 1 \\ \hline \end{array}$ | $\begin{array}{r} 39479 \\ 29 \end{array}$ |
| HOSPITAL, IND LAB I | 10400 10400 1 | 12000 12064 14 | 13300 14727 11 | 16000 16300 | $\begin{array}{r} 18500 \\ 21750 \\ 2 \\ \hline \end{array}$ | 21000 | $\begin{array}{r} 23000 \\ 29000 \\ 8 \end{array}$ | $\begin{array}{r}16900 \\ 32983 \\ \hline\end{array}$ |  |  | $\begin{array}{r} 19500 . \\ 53 \end{array}$ |
| NONPRFT RES INST $\frac{1}{1}$ | $\begin{array}{r} 12000 \\ 12000 \\ \quad 1 \end{array}$ | $\begin{array}{r} 11500 \\ 12338 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 13900 \\ 14963 \\ 8 \end{array}$ | 17000 18064 14 | $\begin{array}{r} 2300 \\ 2110 \\ \hline \end{array}$ | $\underline{1900}$ | $\begin{array}{r} 2400 \\ 2504 \\ \hline \end{array}$ | $\begin{array}{r} 25000 \\ 25667 \\ \hline \end{array}$ | ( 0 | $\begin{array}{r} 38000 \\ 38000 \\ 1 \end{array}$ | $19020$ |
| OTHER | $\begin{array}{r} 7000 \\ 10500 \\ 2 \end{array}$ | $\begin{array}{r} 12000 \\ 12086 \\ 7 \end{array}$ | $\begin{aligned} & 13500 \\ & 13500 \end{aligned}$ | $\begin{aligned} & 21600 \\ & 21775 \end{aligned}$ | $\begin{array}{r} 2100 \\ 1986 \\ \hline \end{array}$ | $\begin{array}{r} 2200 \\ 2200 \\ \hline \end{array}$ |  | $\begin{array}{r} 2500 \\ 2500 \\ \hline \end{array}$ | 0 0 0 | 0 | $\begin{array}{r} 16040 \\ 20 \end{array}$ |
| COLUMN MEAN | $\begin{array}{r} 11896 \\ 48 \end{array}$ | $\begin{array}{r} 13735 \\ 319 \end{array}$ | $\begin{array}{r} 17781 \\ 337 \end{array}$ | $\begin{array}{r} 21356 \\ 257 \end{array}$ | $\begin{array}{r} 25854 \\ 267 \end{array}$ | $\begin{array}{r} 28774 \\ 234 \end{array}$ | $\begin{array}{r} 29617 \\ 380 \end{array}$ | $\begin{array}{r} 31914 \\ 237 \end{array}$ | $\begin{gathered} 36364 \\ 181 \end{gathered}$ | $\begin{array}{r} 39636 \\ 50 \end{array}$ | $\begin{array}{r} 24871 \\ 2310 \end{array}$ |

