ภาคผนวก

ภาคผนวก ก แสดง JCPDS file no. 01-081-0941 สำหรับสารฟอสฟอร์ Zirconium Oxide

Name and formula	
Reference code:	01-083-0941
ICSD name:	Zirconium Oxide
Empirical formula:	O_2Zr
Chemical formula:	ZrO_2
Crystallographic parameters	
Crystal system:	Monoclinic
Space group:	P21/c
Space group number:	14
a (Å):	5.1505
b (Å):	5.2077
c (Å):	5.3164
Alpha (°):	90.0000
Beta (°):	99.2230
Gamma (°):	90.0000
Calculated density (g/cm^3):	5.81
Volume of cell (10^6 pm^3):	140.75
Z:	4.00
RIR:	4.76
Subfiles and Quality	
Subfiles:	Inorganic
	Alloy, metal or intermetalic
	Corrosion
	Modelled additional pattern
Quality:	Calculated (C)
Comments	
ICSD collection code:	080047
Test from ICSD:	At least one TF implausible.

References

Primary reference: *Calculated from ICSD using POWD-12++*, (1997)

Structure: Bondars, B., Heidemane, G., Grabis, J., Laschke, K., Boysen, H., Schneider, J., Frey, F., *J. Mater. Sci.*, 30, 1621, (1995)

Peak list

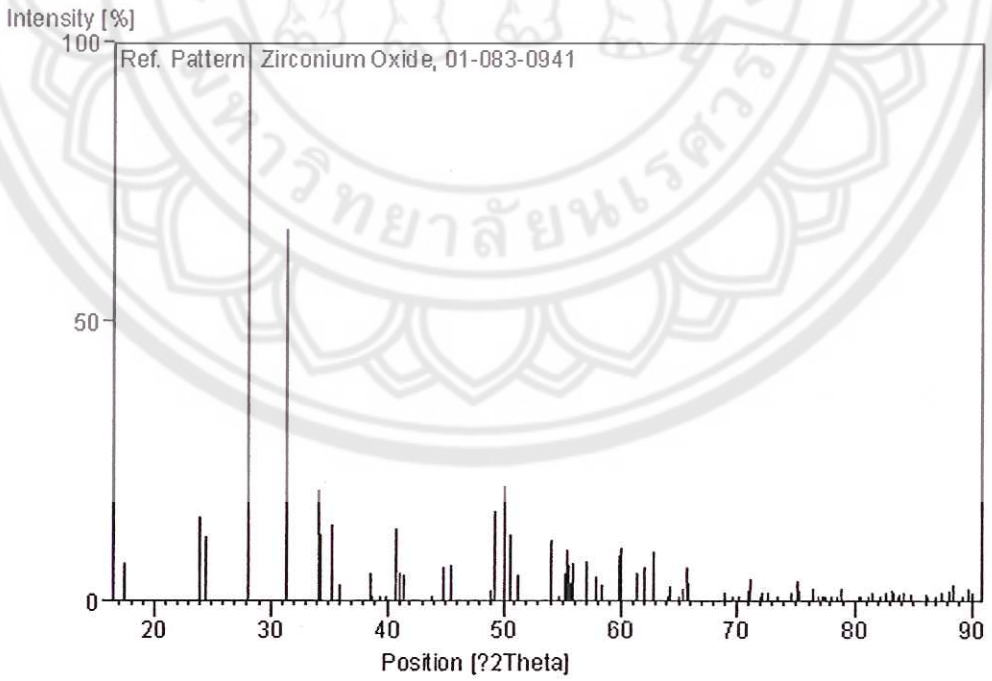
No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	0	0	5.08391	17.430	7.0
2	0	1	1	3.69645	24.056	15.2
3	1	1	0	3.63785	24.449	11.8
4	-1	1	1	3.16447	28.177	100.0
5	1	1	1	2.84104	31.463	66.7
6	0	0	2	2.62384	34.144	20.0
7	0	2	0	2.60385	34.415	12.1
8	2	0	0	2.54196	35.280	13.9
9	-1	0	2	2.50068	35.882	2.9
10	0	2	1	2.33250	38.567	5.2
11	1	2	0	2.31756	38.826	0.4
12	2	1	0	2.28435	39.414	0.8
13	-1	1	2	2.25425	39.962	0.5
14	-2	1	1	2.21449	40.711	13.1
15	1	0	2	2.19278	41.132	5.2
16	-1	2	1	2.17969	41.391	4.6
17	1	2	1	2.06499	43.805	0.1
18	1	1	2	2.02093	44.811	6.3
19	-2	0	2	1.99223	45.493	6.5
20	-2	1	2	1.86072	48.910	1.9

