

**Carbon, oxygen and strontium isotopes and homogenization
temperatures of fluid inclusions**

| Well/Outcrop | Sample | Stratium | Depth (m) | Petrology | ⁸⁷ Sr/ ⁸⁶ Sr | δ ¹³ C _{V-PDB} (‰) | δ ¹⁸ O _{V-PDB} (‰) | Homogenization temperature (Th) | | |
|---|----------------------|-------------------|-----------|--|------------------------------------|--|--|---------------------------------|--------------|--------------|
| | | | | | | | | Range of Th (°C) | Number of Th | Average (°C) |
| Seawater calcite (O) in Tarim Basin | | | | | | | | | | |
| AD3 | AD3-1 | O _{2y} | 6526.7 | Annular radial calcite in pore | 0.708825 | -0.69 | -7.53 | 38.5~49.3 | 5 | 44.3 |
| S110 | S110-1 | O _{2y} | 6302.09 | Annular radial calcite in pore | 0.708328 | -0.19 | -8.36 | Liquid at room temperature | | |
| S110 | S110-2 | O _{2y} | 6302.11 | Annular radial calcite in pore | 0.708230 | 1.21 | -6.34 | Liquid at room temperature | | |
| T738 | T738-1 | O _{1-2y} | 6068.81 | Annular radial calcite in pore | 0.708483 | -0.72 | -5.75 | Liquid at room temperature | | |
| S94 | S94-1 | O ₁ | 5960.5 | Annular radial calcite in pore | 0.708710 | -0.15 | -5.42 | 40.3~48.7 | 7 | 43.1 |
| S94 | S94-2 | O ₁ | 5960.6 | Annular radial calcite in pore | ^{0.708650} | 0.6 | -5.4 | Liquid at room temperature | | |
| Shallow burial formation water calcite (O) in Tarim Basin | | | | | | | | | | |
| S94 | S94-105 | O ₁ | 5960.5 | Grannular calcite | 0.708710 | -0.2 | -9.4 | 55~78 | 8 | 66.6 |
| S119 | S119-3-7 | O _{2y} | 6078.65 | Grannular calcite | 0.709025 | -0.2 | -7.3 | 60~85 | 9 | 70.7 |
| S91 | S91-206 | O ₁ | 5693.72 | Grannular calcite | 0.708779 | 1.5 | -8.5 | 50.1~73.1 | 12 | 59.7 |
| TP2 | TP2-5 | O _{2y} | 6887.01 | Grannular calcite | 0.708347 | 0.5 | -8.0 | 50.2~90.2 | 6 | 65.3 |
| S94 | S94-03 | O ₁ | 5958.82 | Grannular calcite | 0.708821 | 1.4 | -9.3 | 59.0~89.7 | 5 | 69.8 |
| Tahe | TH-1 | O | / | Grannular calcite | 0.708223 | -0.78 | -7.46 | 63.0~86.0 | 9 | 74.4 |
| Tahe | TH-2 | O | / | Grannular calcite | 0.708532 | -0.48 | -6.26 | 51.0~80.0 | 7 | 66.1 |
| Tahe | TH-3 | O | / | Grannular calcite | | 1.10 | -8.19 | | | |
| Tahe | TH-4 | O | / | Grannular calcite | | 0.61 | -8.53 | | | |
| Tahe | TH-5 | O | / | Grannular calcite | 0.708621 | -0.66 | -6.81 | | | |
| Tahe | TH-6 | O | / | Grannular calcite | | 0.72 | -5.64 | | | |
| Tahe | TH-7 | O | / | Grannular calcite | | -1.79 | -9.53 | | | |
| Meteorite mege-crystalline calcite (O) in Tarim Basin | | | | | | | | | | |
| S79 | S79-4 | O _{2y} | 5586.81 | Mege-crystalline calcite in karst cave | 0.709329 | -0.9 | -14.3 | 42.2 | 1 | 42.2 |
| T708 | T708-9 | O _{1-2y} | 5870.7 | Mege-crystalline calcite in karst cave | | -1.3 | -11.8 | 35.5 | 1 | 35.5 |
| AD12 | AD12-1 | O _{1-2y} | 6443.42 | Mege-crystalline calcite in karst cave | 0.709857 | -3.4 | -15.9 | 54.8 | 1 | 54.8 |
| S110 | S110-101 | O _{2y} | 6323.47 | Mege-crystalline calcite in karst cave | 0.709666 | -3.6 | -15.0 | 49.7 | 1 | 49.7 |
| AD3 | AD3-6 | O _{2y} | 6520.8 | Mege-crystalline calcite in karst cave | 0.709594 | -1.6 | -14.8 | | | |
| YQ8 | YQ8-2 | O _{1-2y} | 6628.97 | Mege-crystalline calcite in karst cave | 0.709190 | -0.2 | -12.1 | | | |
| AD12 | AD12-4 | O _{1-2y} | 6450.52 | Mege-crystalline calcite in karst cave | 0.709989 | -1.5 | -18.8 | 68.6 | 1 | 68.6 |
| T904 | T904-6 | O _{2y} | 5896.74 | Mege-crystalline calcite in karst cave | 0.709908 | -1.5 | -12.7 | | | |
| T904 | T904-7 | O _{2y} | 5898.68 | Mege-crystalline calcite in karst cave | 0.709901 | -1.9 | -12.7 | | | |
| AD3 | AD3-11 | O _{2y} | 6547.84 | Mege-crystalline calcite in karst cave | 0.709777 | -1.4 | -14.8 | 53.5 | 1 | 53.5 |
| AD3 | AD3-12 | O _{2y} | 6547.86 | Mege-crystalline calcite in karst cave | | -1.1 | -16.5 | 65.4 | 1 | 65.4 |
| AD3 | AD3-13 | O _{2y} | 6547.88 | Mege-crystalline calcite in karst cave | 0.710340 | -1.4 | -17.2 | 64.7 | 1 | 64.7 |
| T904 | T904-202 | O _{2y} | 5892.42 | Mege-crystalline calcite in karst cave | 0.709857 | -1.6 | -13.3 | | | |