TABLE E-3
1977 INCOME OF CHEMISTS
by Employer and experience - Master's Degree


| EMPLOYER | YEARS OF PROFESSIONAL EXPERIENCE |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  | MORE | TOTAL |
| MANUFAC- MEDIANI TURING COUNTI | $\begin{array}{r} 20000 \\ 18674 \\ 35 \\ \hline \end{array}$ | $\begin{array}{r} 22000 . \\ 22322 \\ 232 \\ \hline \end{array}$ | $\begin{array}{r} 26000 . \\ 26521 \\ 468 \\ \hline \end{array}$ | $\begin{array}{r} 32000 \\ 32615 \\ 411 \\ \hline \end{array}$ | $\begin{array}{r} 34000 \\ 36037 \\ \quad 283 \end{array}$ | $\begin{gathered} 36000 \\ 40178 \\ 280 \end{gathered}$ | $\begin{array}{r} 3850 \\ 4338 \\ 247 \end{array}$ | $\begin{array}{r} 4120 \\ 4915 \\ 14 \end{array}$ | $\begin{array}{r} 4300 \\ 4627 \\ 10 \end{array}$ | $\begin{array}{r} 47700 \\ 59728 \\ 28 \end{array}$ | 34668* |
| NONMANUFACTURING | $\begin{array}{r}14500 \\ 1663 \\ \hline\end{array}$ | $\begin{array}{r}22000 \\ 21269 \\ \hline 29\end{array}$ | $\begin{array}{r}24600 \\ 24959 \\ \hline 37 \\ \hline\end{array}$ | $\begin{array}{r} 29100 \\ 30247 \\ \hline \end{array}$ | $\begin{array}{r} 35000 \\ 369.53 \\ -19 \\ \hline \end{array}$ | $\begin{array}{r}32000 \\ 38959 \\ \hline\end{array}$ | 30000 35940 20. 20 | 29350 | 48000 54514 | $\begin{gathered} 60000 \\ 60000 \\ 1 \end{gathered}$ | ${ }^{30962} 177$ |
| COLLEGE, UNIVRSTY | $12200{ }^{11557}$ | 15900 <br> 15965 <br> 127 | 18600 19740 342 | 23000 23897 354 | 26000 26627 289 | 29000 30223 233 | $\begin{array}{r} 30500 \\ 33060 \\ 185 \\ \hline \end{array}$ | $\begin{array}{r}31000 \\ 3359 \\ 123 \\ \hline\end{array}$ | 3800 3833 7 | 35000 3564 11 | 26100. |
| HIGH SCH,OTHR SC I | 0. | $\begin{array}{r}0 . \\ 0 \\ 0 \\ \hline\end{array}$ | $\begin{array}{r}15200 \\ 17600 . \\ \hline 6 .\end{array}$ | $\begin{array}{r}15000 \\ 16000 \\ \hline\end{array}$ | $\begin{array}{r}24000 \\ 19333 \\ 3 \\ \hline\end{array}$ | $\begin{array}{r}23200 \\ 19933 \\ \hline\end{array}$ | $\begin{array}{r} 15300 \\ 32650 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r}16800 \\ 16800 \\ \hline\end{array}$ | $\begin{array}{r}36000 \\ 36000 \\ \hline\end{array}$ |  | $\begin{gathered} 20500 . \\ 19 \end{gathered}$ |
| FEDERAL GUVERNMT |  | 22000 <br> 2200 <br> 24 | 24600 25136. 70 | $\begin{array}{r}28800 \\ 29007 \\ \hline 44\end{array}$ | $\begin{array}{r}32500 \\ 33253 \\ \hline 43\end{array}$ | 36000 <br> 35679 | 39000 38622 4 | $\begin{array}{r}37000 \\ 38388 \\ \hline 26 \\ \hline\end{array}$ | $\begin{array}{r}40000 \\ 39441 \\ \hline 17\end{array}$ | $\begin{array}{r}34000 \\ 31433 \\ 3 \\ \hline\end{array}$ | 31923. |
