

TABLE S2. The d-spacings, interplanar angles and zone axes of diamond, vaterite and aragonite in inclusion 4

Analytical No.	(h k l)	d (Å)	Calc (Å)	M.A/C.A (°)	Zone axis [r s t]
2 Diamond 1.0×0.4μm (Size)	1 $\bar{1}$ 1	2.062	2.059	(1 $\bar{1}$ 1)^(220) 90.5/90.0	$\bar{1}$ 1 2
	2 2 0	1.272	1.261		
	3 1 1	1.088	1.075		
	2 2 0	1.277	1.261	(220)^(2 $\bar{2}$ 0) 89.4/90.0	0 0 1
	2 $\bar{2}$ 0	1.261	1.261		
	4 0 0	0.894	0.892		
	$\bar{1}$ 1 1	2.062	2.059	($\bar{1}$ 11)^(220) 90.3/90.0	1 $\bar{1}$ 2
	2 2 0	1.272	1.261		
	1 3 1	1.088	1.075		
11 Diamond 0.5×0.4μm	2 2 0	1.271	1.261	(220)^(1 $\bar{1}$ 1) 88.9/90.0	$\bar{1}$ 1 2
	1 $\bar{1}$ 1	2.049	2.059		
	3 1 1	1.078	1.075		
12 Diamond 0.04×0.04μm	$\bar{1}$ 1 1	2.069	2.059	($\bar{1}$ 11)^(200) 125.2/125.3	0 1 $\bar{1}$
	2 0 0	1.759	1.784		
	1 1 1	2.044	2.059		
13 Diamond 0.1×0.05μm	2 2 0	1.246	1.261	(220)^(1 $\bar{1}$ 1) 91.4/90.0	$\bar{1}$ 1 2
	1 $\bar{1}$ 1	2.040	2.059		
	3 1 1	1.071	1.075		
	2 0 0	1.779	1.784	(200)^($\bar{1}$ 11) 124.8/125.3	0 $\bar{1}$ 1
	$\bar{1}$ 1 1	2.028	2.059		
	1 1 1	2.044	2.059		
16 Diamond 0.08×0.04μm	$\bar{1}$ 1 1	2.030	2.059	($\bar{1}$ 11)^(200) 125.8/125.3	0 1 $\bar{1}$
	2 0 0	1.773	1.784		
	1 1 1	2.062	2.059		
21 Diamond 0.07×0.03μm	2 0 2	1.280	1.261	(202)^(2 $\bar{2}$ 0) 120.0/120.0	1 1 $\bar{1}$
	$\bar{2}$ 2 0	1.300	1.261		
	0 2 2	1.286	1.261		
3 Vaterite (<i>Pbnm</i>) 3.4×0.9μm	0 0 1	8.476	8.480	(001)^(110) 90.5/90.0	$\bar{1}$ 1 0
	1 1 0	3.585	3.576		
	1 1 1	3.311	3.295		
	0 2 0	3.530	3.575	(020)^(1 $\bar{1}$ 0) 118.6/120.0	0 0 1
	1 $\bar{1}$ 0	3.600	3.576		
	1 1 0	3.488	3.576		
6 Aragonite 0.7×0.4μm	0 2 0	3.893	3.984	(020)^(1 $\bar{1}$ 0) 122.8/121.9	0 0 1
	1 $\bar{1}$ 0	4.189	4.211		
	1 1 0	4.173	4.211		
7 Vaterite (<i>P6₃/mmc</i>) 0.4×0.3μm	0 0 0 4	4.195	4.237	(0004)^(02 $\bar{2}$ $\bar{1}$) 99.1/100.3	$\bar{2}$ 1 1 0
	0 2 $\bar{2}$ $\bar{1}$	3.080	3.045		
	0 2 $\bar{2}$ 3	2.685	2.714		

d (Å): measured interplanar spacing from SEAD patterns; Calc (Å): calculated d-spacings on the basis of following unit-cell parameters (Downs and Hall-Wallace 2003): Diamond: $a=3.567\text{Å}$, $b=3.567\text{ Å}$, $c=3.567\text{ Å}$, $Fd3m$; Vaterite: $a=4.130\text{Å}$, $b=7.150\text{Å}$, $c=8.480\text{Å}$, $Pbnm$; $a=7.148\text{Å}$, $b=7.148\text{Å}$, $c=16.949\text{Å}$, $P6_3/mmc$ (Jade database PDF-72-1616); Aragonite: $a=4.961\text{Å}$, $b=7.967\text{Å}$, $c=5.740\text{Å}$, $Pmcn$. M.A./C.A.: measured interplanar angle from SEAD patterns/calculated corresponding interplanar angle.