

Program Endorsement Brief: 0954.00/Chemical Technology

Los Angeles/Orange County Center of Excellence, May 2019

Summary

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide regional labor market supply and demand data related to chemical technology. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with relevant occupations.

The following summarizes key findings from this data brief:

- The number of jobs for middle-skill chemical technology occupations is projected to decrease by 7% through 2023; however, more than 1,200 job openings will be available annually due to retirements and workers leaving the field.
- Over the past 12 months, there have been 2,378 online job postings related to middle-skill chemical technology occupations in Los Angeles and Orange Counties.
- No other related program recommendation requests were received in 2018 from regional community colleges.
- One college in the region has an existing program closely related to chemical technology.
- Between 2015 and 2018, community colleges in the region conferred an average of two award annually (associate degrees and certificates) in related training programs.

Occupational Demand — In Los Angeles/Orange County, the number of middle-skill jobs related to chemical technology occupations is projected to decrease by 7%. However, there will be more than 1,200 job openings per year through 2023 due to retirements and workers leaving the field (Exhibit 1).

Exhibit 1: Occupational demand in Los Angeles and Orange Counties¹

| Geography | 2018 Jobs | 2023 Jobs | 2018-2023 Change | 2018-2023 % Change | Annual Openings |
|--------------|---------------|---------------|------------------|--------------------|-----------------|
| Los Angeles | 7,619 | 6,939 | (680) | (9%) | 780 |
| Orange | 4,038 | 3,868 | (170) | (4%) | 422 |
| Total | 11,658 | 10,807 | (851) | (7%) | 1,202 |

¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages — Entry-level hourly wages for middle-skill chemical technology occupations in the region are between \$11.04 and \$13.31. Entry-level wages for these occupations are lower than the MIT Living hourly wage for one adult in the region (\$14.36 in Los Angeles County and \$15.85 in Orange County). Median hourly wages for four chemical technology occupations are between \$19.46 and \$23.38, which is higher than the MIT hourly wage in both counties.

Job Postings — There were 2,378 online job postings related to middle-skill chemical technology occupations listed in the past 12 months. The majority of job postings are for quality assurance technicians, quality control technicians, quality coordinators, press operators and quality specialists. Top specialized skills are: quality assurance and control, quality management, and good manufacturing practices. The top three employers, by number of job postings, in the region are: Northrop Grumman, Precision Castparts, and Arconic.

Educational Attainment — The BLS lists an associate degree as the typical entry-level education for chemical technicians, and a high school diploma for the following occupations: chemical and system operators; chemical operators and tenders; cutting, punching, and press machine setters, operators, and tenders; and heat treating equipment setters, operators, and tenders, metal and plastic. The national-level educational attainment data indicates between 21% and 44% of workers in the field have completed some college or an associate degree. In Los Angeles/Orange County, 85% of job postings request high school or vocational training.

Community College Supply — Appendix A shows the annual and three-year average number of awards conferred by community colleges in the related TOP code: Plastics and Composites (0954.20). Cerritos College is the only college in the state with a Plastics and Composites program, and there are currently no Chemical Technology (0954.00) programs in California. Last year, there were no other related program recommendation requests from regional community colleges.

Appendix A: Regional community college awards (certificates and degrees), 2015-2018

| TOP Code | Program | College | 2015-16 Awards | 2016-17 Awards | 2017-18 Awards | 3-Year Award Average |
|----------------------|-------------------------|----------|----------------|----------------|----------------|----------------------|
| 0954.20 | Plastics and Composites | Cerritos | 0 | 2 | 2 | 2 |
| Total/Average | | | 0 | 2 | 2 | 2 |

Appendix B: Occupational demand and wage data by county

Exhibit 3. Los Angeles County

| Occupation (SOC) | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Entry-Level Hourly Earnings | Median Hourly Earnings | Experienced Hourly Earnings |
|---|------------------|------------------|--------------------|----------------------|------------------------|------------------------------------|-------------------------------|------------------------------------|
| Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic (51-4031) | 4,487 | 4,015 | (472) | (11%) | 479 | \$10.92 | \$14.89 | \$24.96 |
| Chemical Technicians (19-4031) | 1,445 | 1,388 | (57) | (4%) | 131 | \$12.81 | \$19.64 | \$33.42 |
| Chemical Equipment Operators and Tenders (51-9011) | 797 | 754 | (43) | (5%) | 82 | \$11.65 | \$22.53 | \$32.97 |
| Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic (51-4191) | 639 | 553 | (86) | (13%) | 64 | \$11.34 | \$18.79 | \$29.20 |
| Chemical Plant and System Operators (51-8091) | 251 | 229 | (22) | (9%) | 24 | \$13.01 | \$22.78 | \$44.14 |
| Total | 7,619 | 6,939 | (680) | (9%) | 780 | | | |

Exhibit 4. Orange County

| Occupation (SOC) | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Entry-Level Hourly Earnings | Median Hourly Earnings | Experienced Hourly Earnings |
|---|------------------|------------------|--------------------|----------------------|------------------------|------------------------------------|-------------------------------|------------------------------------|
| Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic (51-4031) | 2,247 | 2,117 | (130) | (6%) | 246 | \$11.34 | \$16.28 | \$24.14 |
| Chemical Technicians (19-4031) | 970 | 976 | 6 | 1% | 91 | \$14.23 | \$19.40 | \$35.26 |
| Chemical Equipment Operators and Tenders (51-9011) | 531 | 505 | (26) | (5%) | 55 | \$11.14 | \$16.85 | \$30.60 |

| | | | | | | | | |
|--|--------------|--------------|--------------|-------------|------------|---------|---------|---------|
| Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic (51-4191) | 234 | 217 | (17) | (7%) | 24 | \$12.46 | \$20.71 | \$29.51 |
| Chemical Plant and System Operators (51-8091) | 56 | 52 | (4) | (7%) | 5 | \$14.48 | \$26.08 | \$45.87 |
| Total | 4,038 | 3,868 | (170) | (4%) | 422 | | | |

Exhibit 5. Los Angeles and Orange Counties

| Occupation (SOC) | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings | Entry-Level Hourly Earnings | Median Hourly Earnings | Experienced Hourly Earnings |
|---|---------------|---------------|--------------|---------------|-----------------|-----------------------------|------------------------|-----------------------------|
| Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic (51-4031) | 6,734 | 6,133 | (601) | (9%) | 725 | \$11.04 | \$15.33 | \$24.62 |
| Chemical Technicians (19-4031) | 2,415 | 2,364 | (51) | (2%) | 222 | \$13.31 | \$19.51 | \$34.12 |
| Chemical Equipment Operators and Tenders (51-9011) | 1,328 | 1,260 | (68) | (5%) | 138 | \$11.41 | \$20.15 | \$32.11 |
| Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic (51-4191) | 874 | 770 | (104) | (12%) | 88 | \$11.55 | \$19.46 | \$29.27 |
| Chemical Plant and System Operators (51-8091) | 307 | 281 | (26) | (8%) | 29 | \$13.17 | \$23.38 | \$44.49 |
| Total | 11,658 | 10,807 | (851) | (7%) | 1,202 | | | |

Appendix C: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (EMSI)
- Employment Development Department, Labor Market Information Division, OES
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- MIT Living Wage
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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