| STATE, LOCL GOV |  | 16000 17000 5 | 18300 19125 12 | 25000. | $\begin{array}{r}28700 \\ 27800 \\ \hline\end{array}$ | $\begin{array}{r}25500 \\ 24440 \\ \hline\end{array}$ | $\begin{array}{r}23000 \\ 26375 \\ \hline\end{array}$ | $\begin{array}{r}19900 \\ 21200 \\ \hline\end{array}$ | $\begin{array}{r}25000 \\ 30750 \\ \hline\end{array}$ | $\begin{array}{r}39000 \\ 39000 \\ \hline\end{array}$ | 23812. |
| SELF- EMPLOYED |  | 18900 | $\begin{array}{r}8000 \\ 16500 \\ \hline 2300\end{array}$ | $\begin{array}{r}36000 \\ 34250 \\ 4 \\ \hline\end{array}$ | 65000 77000 5 | $\begin{array}{r}20000 \\ 26000 \\ \hline\end{array}$ | 280000. | 30000 30000 -1 | $\begin{array}{r}45000 \\ 46000 \\ \hline\end{array}$ | $\begin{array}{r}50000 \\ 50000 \\ \hline\end{array}$ | $40550$ |
| HOSPITAL, IND LAB | $\begin{gathered} 5000 \\ 5000 \\ 1 \end{gathered}$ | $\begin{array}{r}18900 \\ 20563 \\ \hline 19500\end{array}$ | $\begin{array}{r}23000 \\ 2284^{\circ} \\ 27^{\circ} \\ \hline\end{array}$ |  |  | $\begin{array}{r} 30000 \\ 39125 \\ \hline \end{array}$ | $\begin{array}{r} 30000 \\ 44000 \\ 6 \end{array}$ | $\begin{array}{r} 40000 \\ 42000 \\ 3 \end{array}$ | $\begin{array}{r} 36000 \\ 36000 \\ \hline \end{array}$ | $\begin{gathered} 36000 \\ 36000 \\ 1 \end{gathered}$ | $2974{ }^{\text {8 }}$ |
| NONPRFT RES INST |  | 185000. | $\begin{array}{r}23000 \\ 23700 \\ \hline 24 \\ \hline\end{array}$ | $\begin{array}{r}25400 \\ 24942 \\ \hline 19 \\ \hline\end{array}$ | $\begin{array}{r} 27000 \\ 28406 \\ -\quad 34 \\ \hline \end{array}$ |  | $\begin{array}{r} 35000 \\ 36804 \\ 23 \\ \hline \end{array}$ | $\begin{array}{r} 38000 \\ 37530 \\ 10 \\ \hline \end{array}$ | $\begin{array}{r} 65000 . \\ 65000 \\ 1 \end{array}$ | $\begin{aligned} & 31200 \\ & 35700 \\ & 3 \end{aligned}$ | $\begin{gathered} 28956 \\ 158 \end{gathered}$ |
| OTHER | $\begin{array}{r} 22000 \\ 22000 \\ \hline \end{array}$ | $\begin{array}{r}18000 \\ 17820 \\ \hline\end{array}$ | 240090. | $\begin{array}{r}19000 \\ 25333^{\circ} \\ \hline\end{array}$ | $\begin{array}{r} 24000 \\ 24000 \\ \hline \end{array}$ | $\begin{array}{r} 30000 \\ 38750 \\ 2 \end{array}$ | $\begin{array}{r} 52000 \\ 48300 \\ 5 \end{array}$ | $\begin{aligned} & 22900 \\ & 29450 \\ & 2 \end{aligned}$ |  |  | $\begin{gathered} 29250 \\ 26 \end{gathered}$ |
| COLUAN COUEAN | $1794_{51}{ }^{\circ}$ | $20153$ | 23685 ${ }^{\text {- }}$ | $\begin{array}{r} 285581 \\ 891 \end{array}$ | 31677 689 | $\begin{gathered} 35536^{\circ} \\ 630^{\circ} \end{gathered}$ | $38648{ }^{\circ}$ | $41103$ | $\begin{array}{r} 43074^{\circ} \\ 215 \end{array}$ | ${ }_{49}$ | $\begin{array}{r} 308388 \\ 4830 \end{array}$ |