No.	h	k	l	d [A]	2Theta[deg]	I [%]
21	0	2	2	1.84823	49.263	16.2
22	2	2	0	1.81892	50.111	20.8
22	2	2	0	1.81892	50.111	20.8
23	-1	2	2	1.80362	50.565	12.0
24	-2	2	1	1.78305	51.191	4.7
25	2	0	2	1.69497	54.061	10.9
26	1	2	2	1.67726	54.679	0.5
27	2	2	1	1.66069	55.271	5.1
28	0	1	3	1.65818	55.362	9.2
29	-1	1	3	1.65219	55.580	6.6
30	0	3	1	1.64807	55.731	3.5
31	1	3	0	1.64278	55.926	6.8
32	3	1	0	1.61091	57.133	7.2
33	-1	3	1	1.59143	57.898	4.4
34	-2	2	2	1.58224	58.266	3.0
35	1	3	1	1.54510	59.807	8.3
36	-3	0	2	1.54051	60.004	9.5
37	1	1	3	1.51025	61.334	5.2
38	-2	1	3	1.49677	61.947	6.0
39	3	1	1	1.47853	62.797	8.8
40	0	2	3	1.45200	64.080	1.1
41	-1	2	3	1.44797	64.279	2.6
42	2	3	0	1.43353	65.006	0.8
43	-1	3	2	1.42600	65.392	2.2
44	2	2	2	1.42052	65.676	6.1
45	-2	3	1	1.41577	65.924	3.4
46	1	3	2	1.36104	68.939	1.8
47	1	2	3	1.34957	69.608	0.6

No.	h	k	l	d [A]	2Theta[deg]	I [%]
48	-2	2	3	1.33992	70.183	0.5
49	3	2	1	1.32585	71.040	1.9
50	-1	0	4	1.32263	71.239	4.2
51	0	0	4	1.31192	71.911	0.9
52	-2	3	2	1.30877	72.111	1.5
53	0	4	0	1.30192	72.550	1.5
54	-3	1	3	1.28696	73.531	0.4
55	4	0	0	1.27098	74.611	1.6
56	0	4	1	1.26362	75.121	3.7
57	1	4	0	1.26123	75.288	2.1
58	-4	1	1	1.24595	76.376	2.2
59	-1	4	1	1.23754	76.990	0.3
60	4	1	0	1.23474	77.197	0.8
61	0	3	3	1.23215	77.389	0.8
62	-1	3	3	1.22968	77.573	0.7
63	1	0	4	1.22374	78.021	0.9
64	-2	1	4	1.21579	78.629	0.5
65	3	3	0	1.21262	78.875	2.2
66	2	2	3	1.19423	80.334	0.4
67	1	1	4	1.19094	80.602	0.3
68	-3	2	3	1.18313	81.245	0.5
69	-1	2	4	1.17922	81.571	1.6
70	0	2	4	1.17161	82.215	0.5
71	1	3	3	1.16768	82.552	1.6
72	0	4	2	1.16625	82.675	0.6
73	4	1	1	1.16142	83.095	2.1
74	2	4	0	1.15878	83.326	1.6
75	-1	4	2	1.15479	83.679	0.4

No.	h	k	l	d [A]	2Theta[deg]	I [%]
76	3	3	1	1.15283	83.854	1.4
77	-2	4	1	1.14934	84.167	1.7
78	4	2	0	1.14218	84.817	1.2
79	-3	0	4	1.12863	86.080	1.2
80	-2	2	4	1.12713	86.223	0.5
81	1	4	2	1.11947	86.959	0.3
82	2	4	1	1.11451	87.443	1.7
83	1	2	4	1.10752	88.137	2.1
84	3	1	3	1.10428	88.463	3.0
85	2	0	4	1.09639	89.268	0.9
86	-4	1	3	1.09203	89.721	2.4
87	-2	4	2	1.08984	89.950	1.6

Stick Pattern



ภาคผนวก ข แสดง JCPDS file no. 01-081-1550 สำหรับสารฟอสฟอร์ Zirconium Oxide

Name and formula	
Reference code:	01-081-1550
ICSD name:	Zirconium Oxide
Empirical formula:	$O_{2.12}Zr$
Chemical formula:	$ZrO_{2.12}$
Crystallographic parameters	
Crystal system:	Cubic
Space group:	Fm-3m
Space group number:	225
a (Å):	5.1291
b (Å):	5.1291
c (Å):	5.1291
Alpha (°):	90.0000
Beta (°):	90.0000
Gamma (°):	90.0000
Calculated density (g/cm^3):	6.16
Volume of cell (10^6 pm^3):	134.93
Z:	4.00
RIR:	9.52
Subfiles and Quality	
Subfiles:	Inorganic
	Alloy, metal or intermetalic
	Corrosion
	Modelled additional pattern
Quality:	Calculated (C)
Comments	
ICSD collection code:	072955
Test from ICSD:	At least one SOF implausible