| S85 | S85-201 | O ₁ | 5960.1 | Mege-crystalline calcite in karst cave | 0.709561 | -2.3 | -15.9 | | | |
| Tahe | Tahe-3 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | 0.710558 | -2.49 | -15.23 | | | |
| Tahe | Tahe-8 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | | -3.24 | -14.32 | | | |
| Tahe | Tahe-30 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | 0.709289 | -2.25 | -14.16 | | | |
| Tahe | Tahe-34 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | 0.709554 | 0.02 | -15.74 | | | |
| Tahe | Tahe-39 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | 0.709916 | -0.33 | -11.44 | | | |
| Tahe | Tahe-45 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | | -2.37 | -14.35 | | | |
| Tahe | Tahe-47 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | 0.709912 | -1.53 | -12.89 | | | |
| Tahe | Tahe-53 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | | -3.26 | -14.44 | | | |
| Tahe | Tahe-62 [Ⓞ] | O | / | Mege-crystalline calcite in karst cave | 0.709732 | -1.58 | -16.10 | | | |

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|--|----------------------|-------------------|---------|--|----------|-------|--------|-------------|----|-------|
| S85 | S85-1 [Ⓢ] | O | / | Mege-crystalline calcite in karst cave | 0.709526 | -2.30 | -17.20 | | | |
| S85 | S85-2 [Ⓢ] | O | / | Mege-crystalline calcite in karst cave | 0.709580 | -2.30 | -17.00 | | | |
| Hydrothermal calcite vein (O) in Tarim Basin | | | | | | | | | | |
| TZ12 | TZ12-35 | O ₃ l | 4653 | Calcite vein in fracture | 0.709153 | -1.3 | -7.9 | 138.1~168.2 | 15 | 149.7 |
| Z4 | Z4-3C | O ₃ l | 4908.22 | Calcite vein in fracture | 0.709891 | -3.9 | -9.0 | | | |
| Z4 | Z4-14C | O ₃ l | 4909.12 | Calcite vein in fracture | 0.709513 | -1.2 | -9.3 | 155.9~199.1 | 22 | 180 |
| Z4 | Z4-16 | O ₃ l | 4909.54 | Calcite vein in fracture | | -4.3 | -10.2 | | | |
| TZ12 | TZ12-61C | O ₁ | 5298.6 | Calcite vein in fracture | 0.709049 | -1.5 | -9.9 | | | |
| Z16 | Zh16-307 | O ₁ | 4755.65 | Calcite vein in fracture | 0.709413 | -4.5 | -14.3 | 125.0~189.6 | 18 | 152.9 |
| Z16 | Zh16-308 | O ₁ | 4755.69 | Calcite vein in fracture | | -7.5 | -10.8 | 129.7~166.9 | 19 | 144.2 |
| Z3 | Z3-101 | O ₁ | 3837.87 | Calcite vein in fracture | | -2.3 | -7.9 | | | |
| TZ12 | TZ12-55 | O ₁ | 5217 | Calcite vein in fracture | 0.709137 | -1.7 | -8.4 | 145.1~198.7 | 10 | 172.5 |
| TZ12 | TZ12-56 | O ₁ | 5216.51 | Calcite vein in fracture | 0.709103 | -4.7 | -12.8 | 108.7~173.5 | 6 | 139.2 |
| TZ12 | TZ12-58 | O ₁ | 5216.55 | Calcite vein in fracture | 0.709532 | -3.3 | -12.6 | | | |
| TZ12 | TZ12-42C | O ₃ l | 4711.8 | Calcite vein in fracture | | -8.5 | -11.7 | | | |
| Z4 | Z4-1C | O ₁ | 3609.96 | Calcite vein in fracture | | -6.4 | -14.1 | | | |
| Tahe | Tahe-19 [Ⓢ] | O | / | Calcite vein in fracture | | -6.1 | -9.3 | 125.6~152.3 | 8 | 142.1 |
| Tahe | Tahe-20 [Ⓢ] | O | / | Calcite vein in fracture | | -6.20 | -12.00 | | | |
| Tahe | Tahe-21 [Ⓢ] | O | / | Calcite vein in fracture | | -5.48 | -10.22 | | | |
| Tahe | Tahe-22 [Ⓢ] | O | / | Calcite vein in fracture | 0.709621 | -2.94 | -10.95 | | | |
| Tahe | Tahe-23 [Ⓢ] | O | / | Calcite vein in fracture | | -3.05 | -9.96 | | | |
| Tahe | Tahe-24 [Ⓢ] | O | / | Calcite vein in fracture | | 5.35 | -7.93 | | | |
| Tahe | Tahe-25 [Ⓢ] | O | / | Calcite vein in fracture | | -3.88 | -8.05 | | | |
| Tahe | Tahe-26 [Ⓢ] | O | / | Calcite vein in fracture | | 6.39 | -7.07 | | | |
| Tahe | Tahe-27 [Ⓢ] | O | / | Calcite vein in fracture | 0.709425 | -4.14 | -11.88 | | | |
| Tahe | Tahe-28 [Ⓢ] | O | / | Calcite vein in fracture | 0.709085 | -6.03 | -13.55 | | | |
| Tahe | Tahe-29 [Ⓢ] | O | / | Calcite vein in fracture | | -4.24 | -10.85 | | | |
| Tahe | Tahe-30 [Ⓢ] | O | / | Calcite vein in fracture | | -3.32 | -11.55 | | | |
| Tahe | Tahe-31 [Ⓢ] | O | / | Calcite vein in fracture | 0.709219 | -6.22 | -10.83 | | | |
| Tahe | Tahe-32 [Ⓢ] | O | / | Calcite vein in fracture | | -3.75 | -9.94 | | | |
| Tahe | Tahe-33 [Ⓢ] | O | / | Calcite vein in fracture | | -4.59 | -11.93 | | | |
