

TABLE 1. MASS SPECTROGRAPHIC ANALYSES OF REACTION GASES^{a,b,c} AND WET-CHEMICAL ANALYSES OF RESIDUAL CO₂ IN UNREACTED CALCITE; CALCITE-HYDROGEN SYSTEM

| Experiment No. | 70 | 71 | 72 | 73 | 74 | 75 | 77 | 78 | 79 | 80 | 81 | 82 | 90 | 91 | 92 | 93 |
|---------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|------|-------------------|-------------------|
| Temperature (°C) | 535 | 605 | 605 | 605 | 605 | 700 | 700 | 700 | 700 | 790 | 870 | 650 | 610 | 735 | 713 | 700 |
| Pressure (psi) | 2000 | 2000 | 2000 | 2000 | 2000 | 200 | 2000 | 8000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 400 | 4000 |
| Wt. % CO remaining in solid | 43.0 | 42.0 | 41.0 | 39.3 | 34.2 | 41.2 | 26.8 | 36.0 | 33.4 | 34.5 | 16.3 | 36.9 | N.A. ^d | 37.8 | N.A. ^d | N.A. ^d |
| Duration of run (hours) | 2 | 2 | 4 | 8 | 16 | 2 | 8 | 2 | 4 | 2 | 2 | 4 | 12.5 | 2 | 2 | 2 |
| Mole % CH ₄ in gas | 0.02 | 0.17 | 0.28 | 0.53 | 1.38 | 1.83 | 2.67 | 0.37 | 1.34 | 1.43 | 1.95 | 0.89 | 1.64 | 1.39 | 2.37 | 0.99 |
| Mole % C ₂ H ₆ in gas | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | — | — | — |
| Mole % CO in gas | — | — | — | — | — | 1.10 | — | — | — | — | — | — | — | — | 0.31 | — |
| Mole % CO ₂ in gas | — | — | — | — | — | 0.11 | — | — | — | — | — | — | — | — | 0.04 | — |
| Mole % H ₂ in gas | 99.6 | 99.8 | 99.7 | 99.4 | 99.5 | 96.2 | 97.2 | 99.6 | 98.6 | 98.3 | 98.0 | 99.0 | 98.1 | 98.6 | 97.2 | 99.0 |
| Mole % He in gas | 0.40 | 0.08 | 0.04 | 0.07 | 0.09 | 0.75 | 0.11 | 0.02 | 0.07 | 0.23 | 0.06 | 0.10 | 0.24 | — | 0.11 | 20.01 |

^a Analysis calculated on water free basis.
^b Starting hydrogen impurities given as follows: less than 1 ppm N₂, less than 1 ppm O₂, less than 1/2 ppm CO₂, less than 1/2 ppm CO₂, Dew Point = 100°F.
^c Detection limit 0.01%.
^d Not analyzed.

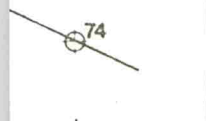
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