References

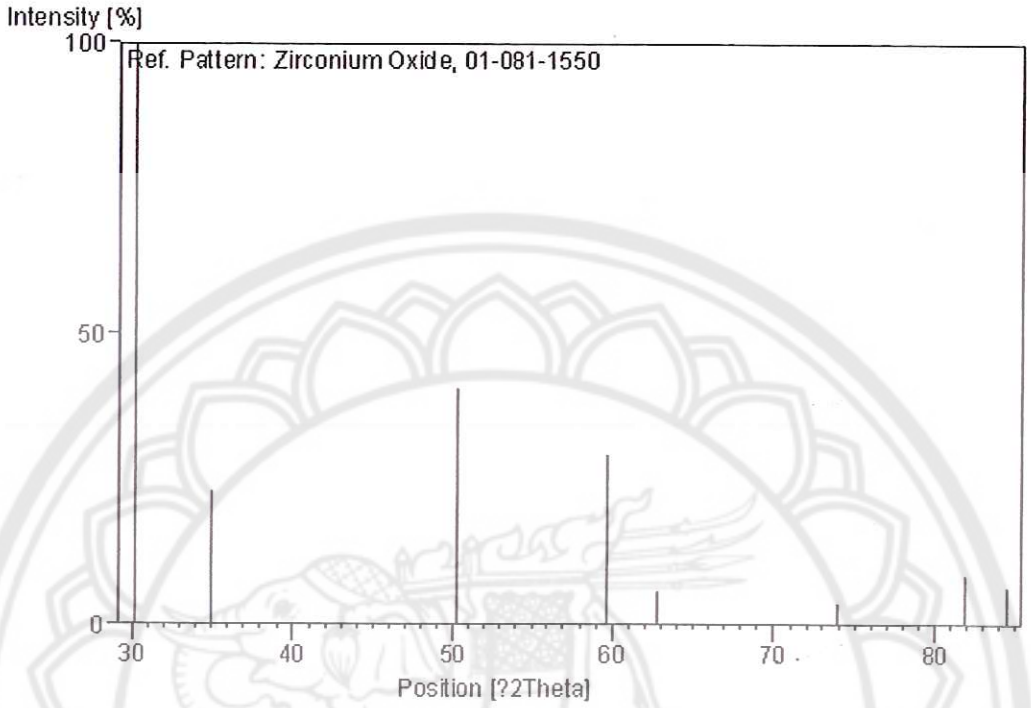
Primary reference: *Calculated from ICSD using POWD-12++*, (1997)

Structure: Martin, U., Boysen, H., Frey, F., *Acta Crystallogr., Sec. B: Structural Science*, 49, 403, (1993)

Peak list

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	1	2.96129	30.155	100.0
2	2	0	0	2.56455	34.959	23.2
3	2	2	0	1.81341	50.273	40.5
4	3	1	1	1.54648	59.749	29.1
5	2	2	2	1.48064	62.698	5.8
6	4	0	0	1.28228	73.844	3.8
7	3	3	1	1.17670	81.783	8.5
8	4	2	0	1.14690	84.387	6.4

Stick Pattern



ภาคผนวก ค แสดง JCPDS file no. 01-089-0510 สำหรับสารฟอสฟอร์ Zinc Oxide

Name and formula	
Reference code:	01-089-0510
ICSD name:	Zinc Oxide
Empirical formula:	OZn
Chemical formula:	ZnO
Crystallographic parameters	
Crystal system:	Hexagonal
Space group:	P63mc
Space group number:	186
a (Å):	3.2488
b (Å):	3.2488
c (Å):	5.2054
Alpha (°):	90.0000
Beta (°):	90.0000
Gamma (°):	120.0000
Calculated density (g/cm^3):	5.68
Volume of cell (10^6 pm^3):	47.58
Z:	2.00
RIR:	5.38
Subfiles and Quality	
Subfiles:	Inorganic
	Alloy, metal or intermetalic
	Corrosion
	Modelled additional pattern
Quality:	Calculated (C)
Comments	
ICSD collection code:	082028

References

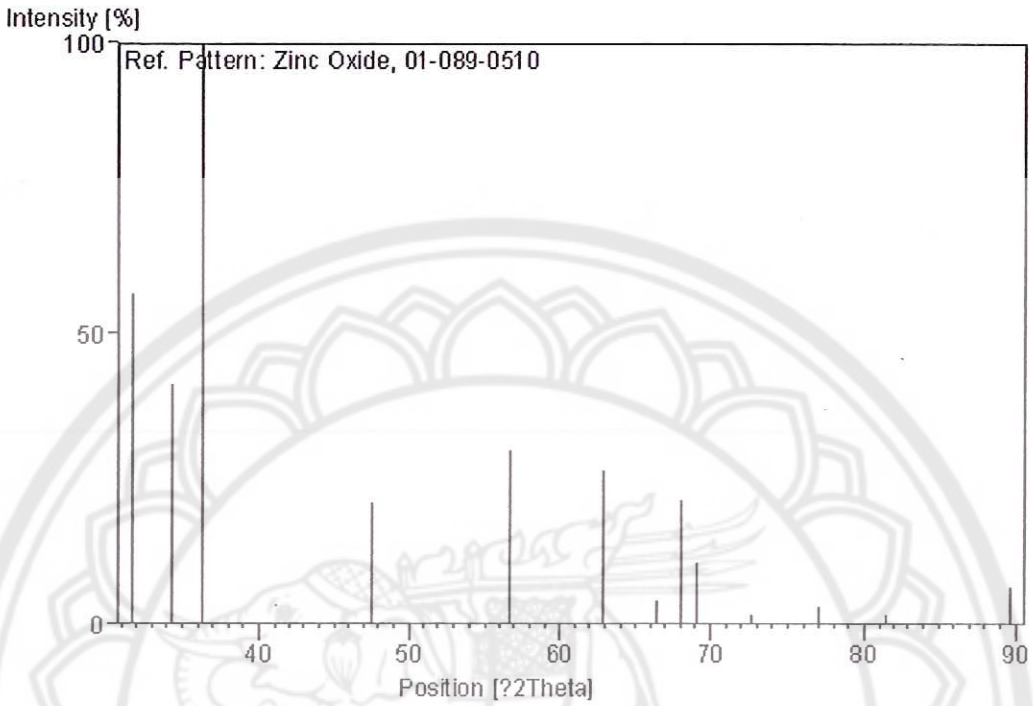
Primary reference: *Calculated from ICSD using POWD-12++*