| Tahe | Tahe-34 [Ⓢ] | O | / | Calcite vein in fracture | | -5.30 | -14.16 | | | |
| Tahe | Tahe-35 [Ⓢ] | O | / | Calcite vein in fracture | 0.709184 | -4.80 | -12.10 | | | |
| Tahe | Tahe-36 [Ⓢ] | O | / | Calcite vein in fracture | 0.709627 | -5.60 | -14.60 | | | |
| Tahe | Tahe-37 [Ⓢ] | O | / | Calcite vein in fracture | 0.709349 | -4.23 | -10.68 | | | |
| Marine limestone (O) in Tarim Basin | | | | | | | | | | |
| TZ12 | TZ12-42L | O ₃ l | 4711.8 | Marine limestone | 0.708276 | 0.7 | -7.2 | | | |
| TZ12 | TZ12-45 | O ₃ l | 4742 | Marine limestone | 0.708269 | 1.2 | -4.7 | | | |
| TZ12 | TZ12-54 | O ₁ | 5213.5 | Marine limestone | 0.708754 | -0.4 | -3.9 | | | |
| TZ44 | TZ44-9A | O ₃ l | 4850.2 | Marine limestone | 0.708418 | 0.5 | -6.7 | | | |
| Zhong11 | Zhong11-4 | O ₃ l | 5640.16 | Marine limestone | 0.708949 | -2.4 | -7.8 | | | |
| TZ44 | TZ44-8A | O ₃ l | 4846.6 | Marine limestone | 0.708397 | 0.9 | -5.1 | | | |
| S76 | S76-3A | O ₂ yj | 5583.57 | Marine limestone | 0.708841 | 2.0 | -7.6 | | | |
| S102 | S102-4A | O ₂ yj | 6046.22 | Marine limestone | 0.708972 | 0.4 | -7.5 | | | |
| T115 | T115-6 | O ₂ yj | 5586.4 | Marine limestone | 0.708802 | 0.5 | -5.8 | | | |
| TZ12 | TZ12-61L | O ₁ | 5298.6 | Marine limestone | | | | | | |
| S81 | S81-103 | O ₁ | 5722.12 | Marine limestone | | | | | | |

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|--|----------------|--------------------|---------|--|----------|------|-------|----------------------------|----|-------|
| S109 | S109-6A | O ₂ yj | 6250.63 | Marine limestone | | | | | | |
| S114 | S114-103 | O ₁₋₂ y | 6413.39 | Marine limestone | 0.708692 | -0.3 | -6.3 | | | |
| S114 | S114-104 | O ₁₋₂ y | 6461.31 | Marine limestone | 0.708718 | -0.8 | -5.7 | | | |
| T901 | T901-105 | O ₂ yj | 5572.2 | Marine limestone | 0.708150 | 0.1 | -7.6 | | | |
| T901 | T901-107 | O ₂ yj | 5550.4 | Marine limestone | 0.708632 | 0.8 | -6.1 | | | |
| Marine limestone (O) in Sichuan Basin | | | | | | | | | | |
| Qiliao | Qiliao-1A | O ₁₋₂ | / | Marine limestone | | -1.2 | -9.6 | | | |
| Qiliao | Qiliao-2A | O ₁₋₂ | / | Marine limestone | 0.708925 | -1.3 | -7.1 | | | |
| Qiliao | Qiliao-3A | O ₁₋₂ | / | Marine limestone | 0.709104 | -0.1 | -7.7 | | | |
| Qiliao | Qiliao-4A | O ₁₋₂ | / | Marine limestone | | -1.5 | -9.2 | | | |
| Qiliao | Qiliao-5A | O ₁₋₂ | / | Marine limestone | 0.708858 | -0.5 | -8.8 | | | |
| Qiliao | Qiliao-6A | O ₁₋₂ | / | Marine limestone | 0.709001 | -1.4 | -9.6 | | | |
| Qiliao | Qiliao-7A | O ₁₋₂ | / | Marine limestone | 0.708673 | -1.1 | -9.4 | | | |
| Qiliao | Qiliao-8A | O ₁₋₂ | / | Marine limestone | | -1.3 | -9.2 | | | |
| Qiliao | Qiliao-9A | O ₁₋₂ | / | Marine limestone | 0.708982 | -0.3 | -8.6 | | | |
| Qiliao | Qiliao-10A | O ₁₋₂ | / | Marine limestone | 0.709033 | -0.7 | -9.6 | | | |
| Qiliao | Qiliao-11A | O ₁₋₂ | / | Marine limestone | | -1.5 | -8.1 | | | |
| Seawater calcite (O) in Sichuan Basin | | | | | | | | | | |
| Liaojiacao | Liaojiacao-1 | O ₂ | / | Annular radial calcite in pore | 0.708905 | -0.2 | -9.2 | 38.9 | 1 | 38.9 |
| Liaojiacao | Liaojiacao-2 | O ₂ | / | Annular radial calcite in pore | | -1.6 | -10.3 | | | |
| Liaojiacao | Liaojiacao-3 | O ₂ | / | Annular radial calcite in pore | | -1.7 | -11 | 49.3 | 1 | 49.3 |
| Liaojiacao | Liaojiacao-4 | O ₂ | / | Annular radial calcite in pore | | -1.7 | -10.3 | 42.5 | 1 | 42.5 |
| Liaojiacao | Liaojiacao-5 | O ₂ | / | Annular radial calcite in pore | 0.709102 | -1.4 | -7 | | | |
| Liaojiacao | Liaojiacao-6 | O ₂ | / | Annular radial calcite in pore | | -1.4 | -9.2 | | | |
| Qiliao | Qiliao-6 | O ₁₋₂ | / | Annular radial calcite in pore | 0.708997 | -1.3 | -6.9 | Liquid at room temperature | | |
| Qiliao | Qiliao-7 | O ₁₋₂ | / | Annular radial calcite in pore | | -1.6 | -9.1 | | | |
| Qiliao | Qiliao-8 | O ₁₋₂ | / | Annular radial calcite in pore | | -1.4 | -10.8 | Liquid at room temperature | | |
| Qiliao | Qiliao-9 | O ₁₋₂ | / | Annular radial calcite in pore | 0.708956 | -0.7 | -8.2 | | | |
| Qiliao | Qiliao-10 | O ₁₋₂ | / | Annular radial calcite in pore | 0.709022 | -1 | -8.2 | | | |