| WORK FUNCTION | $\begin{aligned} & \text { LOR } \\ & \text { LESS } \end{aligned}$ | 2-4 | 5-9 | 10-14 | 15-19 | NAL EXP 20-24 | NCE 25-29 | 30-34 | 35-39 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  | MORE | TOTAL |
| $\begin{array}{cr} \text { RED MGMT, } & \text { MEDIANI } \\ \text { MEANI } \\ \text { ADHIS } & \text { MEUNTI } \\ & \text {-I. } \end{array}$ |  | $\begin{array}{r} 17500 \\ 80 \\ -\quad 2 \\ \hline \end{array}$ | $\begin{array}{r} 22000 . \\ 21863 \\ 19 \end{array}$ | $\begin{array}{r} 24700 \\ 26336 \\ \quad 25 \\ \hline \end{array}$ | $\begin{aligned} & 3100 \\ & 3244 \end{aligned}$ | $\begin{array}{r} 3700 \\ 3715 \\ -\quad 2 \end{array}$ |  | $\begin{array}{r} 34000 \\ 4025 \\ \hline 28 \\ \hline \end{array}$ |  | $\begin{aligned} & 32000 . \frac{1}{1} \\ & 36973 \\ & 11 \\ & \hline \end{aligned}$ | $\begin{array}{r} 341860 \\ 206 \end{array}$ |
| BASIC RESEARCH $\frac{1}{\text { I }}$ | 15000. | $\begin{array}{r} 15300 \\ 15914 \\ 14 \end{array}$ | $\begin{array}{r} 17100 . \\ 16737 \\ 27 \end{array}$ | $\begin{array}{r} 21000 \\ 21810 \\ 21 \end{array}$ | 210 | $\begin{array}{r} 25500 \\ 25292 \\ 13 \end{array}$ | $\begin{array}{r} 25500 \\ 27350 \\ \hline \end{array}$ | $\begin{array}{r}27000 \\ 2665 \\ \hline\end{array}$ | 26000 | $\begin{array}{r} 43700-1 \\ 39940 . \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 22335 \\ 136 \end{array}$ |
| APPLIED RED | 14500 18538 16 | $\begin{array}{r}16500 \\ 16364 \\ \hline 47\end{array}$ | 19000. | $\begin{array}{r} 23800 \\ 24285 \\ 71 \end{array}$ | 250 | $\begin{array}{r} 2770 \\ 2770 \\ 5 \end{array}$ | $\begin{array}{r} 2940 \\ 3022 \\ -8 \\ \hline \end{array}$ | $\begin{array}{r} 30000 . \\ 30551 \\ \hline \\ \hline \end{array}$ | $\begin{array}{r} 28600 \\ 29014 \\ \quad 36 \end{array}$ | $\begin{array}{r} 46000 \\ 46000 \\ 1 \end{array}$ | $24695$ |
| GEN MGMT,ADMINIS | ${ }^{23000}{ }^{23000}$ | 18600. | $\begin{array}{r}21700 . \\ 22319 \\ \hline\end{array}$ | 28400 29642 26 | 36000 36850 10 | $\begin{array}{r}31000 \\ 35386 \\ \hline\end{array}$ | $\begin{array}{r} 32000 \\ 38760 \\ -20 \\ \hline \end{array}$ | $\begin{array}{r} 41500 \\ 44717 \\ 18 \end{array}$ | $\begin{array}{r} 39600 \\ 49878 \\ 18 \end{array}$ | 24000- ${ }^{212000}$ | $\begin{gathered} 361040 \\ 139 \end{gathered}$ |
| TEACHING, RESRCH | 15600. | $\begin{array}{r}12000 \\ 12888 \\ \hline 17\end{array}$ | $\begin{array}{r}14000 \\ 1464{ }^{\circ} \\ \hline 29 \\ \hline\end{array}$ | 18600 18803 37 | - 39 | $\begin{array}{r}22400 \\ 24128 \\ \hline\end{array}$ | 2400 2371 26 | $\begin{array}{r}23500 \\ 24875 \\ \hline 8 . \\ \hline\end{array}$ | 21000 <br> 22589 | 25900. | 19783. 199 |
| MKT, SALE, PUR,TCH | - | 2900. | 22000. | 24500. | $\begin{array}{r} 31100 \\ 33972 \\ 18 \end{array}$ | 32000 32113 16 | 3040 3631 2 | $\begin{gathered} 30000 \\ 30741 \\ 17 \end{gathered}$ | $\begin{array}{r} 37700 \\ 42740 \\ 5 \end{array}$ | $33000-\frac{1}{1}$ 36500 2 | $\begin{gathered} 31005 \\ 114 \end{gathered}$ |