Structure: Sawada, H., Wang, R., Sleight, A.W., *J. Solid State Chem.*, 122, 148, (1996)

Peak list

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	1	1	0	2.81354	31.779	57.1
2	0	0	2	2.60270	34.430	41.4
3	1	0	1	2.47513	36.265	100.0
4	1	0	2	1.91058	47.554	21.0
5	1	1	0	1.62440	56.615	30.1
6	1	0	3	1.47687	62.876	26.4
7	2	0	0	1.40677	66.400	4.0
8	1	1	2	1.37803	67.971	21.4
9	2	0	1	1.35805	69.112	10.5
10	0	0	4	1.30135	72.587	1.6
11	2	0	2	1.23756	76.988	3.2
12	1	0	4	1.18113	81.411	1.6
13	2	0	3	1.09275	89.646	6.5

Stick Pattern



ภาคผนวก ง แสดง JCPDS file no. 00-043-1030 สำหรับสารฟอสฟอร์ Samarium Oxide

Name and formula

Reference code: 00-043-1030

PDF index name: Samarium Oxide

Empirical formula: O_3Sm_2

Chemical formula: Sm_2O_3

Crystallographic parameters

Crystal system: Monoclinic

Space group: C2/m

Space group number: 12

a (Å): 14.1780

b (Å): 3.6288

c (Å): 8.8558

Alpha (°): 90.0000

Beta (°): 100.0300

Gamma (°): 90.0000

Calculated density (g/cm^3): 7.74

Volume of cell (10^6 pm^3): 448.66

Z: 6.00

RIR: 3.33

Subfiles and Quality

Subfiles: Inorganic

Alloy, metal or intermetalic

Superconducting Material

Quality: Calculated (C)

Comments

General comments: Calculation of diffractometer peak intensities done with MICRO-POWD v. 2.2 (D. Smith and K. Smith) using default instrument broadening function (NBS Table), diffracted beam monochromator polarization correction, and atomic scattering factors corrected for anomalous dispersion. Atomic positions from Cromer, D., *J. Phys. Chem.*, 61 753-755 (1957): Sm(1) in 4i with x=.1349, y=.5, z=.4905, Sm(2) in 4i with x=.1897, y=.5, z=.138, Sm(3) in 4i with x=.4663, y=.5, z=.1881, O(1) in 4i with x=.128, y=0.0, z=.286, O(2) in 4i with x=.324, y=.5, z=.027, O(3) in 4i with x=.299, y=.5, z=.374, O(4) in 4i with x=.49, y=0.0, z=.344, O(5) in 2b.

References

Primary reference: Grier, D., McCarthy, G., North Dakota State University, Fargo, North Dakota, USA., *ICDD Grant-in-Aid*, (1991)

Peak list

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	0	0	1	8.72000	10.136	1.0
2	2	0	0	6.98100	12.670	1.0
3	-2	0	1	5.98200	14.797	3.0
4	2	0	1	5.03800	17.590	2.0
5	0	0	2	4.36000	20.352	1.0
6	-2	0	2	4.02700	22.055	4.0
7	1	1	0	3.51200	25.340	1.0
8	4	0	0	3.49000	25.502	1.0
9	-4	0	1	3.45500	25.765	1.0
10	2	0	2	3.43900	25.887	18.0
11	-1	1	1	3.30800	26.931	1.0
12	1	1	1	3.20900	27.778	87.0
13	4	0	1	3.06200	29.141	89.0
14	-4	0	2	2.99100	29.848	93.0