| Qiliao | Qiliao-11 | O ₁₋₂ | / | Annular radial calcite in pore | | -1.6 | -9.3 | | | |
| Deep burial formation water calcite (O) in Sichuan Basin | | | | | | | | | | |
| Honghuayuan | Honghuayuan-3 | O ₂ | / | Granular calcite in pore | | 1.6 | -12.3 | 113.2~128.7 | 5 | 124.3 |
| Honghuayuan | Honghuayuan-5 | O ₂ | / | Granular calcite in pore | 0.709105 | 1.4 | -12.5 | | | |
| Honghuayuan | Honghuayuan-6 | O ₂ | / | Granular calcite in pore | 0.708925 | 0.2 | -10.5 | 103.7~108.9 | 8 | 106.7 |
| Honghuayuan | Honghuayuan-8 | O ₂ | / | Granular calcite in pore | 0.708896 | -0.1 | -11 | 101.2~112.5 | 10 | 105.5 |
| Honghuayuan | Honghuayuan-9 | O ₂ | / | Granular calcite in pore | 0.709098 | -0.2 | -10.8 | | | |
| Honghuayuan | Honghuayuan-10 | O ₂ | / | Granular calcite in pore | 0.708936 | 1.4 | -10.8 | | | |
| Qiliao | Qiliao-13 | O ₁₋₂ | / | Granular calcite in pore | 0.708856 | 1.3 | -10.7 | 110~118.3 | 7 | 113 |
| Qiliao | Qiliao-15 | O ₁₋₂ | / | Granular calcite in pore | 0.708982 | 0.9 | -11.5 | | | |
| Qiliao | Qiliao-16 | O ₁₋₂ | / | Granular calcite in pore | 0.708862 | 2.1 | -11.3 | | | |
| Qiliao | Qiliao-18 | O ₁₋₂ | / | Granular calcite in pore | | 2.5 | -12.6 | 110.7~145.6 | 12 | 130.2 |
| Qiliao | Qiliao-22 | O ₁₋₂ | / | Granular calcite in pore | 0.709105 | 1.42 | -9.94 | | | |
| Meteoric mega-crystalline calcite (O) in Sichuan Basin | | | | | | | | | | |
| Qiliao | Qiliao-1 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | | -3.2 | -18.2 | 62.5 | 1 | 62.5 |
| Qiliao | Qiliao-2 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | 0.709749 | -1.7 | -17.4 | | | |
| Qiliao | Qiliao-3 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | 0.709343 | -4.1 | -16.2 | 58.4 | 1 | 58.4 |

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|---|----------------------|------------------|---------|--|----------|-------|--------|-------|-----|-------|
| Qiliao | Qiliao-4 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | 0.709203 | -3.8 | -16.2 | | | |
| Qiliao | Qiliao-5 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | 0.709538 | -2.5 | -16.8 | 59.4 | 1 | 59.4 |
| Qiliao | Qiliao-6 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | 0.710260 | -3.5 | -17.6 | | | |
| Qiliao | Qiliao-7 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | 0.709970 | -4.6 | -18.0 | 75.3 | 1 | 75.3 |
| Qiliao | Qiliao-8 | O ₁₋₂ | / | Mega-crystalline calcite in karst cave | | -2.4 | -17.8 | | | |
| Crypto/Fine crystalline marine dolomite (O1) in Sichuan Basin | | | | | | | | | | |
| Qiliao | Qiliao-18 | O ₁ | / | Crypto-crystalline dolomite | 0.708495 | -0.9 | -7.4 | | | |
| Qiliao | Qiliao-19 | O ₁ | / | Crypto-crystalline dolomite | 0.708814 | -1.1 | -7.1 | | | |
| Qiliao | Qiliao-23 | O ₁ | / | Fine-crystalline dolomite | 0.708790 | 0.2 | -8.6 | | | |
| Qiliao | Qiliao-25 | O ₁ | / | Crypto-crystalline dolomite | 0.708905 | 0.1 | -8.5 | | | |
| Banqiao | Banqiao-52 | O ₁ | / | Fine-crystalline dolomite | 0.709064 | 0.1 | -8.9 | | | |
| Banqiao | Banqiao-55 | O ₁ | / | Fine-crystalline dolomite | 0.708874 | 0.2 | -7.5 | | | |
| Banqiao | Banqiao-56 | O ₁ | / | Crypto-crystalline dolomite | 0.708663 | 0.2 | -6.7 | | | |
| Banqiao | Banqiao-57 | O ₁ | / | Crypto-crystalline dolomite | 0.708736 | -0.5 | -8.9 | | | |
| Banqiao | Banqiao-58 | O ₁ | / | Crypto-crystalline dolomite | 0.708853 | -0.9 | -7.1 | | | |
| Marine limestone (T1f) in Sichuan Basin | | | | | | | | | | |
| Nanjiang | NJ-1 | T _{1f} | / | Marine limestone | 0.707301 | -1 | -6.8 | | | |
| Nanjiang | NJ-5 | T _{1f} | / | Marine limestone | | -0.1 | -6.9 | | | |
| Nanjiang | NJ-13 | T _{1f} | / | Marine limestone | 0.707652 | 1.1 | -6.7 | | | |
| Nanjiang | NJ-15 | T _{1f} | / | Marine limestone | 0.707258 | 0.7 | -7.5 | | | |
| Nanjiang | NJ-16 | T _{1f} | / | Marine limestone | 0.707689 | 0.7 | -7.3 | | | |
| Nanjiang | NJ-19 | T _{1f} | / | Marine limestone | 0.707586 | 0.9 | -5.6 | | | |
| Puguang | Puguang | T _{1f} | / | Marine limestone | 0.707251 | 1.549 | -5.241 | | | |