| PRD, QUAL CONTROL | $\begin{array}{r} 16500 \\ 14633 \\ 3 \end{array}$ | $\begin{array}{r} 16507 \\ \hline \end{array}$ | $\begin{array}{r} 18500 \\ 19917 \\ \hline \end{array}$ | $\begin{array}{r} 19400 \\ 19588 \\ 16 \end{array}$ | $\begin{array}{r} 23000 \\ 23425 \\ \hline \\ \hline \end{array}$ | 30000 33450 16 | 29000 3013 18 | $\begin{array}{r}32200 . \\ 32056 . \\ \hline 9\end{array}$ | 23800 <br> 2529. <br> 14 | 27000. ${ }^{27500}$ | ${ }^{24170}{ }^{14}$ |
| FORENSIC, LAB ANL I | $\begin{array}{r} 8000 \\ 8000 \\ \hline \end{array}$ | 14200. 16421 14 | 19600. <br> 20814 <br> 12 | 20000. | 23500 24300 8 | $\begin{array}{r}22000 \\ 22492 \\ \hline\end{array}$ | 20700 | $\begin{array}{r}27000 \\ 27125 . \\ \hline\end{array}$ | 27000. | 22200- | 21446* |
| WRITE,ABST, LIBRY | $\begin{array}{r} 17300 \\ 17300 \\ \hline \end{array}$ | $\begin{array}{r}12500 \\ 13600 \\ \\ \hline\end{array}$ | 18000. | 19900. | 18300 19900 6 | 22500 <br> 20480 | $\begin{array}{r} 22100 \\ 22633 \\ \hline \end{array}$ | $\begin{array}{r}23700 . \\ 30325 . \\ \hline\end{array}$ | 18700. | 230000-1 | 21906* |
| data processing $\begin{array}{r}\text { I } \\ \\ \\ \\ \hline\end{array}$ | $\begin{array}{r}0 \\ 0 \\ 0 \\ \hline\end{array}$ | 15100. | $\begin{array}{r}18800 \\ 21375 \\ 8 \\ \hline\end{array}$ |  | - | $\begin{array}{r} 22400 \\ 22400 \\ \end{array}$ |  |  | $\begin{array}{r} 37000 . \\ 37000 \\ \hline \end{array}$ | 1 0 0 0 0 | $23221$ |
| CONSULTING | $\begin{aligned} & 16000 \text {. } \\ & 16000 \end{aligned}$ | $17000 \cdot$ | ${ }_{1}^{18900} 1913{ }^{\text {a }}$ | $\begin{aligned} & 42500 \\ & 42500 \\ & \hline \end{aligned}$ | 2200 | -1 0 0 0 | $\begin{array}{r} 30300 \\ 48383 \end{array}$ | $\begin{array}{r} 31000 \\ 32100 \\ 3 \end{array}$ | $\begin{array}{r} 45000 \\ 48400 \\ 2 \end{array}$ | $\begin{array}{r} 400000 \\ 45000 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 34509 \\ 22 \end{array}$ |
| OTHER | $\begin{array}{r} 14000 \\ \hline \end{array}$ | $\begin{array}{r}11000 \\ 13825 \\ \hline\end{array}$ | $\begin{array}{r} 19500 \\ 19975 \\ \hline \end{array}$ | $\begin{array}{r}22700 \\ 23300 \\ \hline\end{array}$ |  | $30000$ |  | $\begin{array}{r} 29000 \\ 26580 \\ 5 \end{array}$ | $\begin{aligned} & 27000 \\ & 3503 \mathrm{3} \\ & \mathbf{3} \end{aligned}$ | $\begin{aligned} & 24000 \text { : } \\ & 54500 \\ & 2 \end{aligned}$ | $26396$ |
| COLUMN MEAN | $\begin{array}{r} 16960 \\ 30 \end{array}$ | $15716$ | $\begin{array}{r} 193260 \\ 280 \end{array}$ | $\begin{array}{r} 23860 \\ 237 \end{array}$ | 25976 | 29242 | $\begin{array}{r} 31811 \\ 269^{\circ} \end{array}$ | $\begin{array}{r} 33651 \\ 142 \end{array}$ | 33617. | 41834.-1 | ${ }^{26419}{ }^{\circ}$ |