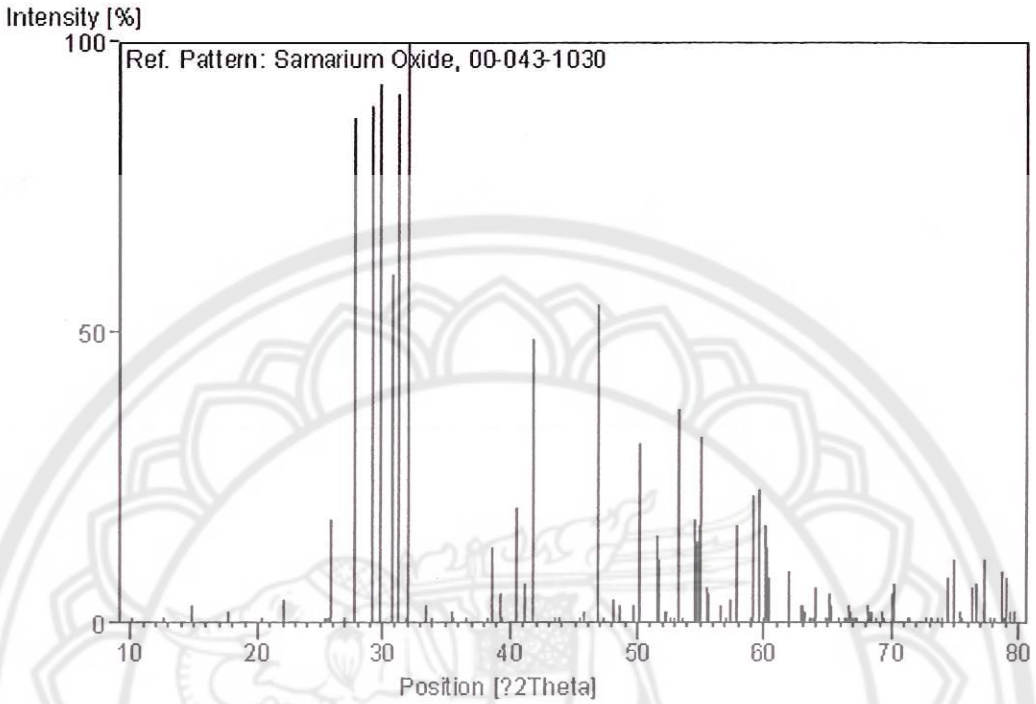
No.	h	k	l	d [A]	2Theta[deg]	I [%]
15	0	0	3	2.90700	30.732	60.0
16	3	1	0	2.86200	31.227	91.0
17	-3	1	1	2.81000	31.820	1.0
18	-1	1	2	2.79600	31.984	100.0
19	1	1	2	2.67800	33.433	3.0
20	3	1	1	2.63700	33.969	1.0
21	2	0	3	2.53200	35.423	2.0
22	-3	1	2	2.51910	35.611	1.0
23	-4	0	3	2.45390	36.590	1.0
24	-6	0	1	2.35290	38.220	1.0
25	6	0	0	2.32710	38.661	13.0
26	-1	1	3	2.28900	39.330	5.0
27	3	1	2	2.28290	39.440	1.0
28	-6	0	2	2.21950	40.615	20.0
29	1	1	3	2.19240	41.140	7.0
30	-3	1	3	2.15760	41.834	49.0
31	5	1	1	2.07790	43.519	1.0
32	4	0	3	2.06390	43.829	1.0
33	-6	0	3	1.99390	45.452	1.0
34	2	0	4	1.98490	45.670	2.0
35	3	1	3	1.93810	46.838	55.0
36	6	0	2	1.91870	47.340	1.0
37	-5	1	3	1.89040	48.093	4.0
38	5	1	2	1.87180	48.602	3.0
39	-3	1	4	1.83130	49.749	3.0
40	1	1	4	1.81560	50.209	31.0
41	-8	0	1	1.77160	51.546	15.0
42	-7	1	1	1.76620	51.715	11.0

No.	h	k	l	d [A]	2Theta[deg]	I [%]
43	-6	0	4	1.75030	52.220	2.0
44	7	1	0	1.74790	52.297	2.0
45	8	0	0	1.74460	52.404	1.0
46	-2	2	1	1.73630	52.673	1.0
47	-8	0	2	1.72730	52.969	1.0
48	4	0	4	1.71940	53.232	11.0
49	-7	1	2	1.71530	53.369	37.0
50	2	2	1	1.70710	53.646	1.0
51	-4	0	5	1.68170	54.522	18.0
52	6	0	3	1.67950	54.600	5.0
53	0	2	2	1.67520	54.752	14.0
54	-5	1	4	1.67280	54.837	17.0
55	7	1	1	1.66550	55.098	32.0
56	8	0	1	1.65660	55.419	1.0
57	-2	2	2	1.65420	55.506	6.0
58	3	1	4	1.65100	55.623	5.0
59	2	0	5	1.62660	56.532	3.0
60	-7	1	3	1.61020	57.160	1.0
61	-4	2	1	1.60550	57.343	4.0
62	-1	1	5	1.59010	57.951	17.0
63	-3	1	5	1.56570	58.942	1.0
64	4	2	1	1.56090	59.141	22.0
65	-4	2	2	1.55130	59.544	23.0
66	7	1	2	1.54310	59.893	1.0
67	0	2	3	1.53920	60.060	17.0
68	1	1	5	1.53550	60.220	13.0
69	-2	2	3	1.53310	60.324	4.0
70	8	0	2	1.53000	60.459	8.0