| Jichang | JC-109 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.71 | -6.11 | | | |
| Jichang | JC-075 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.9 | -6.08 | | | |
| Jichang | JC-064 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.56 | -6.43 | | | |
| Jichang | JC-050 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.42 | -8.35 | | | |
| Jichang | JC-047 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.18 | -8.44 | | | |
| Jichang | JC-046 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.17 | -7.22 | | | |
| Jichang | JC-045 [Ⓞ] | T _{1f} | / | Marine limestone | | 1.26 | -7.39 | | | |
| PG2 | PG2-115 | T _{1f} | 5098 | Fine-crystalline dolomite | 0.707685 | 0.31 | -7.56 | | | |
| MB6 | MB6-10 | T _{1f} | 4015.7 | Fine-crystalline dolomite | 0.707333 | 1.62 | -6.26 | | | |
| HB1 | HB1-14 | T _{1f} | 5362.2 | Crypto-crystalline dolomite | 0.707438 | 1.15 | -7.72 | | | |
| MB2 | MB2-6 | T _{1f} | 4145.3 | Crypto-crystalline dolomite | 0.707695 | 2.16 | -7.07 | | | |
| PG10 | PG10-4 | T _{1f} | 6258.1 | Crypto-crystalline dolomite | 0.707774 | -1.21 | -7.25 | | | |
| MB6 | MB6-6 | T _{1f} | 3843.9 | Crypto-crystalline dolomite | 0.707634 | 1.81 | -6.87 | | | |
| HB1 | HB1-11 | T _{1f} | 4954 | Fine-crystalline dolomite | 0.707558 | 1.72 | -6.33 | | | |
| TSR calcite (T _{1f}) in Sichuan Basin | | | | | | | | | | |
| PG10 | PG10-101 | T _{1f} | 6258.1 | Blade calcite in dissolution vug | 0.707598 | -9.3 | -10.2 | 170.2 | 1.0 | 170.2 |
| PG10 | PG10-102 | T _{1f} | 6262.1 | Blade calcite in dissolution vug | 0.707709 | -11.5 | -9.8 | 150.3 | 1.0 | 150.3 |
| PG10 | PG10-105 | T _{1f} | 6262.3 | Blade calcite in dissolution vug | 0.707801 | -12.5 | -8.6 | 218.2 | 1.0 | 218.2 |
| YB2 | YB2-113 | T _{1f} | 6431.51 | Blade calcite in dissolution vug | 0.707902 | -15.7 | -10.2 | | | |
| YB2 | YB2-115 | T _{1f} | 6431.61 | Blade calcite in dissolution vug | 0.707638 | -15.7 | -11.2 | 196.5 | 1.0 | 196.5 |
| YB2 | YB2-119 | T _{1f} | 6431.66 | Blade calcite in dissolution vug | 0.707769 | -14.3 | -9.9 | | | |
| Du-5 | Du-5 [Ⓞ] | T _{1f} | 4765.98 | Granular calcite in pore | | -3.5 | -7.8 | | | |
| Luoja-1 | Luoja-1 [Ⓞ] | T _{1f} | 3517.21 | Granular calcite in pore | | -3.9 | -8.1 | | | |
| Qili-52 | Qili-52 [Ⓞ] | T _{1f} | 3490.43 | Granular calcite in pore | 0.707809 | -3.7 | -6.5 | | | |

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|---|------------------------|------------------|---------|-----------------------------|----------|---------|-------|-------|---|-------|
| Qili-52 | Qili-52 ^④ | T ₁ f | 3491.89 | Granular calcite in pore | 0.707675 | -5 | -6.9 | | | |
| Zhujia-1 | Zhujia-1 ^④ | T ₁ f | 5648.91 | Granular calcite in pore | | -4.6 | -5.5 | | | |
| Luoja-5 | Luoja-5 ^④ | T ₁ f | 3002.91 | Granular calcite in pore | | -6.1 | -5.7 | | | |
| Po-1 | Po-1 ^④ | T ₁ f | 3464.73 | Granular calcite in pore | | -6.5 | -4.1 | | | |
| Po-1 | Po-1 ^④ | T ₁ f | 3451.69 | Granular calcite in pore | | -7.4 | -6.2 | | | |
| Zi-1 | Zi-1 ^④ | T ₁ f | 3416.79 | Granular calcite in pore | | -11.4 | -4.9 | | | |
| Zi-1 | Zi-1 ^④ | T ₁ f | 3481.62 | Granular calcite in pore | | -10.3 | -6 | | | |
| Po-1 | Po-1 ^④ | T ₁ f | 3461.5 | Granular calcite in pore | | -13.8 | -6.6 | | | |
| Po-4 | Po-4 ^④ | T ₁ f | 238 | Granular calcite in pore | | -16.3 | -6 | | | |
| Po-3 | Po-3 ^④ | T ₁ f | 3536 | Granular calcite in pore | | -17 | -5.9 | | | |
| Po-1 | Po-1 ^④ | T ₁ f | 3464.73 | Granular calcite in pore | | -18.2 | -6.3 | | | |
| PG1 | PG1-1 ^⑤ | T ₁ f | 5421.2 | Blade calcite in vug | | -10.1 | -10.5 | 164.1 | 1 | 164.1 |
| PG1 | PG1-2 ^⑤ | T ₁ f | 5423.2 | Blade calcite in vug | | -12.1 | -7.8 | 150.6 | 1 | 150.6 |
| PG1 | PG1-3 ^⑤ | T ₁ f | 5426.5 | Blade calcite in vug | | -12 | -10.9 | 163.4 | 1 | 163.4 |
| PG1 | PG1-4 ^⑤ | T ₁ f | 5428.4 | Blade calcite in vug | | -9.8 | -12.3 | 175.3 | 1 | 175.3 |
| PG1 | PG1-5 ^⑤ | T ₁ f | 5428.6 | Blade calcite in vug | | -12.6 | -11.8 | 169.9 | 1 | 169.9 |