TABLE E-8
by Degree and Experience


## TECHNICAL NOTES

The survey population was those ACS members who had U. S. mailing addresses, had birth dates of 1914 or later, and had neither student nor emeritus membership. On late February, questionnaires were sent by bulk mail to a systematic sample of one-fourth of the population. The number of questionnaires sent out was 20,242 By April 28, the cut off date, usable returned questionnaires numbered 11,060 (54.6\%) including those partially completed questionnaires that contained usable information.

The responses underwent a clerical edit, which in some cases involved inserting an inferred reply to an unanswered question on the basis of answers to other questions. A facsimile of the questionnaire is included at the end of the report.

## Definitions

Some of the concepts used in this report cannot be given simple and self-explanatory names, but reference to the survey questionnaire (page 142) will be enough to make clear most of the terms appearing in the tables. Some terms requiring special comment are defined below.

Salary and income tables contain information concerning fulltime employed chemists and chemical engineers (except postdoctoral fellows).

A chemist is (l) a respondent who declared a chemical work specialty (including biochemistry), or (2) a respondent who declared a nonchemical work specialty but whose highest degree is in chemistry. Thus, a respondent who declared a non-chemical work specialty (such as management or administration) is included among chemists if the highest degree is in chemistry, but not if the highest degree is in a non-chemical discipline.

A chemical engineer is a person employed in chemical engineering or one who did not declare a chemical specialty but whose highest degree is in chemical engineering.

This report presents basic yearly salaries of the respondents at the time of the survey, which was early spring 1978. Teachers, however, presumably report basic salary for the academic year, rather than the calendar year. Also, the self-employed usually
report estimated income or an imputed salary plus earnings. Income is 1977 actual professional income.

The word age is used in a sense somewhat different from that in ordinary usage. Respondents provided their year of birth. Subtracting that year from 1978 gives age as of December 31, 1978, but the survey date was March 1 , when only about onesixth of the respondents had had their 1978 birthdays. This procedure causes Tables $A-2, A-3, A-10, B-5$ and $C-5$, to have some individuals fall in older age groups than they would if age were taken as age at the most recent birthday.

Members are assigned to geographic regions according to place of residence, not place Of work.

## Characteristics of Respondents

The 1975 report included a detailed comparison of the characteristics of survey respondents with the ACS membership records. It is not necessary to repeat that discussion except to say that the respondents seem to represent a cross section of the target population. Tables of the characteristics of survey respondents are presented in Tables A-1 through A-l7 of this report.

## Proportions

The proportion of people falling within a certain cell in one of the tables is a sample proportion. The sample proportion is used to make statements about the corresponding population proportion, but, of course, the sample proportion generally is not exactly equal to the population proportion. Another useful type of estimate is the confidence interval. Such an interval estimate is illustrated in the following statement: We assert with $95 \%$ confidence that the population proportion is between 0.04 and 0.06 . A simple but adequate formula for a confidence interval centered on the sample proportion is

$$
\begin{aligned}
p^{*} & =p \pm z[p(l-p) / n]^{\frac{1}{2}} \\
\text { where } p^{*}= & \text { the population proportion } \\
p= & \text { the sample proportion } \\
z= & \text { a function of the level of confidence } \\
& \text { and is found in a table of the standard } \\
n= & \text { normal distribution }
\end{aligned}
$$

Inspection of the formula shows that the width of the confidence interval is inversely proportional to the square root of the sample size, so that proportions derived from
small samples are not so precise as ones drawn from large samples. Also, if non-respondents differ from respondents with regard to the characteristic under consideration, the formula will overstate precision because the formula is based on an assumption of $100 \%$ response.