No.	h	k	l	d [A]	2Theta[deg]	I [%]
71	-8	0	4	1.49540	62.010	9.0
72	-2	0	6	1.47490	62.970	3.0
73	-5	1	5	1.47210	63.103	3.0
74	6	0	4	1.46840	63.281	2.0
75	4	0	5	1.46170	63.604	1.0
76	-4	2	3	1.45890	63.741	1.0
77	5	1	4	1.45580	63.893	1.0
78	0	0	6	1.45340	64.011	6.0
79	-6	2	1	1.43670	64.845	1.0
80	-4	0	6	1.43320	65.023	1.0
81	6	2	0	1.43080	65.146	5.0
82	9	1	0	1.42640	65.371	3.0
83	-10	0	1	1.41770	65.823	1.0
84	7	1	3	1.40610	66.436	1.0
85	-6	2	2	1.40480	66.506	1.0
86	-10	0	2	1.40250	66.629	3.0
87	-2	2	4	1.39780	66.882	2.0
88	10	0	0	1.39610	66.974	1.0
89	8	0	3	1.39300	67.143	1.0
90	6	2	1	1.38840	67.395	1.0
91	2	0	6	1.37590	68.091	3.0
92	9	1	1	1.37310	68.249	2.0
93	-9	1	3	1.37020	68.413	2.0
94	-1	1	6	1.36420	68.756	1.0
95	4	2	3	1.36270	68.843	1.0
96	-3	1	6	1.35580	69.243	2.0
97	-10	0	3	1.35390	69.354	1.0
98	10	0	1	1.34230	70.040	5.0

No.	h	k	l	d [A]	2Theta[deg]	I [%]
99	-7	1	5	1.34120	70.106	7.0
100	2	2	4	1.33920	70.226	5.0
101	1	1	6	1.32260	71.241	1.0
102	6	2	2	1.31830	71.509	1.0
103	-5	1	6	1.29990	72.681	1.0
104	9	1	2	1.29580	72.948	1.0
105 -	9	1	4	1.29200	73.198	1.0
106	5	1	5	1.28620	73.582	1.0
107	-10	0	4	1.28140	73.903	1.0
108	7	1	4	1.27220	74.528	8.0
109	-8	2	1	1.26740	74.858	11.0
110	4	0	6	1.26580	74.969	1.0
111	-2	2	5	1.26530	75.004	7.0
112	-6	2	4	1.25960	75.402	2.0
113	8	2	0	1.25780	75.529	1.0
114	0	2	5	1.25740	75.557	1.0
115	4	2	4	1.24800	76.228	6.0
116	0	0	7	1.24580	76.387	5.0
117	3	1	6	1.24320	76.575	7.0
118	-4	2	5	1.23300	77.326	11.0
119	-8	0	6	1.22680	77.790	1.0
120	8	2	1	1.22340	78.047	1.0
121	-11	1	1	1.21410	78.760	9.0
122	-7	1	6	1.21220	78.908	1.0
123	2	2	5	1.21120	78.986	8.0
124	-11	1	2	1.20700	79.315	2.0
125	9	1	3	1.20640	79.362	1.0
126	-9	1	5	1.20260	79.663	2.0

Stick Pattern



ภาคผนวก จ แสดง JCPDS file no. 01-081-2476 สำหรับสารฟอสฟอร์ Samarium Oxide

Name and formula	
Reference code:	01-086-2479
ICSD name:	Samarium Oxide
Empirical formula:	O_3Sm_2
Chemical formula:	Sm_2O_3
Crystallographic parameters	
Crystal system:	Cubic
Space group:	Ia-3
Space group number:	206
a (?):	10.9200
b (?):	10.9200
c (?):	10.9200
Alpha (?):	90.0000
Beta (?):	90.0000
Gamma (?):	90.0000
Calculated density (g/cm^3):	7.11
Measured density (g/cm^3):	7.10
Volume of cell (10^6 pm^3):	1302.17
Z:	16.00
RIR:	14.02
Status, subfiles and quality	
Status:	Diffraction data collected at non ambient temperature
Subfiles:	Inorganic
	Alloy, metal or intermetalic
	Modelled additional pattern
Quality:	Calculated (C)

Comments

ICSD collection code: 040475

Test from ICSD: Calc. density unusual but tolerable.