| LJ2 | LJ2 ^⑤ | T ₁ f | 3400.7 | Blade calcite in vug | | -16.3 | -7.9 | 134.1 | 1 | 134.1 |
| LJ2-1 | LJ2-1 ^⑤ | T ₁ f | / | Blade calcite in vug | | -13.5 | -8.2 | 165.2 | 1 | 165.2 |
| PG2 | PG2 ^⑤ | T ₁ f | 4784.5 | Blade calcite in vug | | -10 | -9.2 | 172.0 | 1 | 172.0 |
| PG6 | PG6 ^⑤ | T ₁ f | 5145.6 | Blade calcite in vug | | -7.8 | -8.6 | | | |
| LJ77 | LJ77 ^⑤ | T ₁ f | / | Blade calcite in vug | | -18.36 | -6.11 | | | |
| MB3 | MB3 ^⑤ | T ₁ f | / | Blade calcite in vug | | -14.080 | -5.96 | | | |
| D5 | D5 ^⑤ | T ₁ f | 4793 | Blade calcite in vug | 0.707530 | -16.480 | -8.59 | | | |
| LJ2 | LJ2 ^⑤ | T ₁ f | 3267.4 | Blade calcite in vug | 0.707590 | -13.520 | -8.22 | | | |
| P2 | P2 ^⑤ | T ₁ f | / | Blade calcite in vug | 0.707500 | -18.870 | -8.27 | | | |
| Crypto/Fine crystalline marine dolomite (T ₁ f) in Sichuan Basin | | | | | | | | | | |
| PL | PL-51 ^⑦ | T ₁ f | / | Crypto-crystalline dolomite | | 1.4 | -3.5 | | | |
| PL | PL-54 ^⑦ | T ₁ f | / | Crypto-crystalline dolomite | | 1.7 | -3.4 | | | |
| PL | PL-56 ^⑦ | T ₁ f | / | Crypto-crystalline dolomite | | 1.7 | -3.9 | | | |
| PL | PL-59 ^⑦ | T ₁ f | / | Crypto-crystalline dolomite | | 1.8 | -3.8 | | | |
| PL | PL-60 ^⑦ | T ₁ f | / | Fine-crystalline dolomite | | 2.0 | -3.4 | | | |
| MB3 | MB3-9 | T ₁ f | 3886.3 | Fine-crystalline dolomite | 0.707777 | 3.27 | -3.24 | | | |
| HB1 | HB1-10 | T ₁ f | 4847.26 | Fine-crystalline dolomite | 0.707710 | 3.67 | -3.78 | | | |
| MB3 | MB3-3 | T ₁ f | 3873 | Crypto-crystalline dolomite | 0.707825 | 4.37 | -2.84 | | | |
| PG1 | PG1-2 | T ₁ f | 5305.9 | Crypto-crystalline dolomite | 0.707752 | 4.25 | -4.84 | | | |
| MB4 | MB4-1 | T ₁ f | 3695.39 | Crypto-crystalline dolomite | 0.707712 | 3.63 | -3.62 | | | |
| MB4 | MB4-3 | T ₁ f | 3728.9 | Crypto-crystalline dolomite | 0.707935 | 2.87 | -3.31 | | | |
| MB6 | MB6-5 | T ₁ f | 3841.4 | Fine-crystalline dolomite | 0.707691 | 2.62 | -3.84 | | | |
| PG2 | PG2-22-1 ^⑧ | T ₁ f | 4994.6 | Crypto-crystalline dolomite | 0.707740 | 2.10 | -4.17 | | | |
| PG2 | PG2-20-14 ^⑧ | T ₁ f | 4696.6 | Crypto-crystalline dolomite | 0.707705 | 2.10 | -4.93 | | | |
| PG2 | PG2-32-7 ^⑧ | T ₁ f | 5082.5 | Fine-crystalline dolomite | 0.707707 | 2.10 | -5.17 | | | |
| PG2 | PG2-41-3a ^⑧ | T ₁ f | 5182 | Fine-crystalline dolomite | 0.707549 | 2.30 | -3.60 | | | |
| PG2 | PG2-41-3a ^⑧ | T ₁ f | 5182.2 | Fine-crystalline dolomite | 0.707678 | 1.40 | -4.30 | | | |
| Yangba | YB-101 | T ₁ f | / | Fine-crystalline dolomite | | 3.20 | -5.10 | | | |
| Yangba | YB-103 | T ₁ f | / | Fine-crystalline dolomite | | 4.10 | -4.10 | | | |
| Yangba | YB-104 | T ₁ f | / | Fine-crystalline dolomite | 0.707652 | 2.20 | -5.20 | | | |

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|--|---------------------|------------------|----------|-----------------------------|----------|------|-------|--|--|--|
| Yangba | YB-108 | T ₁ f | / | Fine-crystalline dolomite | 0.707356 | 2.70 | -4.80 | | | |
| Yangba | YB-111 | T ₁ f | / | Fine-crystalline dolomite | | 2.10 | -2.80 | | | |
| Yangba | YB-112 | T ₁ f | / | Fine-crystalline dolomite | 0.707763 | 0.90 | -3.30 | | | |
| Yangba | YB-113 | T ₁ f | / | Crypto-crystalline dolomite | | 1.50 | -2.80 | | | |
| Du5 | Du5-1 [®] | T ₁ f | 4761.6 | Crypto-crystalline dolomite | 0.707553 | 1.14 | -3.34 | | | |
| Du5 | Du5-2 [®] | T ₁ f | 4769.7 | Fine-crystalline dolomite | 0.707420 | 0.69 | -3.38 | | | |
| Du5 | Du5-3 [®] | T ₁ f | 4779.8 | Fine-crystalline dolomite | 0.707461 | 1.33 | -3.16 | | | |
| Du5 | Du5-5 [®] | T ₁ f | 4796.4 | Fine-crystalline dolomite | 0.707545 | 1.44 | -4.63 | | | |
| Luo2 | Luo2-1 [®] | T ₁ f | 3205.8 | Crypto-crystalline dolomite | 0.707726 | 1.52 | -4.67 | | | |
| Luo2 | Luo2-2 [®] | T ₁ f | 3211.2 | Crypto-crystalline dolomite | 0.707523 | 1.32 | -2.73 | | | |
| Luo2 | Luo2-3 [®] | T ₁ f | 3213.5 | Crypto-crystalline dolomite | 0.707406 | 1.52 | -2.99 | | | |
| LJ2 | LJ2 [®] | T ₁ f | 3211.5 | Crypto-crystalline dolomite | 0.707624 | 1.25 | -3.35 | | | |