Suppose a confidence interval is required for a group containing 1900 sample members. If the sample contains 95 persons with a specific characteristic, then the numbers that go into the formula are $p=95 / 1900=0.05$ and $n=1900$. For $a$ $95 \%$ confidence interval, $z$ is about 2. Putting these numbers into the formula above we have

$$
\begin{aligned}
p^{*} & =p \pm z[p(1-p) / n]^{\frac{1}{2}} \\
& =0.05 \pm 2[0.05(0.95) / 1900]^{\frac{1}{2}} \\
& =0.05 \pm 0.01
\end{aligned}
$$

Thus, a $95 \%$ confidence interval for $\mathrm{p}^{*}$ is from $4.0 \%$ to 6.0\%. Although we cannot say that the population proportion is exactly $5.0 \%$, we can be confident that it is between $4.0 \%$ and $6.0 \%$. The $95 \%$ level of confidence means roughly that if this procedure were followed a large number of times, the population proportion would be within the calculated interval about $95 \%$ of the time.

## Small Cells

If the number of individuals in a cell is very small, it is perilous to hold faith in the figures presented in salary and income tables. The danger is somewhat less for cells of intermediate size.

## Standard Deviations

Some of the salary and income tables contain the mean and the standard deviation along with certain percentiles. The standard deviation is presented for the benefit of readers who want to estimate the dispersion of the data summarized in the tables. Techniques for making such estimates appear in introductory textbooks on statistics.

## Percentiles

The formula used for calculating percentiles requires some explanation. If the number of individuals in a cell is an odd number, the middle one is the fiftieth percentile. But if the number of individuals is an even number, a difficulty arises because the formula employed does not allow for inter-polation--the smaller of the two middle ones is taken as the fiftieth percentile. Likewise if the tenth, twenty-fifth, seventy-fifth, or ninetieth percentile falls between two sample values, the smaller value is presented. On the other hand, if the number of data points is so small that a percentile falls outside the range of the sample values, then the nearest sample value is presented. An extreme example of the shortcoming of this method occurs when a cell contains three individuals. The smallest of the three is listed as the tenth and the twentyfifth percentiles, the middle one as the fiftieth and seventyfifth, and the largest as the ninetieth. Of course, no one should take seriously the percentiles of such a small cell. In large cells, interpolation would make little difference.

PACIFIC
WASHINGTON
Oregon
CALIFORNIA
ALASKA
HAWAII

MOUNTA IN
Montana
I DAHO
WYOMING
NEVADA
UTAH
Colorado
ARI ZONA
New Mexico

WEST NORTH CENTRAL
NORTH DAKOTA
MINNESOTA
South dakota
IOWA
NEbRASKA
KANSAS
MISSOURI

WEST SOUTH CENTRAL

OKLAHOMA
ARKANSAS
TEXAS
LOUISIANA

EAST NORTH CENTRAL
WI SCONSIN
MICHIGAN
ILLINOIS
INDIANA
OHIO

EAST SOUTH CENTRAL

Kentucky
TENNESSEE
MISSISSIPPI
Alabama

MIDDLE ATLANTIC
NEW YORK
Pennsylvania NEW JERSEY

SOUTH ATLANTIC

DELAWARE
MARYLAND
WEST VIRGINIA
DISTRICT OF COLUMBIA VIRGINIA
NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
FLORIDA

NEW ENGLAND

MAINE
NEw HAMPSHIRE
VERMONT
MASSACHUSETTS
CONNECTICUT
RHODE ISLAND

## AMERICAN CHEMICAL SOCIETY

please do not urite in this space.
Commission listed below? Yes (5) No

If "Yes," please check those which apply to you:
(1) Black (not of Hispanic origin)
(3) Asian or Pacific Islander (of Chinese, Japanese,
(4) 2) __ American Indian or Alaskan Native Korean, Filipino, or subcontinental Indian origin)
$\qquad$ C. State of residence