References

Primary reference: *Calculated from ICSD using POWD-12++*

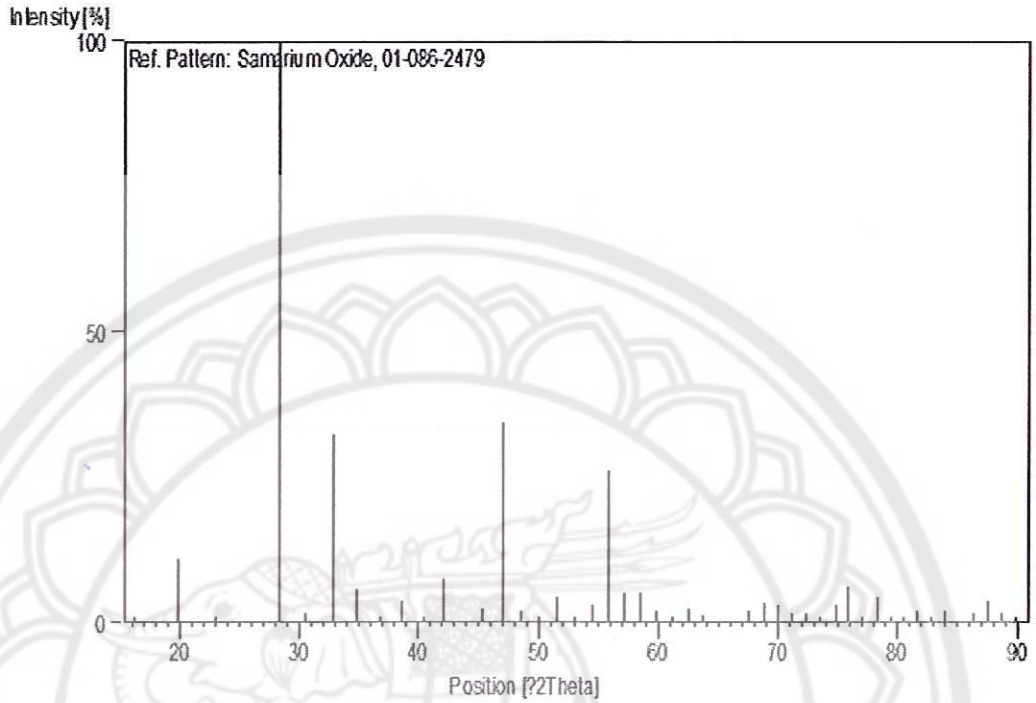
Structure: Saiki, A., Ishizawa, N., Mizutani, N., Kato, M., *Yogyo Kyokaishi (J. Ceram. Assoc. Jpn.)*, 93, 649, (1985)

Peak list

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	2	0	0	5.46000	16.221	0.3
2	2	1	1	4.45807	19.900	11.0
3	2	2	0	3.86080	23.018	0.1
4	2	2	2	3.15233	28.288	100.0
5	3	2	1	2.91849	30.608	1.6
6	4	0	0	2.73000	32.778	32.4
7	4	1	1	2.57387	34.828	5.9
8	8	2	0	2.44179	36.778	1.1
9	3	3	2	2.32815	38.642	3.7
10	4	2	2	2.22904	40.434	0.8
11	1	3	4	2.14159	42.162	7.4
12	1	2	5	1.99371	45.457	2.2
13	4	4	0	1.93040	47.036	34.3
14	4	3	3	1.87276	48.575	2.0
15	6	0	0	1.82000	50.079	0.4
16	6	1	1	1.77146	51.550	4.5
17	0	2	6	1.72660	52.992	1.0
18	1	4	5	1.68499	54.407	3.1
19	6	2	2	1.64625	55.798	26.0

No.	h	k	l	d [A]	2Theta[deg]	I [%]
20	1	3	6	1.61007	57.165	5.0
21	4	4	4	1.57617	58.512	5.2
22	5	4	3	1.54432	59.841	2.1
23	0	4	6	1.51433	61.151	1.1
24	1	2	7	1.48602	62.445	2.5
25	6	4	2	1.45925	63.724	1.3
26	6	5	1	1.38684	67.481	2.1
27	8	0	0	1.36500	68.710	3.3
28	8	1	1	1.34416	69.929	3.0
29	8	2	0	1.32424	71.139	1.6
30	6	5	3	1.30519	72.340	1.8
31	8	2	2	1.28693	73.533	1.1
32	8	3	1	1.26942	74.719	2.9
33	6	6	2	1.25261	75.897	6.0
34	7	5	2	1.23645	77.070	0.1
35	0	4	8	1.22089	78.238	4.5
36	8	3	3	1.20591	79.400	0.8
37	2	4	8	1.19147	80.558	0.9
38	6	5	5	1.17753	81.713	1.9
39	6	6	4	1.16408	82.863	0.1
40	1	5	8	1.15107	84.011	2.0
41	7	6	3	1.12631	86.301	1.6
42	8	4	4	1.11452	87.442	3.7
43	8	5	3	1.10309	88.583	1.7
44	8	6	0	1.09200	89.724	1.1

Stick Pattern



ภาคผนวก ค แสดง JCPDS file no. 01-081-2476 สำหรับสารฟอสฟอร์ Europium Oxide

Name and formula	
Reference code:	01-081-2476
PDF index name:	Europium Oxide
Empirical formula:	Eu_2O_3
Chemical formula:	Eu_2O_3
Crystallographic parameters	
Crystal system:	Cubic
Space group:	Ia3
Space group number:	206
a (Å):	10.8590
b (Å):	10. 8590
c (Å):	10. 8590
Alpha (°):	90.0000
Beta (°):	90.0000
Gamma (°):	90.0000
Calculated density (g/cm^3):	7.30
Calculated density (g/cm^3):	7.28
Volume of cell (10^6 pm^3):	1283.76
Z:	16.00
RIR:	13.26
Status, subfiles and quality	
Status:	Diffraction data collected at non ambient temperature
Subfiles:	Inorganic
	Alloy, metal or intermetalic
	Modelled additional pattern
Quality:	Calculated (C)