| LJ2 | LJ2 [®] | T ₁ f | 3214.3 | Fine-crystalline dolomite | 0.707688 | 1.9 | -4.2 | | | |
| PG2 | PG2 [®] | T ₁ f | 4958.5 | Fine-crystalline dolomite | 0.707555 | 2.4 | -3.8 | | | |
| PG2 | PG2 [®] | T ₁ f | 4977.4 | Crypto-crystalline dolomite | 0.707667 | 2.2 | -4.9 | | | |
| PG2 | PG2 [®] | T ₁ f | 5185 | Crypto-crystalline dolomite | 0.707618 | 2.4 | -3.4 | | | |
| PG2 | PG2 [®] | T ₁ f | 5186.5 | Crypto-crystalline dolomite | 0.707618 | 2.3 | -3.6 | | | |
| LJ2 | LJ2 [®] | T ₁ f | / | Crypto-crystalline dolomite | 0.707624 | 2.1 | -4.9 | | | |
| Crypto/Fine crystalline marine dolomite (O) in Ordos Basin | | | | | | | | | | |
| S338 | S338-15 | O ₁ | 3791.07m | Crypto-crystalline dolomite | | 0.1 | -7.1 | | | |
| S338 | S338-16 | O ₁ | 3800.04m | Fine-crystalline dolomite | | 0.2 | -7.1 | | | |
| XF5 | XF5-15 | O ₁ | 2892.76m | Crypto-crystalline dolomite | | 0.4 | -6.8 | | | |
| S338 | S338-18 | O ₁ | 3790.87m | Crypto-crystalline dolomite | | 1.2 | -6.9 | | | |
| S338 | S338-19 | O ₁ | 3790.42m | Crypto-crystalline dolomite | | 1.1 | -7.6 | | | |
| S338 | S338-20 | O ₁ | 3700.04m | Fine-crystalline dolomite | | 1 | -7.8 | | | |
| S338 | S338-21 | O ₁ | 3791.07m | Crypto-crystalline dolomite | | 1.3 | -7.7 | | | |
| S338 | S338-22 | O ₁ | 3799.5m | Fine-crystalline dolomite | | 1.4 | -8 | | | |
| S338 | S338-23 | O ₁ | 3799.82m | Crypto-crystalline dolomite | | 1.3 | -8 | | | |
| S338 | S338-24 | O ₁ | 3801.5m | Crypto-crystalline dolomite | | 1.2 | -7.7 | | | |
| D76 | D76-12 | O ₁ | 2823.27m | Fine-crystalline dolomite | | 0.5 | -7.7 | | | |
| D76 | D76-15 | O ₁ | 2821.7m | Crypto-crystalline dolomite | | 0.5 | -7.8 | | | |
| D76 | D76-16 | O ₁ | 2806.76m | Crypto-crystalline dolomite | | -0.4 | -6.6 | | | |
| D76 | D76-17 | O ₁ | 2791.68m | Fine-crystalline dolomite | | 0.1 | -6.7 | | | |
| D92 | D92-3 | O ₁ | 2987.04m | Crypto-crystalline dolomite | | -0.8 | -6.5 | | | |
| D92 | D92-4 | O ₁ | 2912.18m | Fine-crystalline dolomite | | 0.1 | -6.8 | | | |
| D77 | D77-1 | O ₁ | 2725.3m | Fine-crystalline dolomite | | 0.3 | -6.9 | | | |
| D77 | D77-2 | O ₁ | 2723.41m | Fine-crystalline dolomite | | -0.4 | -7.7 | | | |
| D42 | D42-1 | O ₁ | 2638.5m | Crypto-crystalline dolomite | | -0.5 | -7.7 | | | |
| D82 | D82-1 | O ₁ | 2685m | Crypto-crystalline dolomite | | -0.2 | -7.1 | | | |
| D82 | D82-2 | O ₁ | 2684.53m | Crypto-crystalline dolomite | | -0.1 | -6.7 | | | |
| D98 | D98-1 | O ₁ | 2683.31m | Crypto-crystalline dolomite | | 0.4 | -7 | | | |
| D60 | D60-2 | O ₁ | 2923.88m | Fine-crystalline dolomite | | -0.5 | -6.9 | | | |
| D60 | D60-8 | O ₁ | 2923.69m | Fine-crystalline dolomite | | -1.2 | -7.4 | | | |
| XF5 | XF5-17 | O ₁ | 2892.76m | Fine-crystalline dolomite | | 0.2 | -3.7 | | | |
| XF5 | XF5-18 | O ₁ | 2892.76m | Crypto-crystalline dolomite | | 0.8 | -3.2 | | | |
| XF5 | XF5-9 | O ₁ | 2892.76m | Fine-crystalline dolomite | | 0.9 | -4.6 | | | |
| XF5 | XF5-21 | O ₁ | 2892.76m | Crypto-crystalline dolomite | | 1.3 | -7.9 | | | |

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|--|------------------------|----------------|----------|------------------------------------|------|-------|--|--|--|
| XF5 | XF5-22 | O ₁ | 2892.76m | Fine-crystalline dolomite | 1.6 | -6.5 | | | |
| S338 | S338-26 | O ₁ | 3799.5m | Crypto-crystalline dolomite | 0.7 | -5.7 | | | |
| S338 | S338-27 | O ₁ | 3799.82m | Crypto-crystalline dolomite | 1.9 | -3.4 | | | |
| S338 | S338-28 | O ₁ | 3801.5m | Crypto-crystalline dolomite | -1 | -4.8 | | | |
| Ordos-1 | Ordos-1-1 [®] | O ₁ | / | Fine-crystalline dolomite | 0.1 | -1.7 | | | |
| Ordos-1 | Ordos-1-2 [®] | O ₁ | / | Crypto-crystalline dolomite | 0.1 | -0.2 | | | |
| Ordos-1 | Ordos-1-4 [®] | O ₁ | / | Fine-crystalline dolomite | -0.2 | -2.7 | | | |
| Ordos-1 | Ordos-1-6 [®] | O ₁ | / | Crypto-crystalline dolomite | -1.3 | -3.4 | | | |
| Ordos-1 | Ordos-1-7 [®] | O ₁ | / | Fine-crystalline dolomite | -0.5 | -3.7 | | | |
| Ordos-2 | Ordos-2-2 [®] | O ₁ | / | Crypto-crystalline dolomite | -1.8 | -4.1 | | | |
| Ordos-2 | Ordos-2-4 [®] | O ₁ | / | Crypto-crystalline dolomite | 0.9 | -3.6 | | | |