F. Highest degree earned:
(1) __Bachelors
(2) Masters $\qquad$ Rican, Cuban, or Spanish origin)
G. Year highest degree was obtained: $\qquad$
H. Field of highest degree:
(01) Analytical chemistry
(07)__Agricultural/food chemistry
(02) Inorganic chemistry
(08) Pharmaceutical/medicinal/clinical chem.
(03) __Organic chemistry
(09)_Chemical engineering
(04) __Polymer/macromolecular chemistry
(10) Chemistry, general
(05)__Physical/theoretical chemistry
(11) __Chemistry, other (specify)
(12) _Non-chemical (specify) $\qquad$
Please check the one response in each question which most aptly describes your status as of March 1, 1978.
I. Current Employment Status:

| Employed full-time: | Employed | part-time: |
| :---: | :---: | :---: |
| (01) ___ and not seeking employment | (03) | and seeking full-time employment |
| (02) actively seeking other employment | (04) | not seeking full-time employment |
| (05) Postdoctoral or other fellowship | Retire $\overline{\text { : }}$ |  |
| Unemployed: | (08) | seeking full-time employment |
| (06) ___ and seeking employment | (09) | seeking part-time employment |
| (07)__not seeking employment | (10) | not seeking employment |

J. Current, or most recent, full-time professional employer:

| (05). |  |  |  |
| :---: | :---: | :---: | :---: |
| (01) | manufacturing | (06) | State/local government |
| (02) | non-manufacturing (e.g., mining, utili- | (07) | Self-employed |
|  | ties, construction, consulting firm, etc.) | (08) | spital/independent laboratory |
| (03) | College/university | (09) | Other non-profit org./research ins |
| (04) | High school/other school | (10) | Other (specify) |

K. Category which most closely approximates your present, or most recent, principal work function:

Research and development:
(O1) Management/administration of R\&D
(02) __Basic research
(03) __Applied research/development/design
(04) General management/administration (other than research/development)
(05) ___Teaching/teaching and research
(06) __Marketing/sales/purchasing/technical
services/economic evaluation
(07) Production/quality control
(08) _Other lab. analysis/forensic analysis
(09) _ Writing/editing/abstracting/library serv
(10) Computer, data processing
(11) __Consulting
(12) ___Other (specify) $\qquad$
L. Number of subordinates reporting to you directly or through others (if none, please put "0"):
a. Professionals $\qquad$ b. Technicians $\qquad$ c. Others $\qquad$
M. Specialty which is most closely related to your present, or most recent, principal employment:
(01) Analytical chemistry
(09) Chemical engineering
(02) __Inorganic chemistry
(10) Chemistry, general
(03) __Organic chemistry
(04) _Polymer/macromolecular chemistry
(05) _Physical/theoretical chemistry
(11) _Chemistry, other (specify) Environmental
(06) —Biochemistry
(07) _Agricultural/food chemistry
(08)__Pharmaceutical/medicinal/clinical chemistry
(12) Nuclear/other energy
12) __Non-chemical (specify) Journalism, information/library science Computer science
N. Present basic ANNUAL salary associated with your principal professional employment: \$ (Do not include bonuses, overtime, summer teaching, or other such payment for professional work.)
O. 1977 gross ANNUAL income from all professional activities: $\$$
(Income is ALL payment for professional activities including basic salary, plus bonuses, royalties, fees, honoraria, consultation, etc.)
P. How many years of professional work experience, including teaching and postdoctoral study, have you had?
Q. Have you been unemployed and seeking employment at any time since March 1, 1977? ___Yes (90)__No (Students, graduate assistants, or postdoctorals are not considered as unemployed for this survey.)

If "Yes"," what was the length of unemployment: $\qquad$ months


[^0]:    TECHNCNS

[^1]:    Note: Includes those in basic research, applied R\&D, and management or administration of R\&D.

[^2]:    Note: Includes those in basic research, applied R\&D, and management or administration of R\&D.