| Lihua1-26 | Lihua1-26 [®] | O ₁ | / | Crypto-crystalline dolomite | 0.3 | -3.79 | | | |
| Hydrothermal dolomite (O) in Ordos Basin | | | | | | | | | |
| D77 | D77-1 | O ₁ | / | Coarse crystalline dolomite in vug | -1.7 | -10 | | | |
| D77 | D77-2 | O ₁ | / | Coarse crystalline dolomite in vug | -2.1 | -9.9 | | | |
| D42 | D42-2 | O ₁ | / | Coarse crystalline dolomite in vug | -2.9 | -10.5 | | | |
| D82 | D82-1 | O ₁ | / | Coarse crystalline dolomite in vug | -2.2 | -10.6 | | | |
| D82 | D82-2 | O ₁ | / | Coarse crystalline dolomite in vug | -1.7 | -10 | | | |
| D98 | D98-2 | O ₁ | / | Coarse crystalline dolomite in vug | -2.4 | -11.3 | | | |
| TSR calcite (O) in Ordos Basin | | | | | | | | | |
| XF5 | XF5-11 | O ₁ | / | Blade calcite in dissolution vug | -8.2 | -7.4 | | | |
| XF5 | XF5-12 | O ₁ | / | Blade calcite in dissolution vug | -8 | -7.9 | | | |
| D76 | D76-2 | O ₁ | / | Blade calcite in dissolution vug | -3.9 | -6.6 | | | |
| D92 | D92-6 | O ₁ | / | Blade calcite in dissolution vug | -5.4 | -5.5 | | | |
| D60 | D60-15 | O ₁ | / | Blade calcite in dissolution vug | -7.3 | -6.4 | | | |
| D60 | D60-17 | O ₁ | / | Blade calcite in dissolution vug | -6.3 | -6.4 | | | |
| Marine limestone (O) in Ordos Basin | | | | | | | | | |
| Ordos-2 | Ordos-2-5 [®] | O ₁ | / | Marine limestone | -1.7 | -8.5 | | | |
| Ordos-2 | Ordos-2-6 [®] | O ₁ | / | Marine limestone | -1.6 | -8.7 | | | |
| Ordos-2 | Ordos-2-7 [®] | O ₁ | / | Marine limestone | -1.5 | -6.9 | | | |
| Ordos-2 | Ordos-2-8 [®] | O ₁ | / | Marine limestone | -2.6 | -6.9 | | | |
| Ordos-2 | Ordos-2-9 [®] | O ₁ | / | Marine limestone | -1.0 | -8.5 | | | |
| XF5 | XF5-25 | O ₁ | / | Marine limestone | -1.8 | -8.9 | | | |
| XF5 | XF5-2 | O ₁ | / | Marine limestone | -0.2 | -9.7 | | | |
| XF5 | XF5-15 | O ₁ | / | Marine limestone | 0.1 | -7.8 | | | |
| D76 | D76-20 | O ₁ | / | Marine limestone | 0.2 | -7.0 | | | |
| D92 | D92-16 | O ₁ | / | Marine limestone | -3.6 | -6.9 | | | |

Summary

| Fluid Type | Petrology | Stratum | $^{87}\text{Sr}/^{86}\text{Sr}$ | | | | $\delta^{13}\text{C}_{\text{V-PDB}}$ | | | | $\delta^{18}\text{O}_{\text{V-PDB}}$ | | | |
|---|---------------------------------------|------------------|---------------------------------|----------|----------|----------|--------------------------------------|--------|--------|------------|--------------------------------------|--------|--------|------------|
| | | | Number | Max | Min | Average | Number | Max(‰) | Min(‰) | Average(‰) | Number | Max(‰) | Min(‰) | Average(‰) |
| Seawater | Maine Limestone | O | 20 | 0.709104 | 0.708150 | 0.708722 | 34.0 | 2.0 | -3.6 | -0.6 | 34 | -3.9 | -9.7 | -7.61 |
| | | T ₁ f | 13 | 0.707774 | 0.707251 | 0.707527 | 21.0 | 2.2 | -1.21 | 1.03 | 21 | -5.24 | -8.44 | -6.91 |
| Evaporated hypersaline seawater | Marine dolomite | O | 9 | 0.709064 | 0.708495 | 0.708799 | 49.0 | 1.9 | -1.8 | 0.17 | 49 | -0.2 | -8.9 | -6.28 |
| | | T ₁ f | 29 | 0.707935 | 0.707356 | 0.707641 | 38.0 | 4.4 | 0.7 | 2.2 | 38 | -2.73 | -5.2 | -3.86 |
| Seawater cementation | Annular radial calcite in pore | O | 11 | 0.709102 | 0.708230 | 0.708746 | 18.0 | 1.2 | -1.7 | -0.87 | 18 | -5.37 | -11 | -8.24 |
| Shallow Burial Formation Water | Grannular calcite in pore | O | 8 | 0.709025 | 0.708223 | 0.708632 | 12.0 | 1.5 | -1.8 | 0.1 | 12 | -5.6 | -9.5 | -7.91 |
| Deep burial formation | Grannular calcite in pore | O | 9 | 0.709105 | 0.708856 | 0.708974 | 11.0 | 2.5 | -0.2 | 1.14 | 11 | -9.94 | -12.6 | -11.27 |
| Meteoric water in uplift-exposure environment | Megacrystalline calcite in karst cave | O | 26 | 0.710558 | 0.709190 | 0.709735 | 33.0 | 0.0 | -4.6 | -2.2 | 33 | -11.4 | -18.8 | -15.36 |
| Fault-hydrothermal | Calcite vein in fracture | O | 15 | 0.709891 | 0.709049 | 0.709353 | 32.0 | 6.4 | -8.5 | -3.7 | 32 | -7.1 | -14.6 | -10.82 |
| TSR-derived | Blade calcite in | T ₁ f | 11 | 0.707902 | 0.707500 | 0.707684 | 34.0 | -3.5 | -18.9 | -11.5 | 34 | -4.1 | -12.3 | -7.96 |

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