Comments

ICSD collection code: 040472

References

Primary reference: *Calculated from ICSD using POWD-12++*

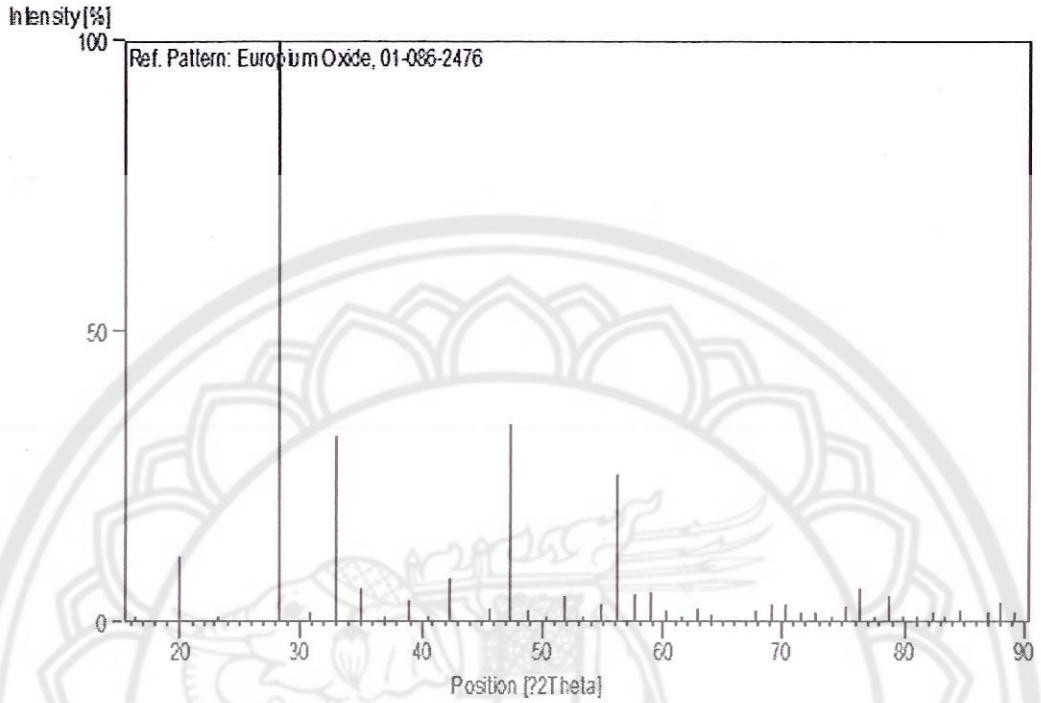
Structure: Saiki, A., Ishizawa, N., Mizutani, N., Kato, M., *Yogyo Kyokaishi (J. Ceram. Assoc. Jpn.)*, 93, 649, (1985)

Peak list

No.	h	k	l	d [A]	2Theta[deg]	I [%]
1	2	0	0	5.42950	16.312	0.3
2	2	1	1	4.43317	20.013	11.2
3	2	2	0	3.83924	23.149	0.1
4	2	2	2	3.13472	28.450	100.0
5	1	2	3	2.90219	30.784	1.6
6	4	0	0	2.71475	32.968	32.0
7	4	1	1	2.55949	35.030	5.8
8	4	2	0	2.42815	36.992	1.1
9	3	3	2	2.31515	38.868	3.7
10	4	2	2	2.21658	40.671	0.8
11	1	3	4	2.12963	42.410	7.4
12	1	2	5	1.98257	45.727	2.2
13	4	4	0	1.91962	47.316	34.2
14	4	3	3	1.86230	48.866	2.0
15	6	0	0	1.80983	50.380	0.4
16	2	3	5	1.76156	51.861	4.5
17	0	2	6	1.71696	53.313	1.0
18	1	4	5	1.67558	54.738	3.1
19	6	2	2	1.63706	56.139	25.5
20	1	3	6	1.60107	57.517	4.9

No.	h	k	l	d [A]	2Theta[deg]	I [%]
21	4	4	4	1.56736	58.874	5.0
22	5	4	3	1.53569	60.212	2.0
23	0	4	6	1.50587	61.532	1.1
24	1	2	7	1.47772	62.836	2.5
25	6	4	2	1.45109	64.125	1.3
26	1	5	6	1.37909	67.912	2.0
27	8	0	0	1.35738	69.151	3.2
28	8	1	1	1.33665	70.380	2.9
29	8	2	0	1.31685	71.600	1.5
30	6	5	3	1.29790	72.811	1.7
31	8	2	2	1.27975	74.014	1.0
32	8	3	1	1.26233	75.211	2.8
33	6	6	2	1.24561	76.401	5.8
34	7	5	2	1.22954	77.584	0.1
35	0	4	8	1.21407	78.762	4.3
36	8	3	3	1.19918	79.935	0.8
37	8	4	2	1.18481	81.105	0.8
38	6	5	5	1.17096	82.270	1.8
39	6	6	4	1.15757	83.433	0.1
40	1	5	8	1.14464	84.592	1.9
41	7	6	3	1.12002	86.905	1.5
42	8	4	4	1.10829	88.060	3.5
43	8	5	3	1.09692	89.214	1.7

Stick Pattern



อภิธานศัพท์

อภิธานศัพท์

สารคีเลตติ้ง (chelating agents)	สารอินทรีย์ที่สามารถจับกับโลหะที่มีประจุได้
สารฟอสฟอร์ (phosphor materials)	สารที่มีคุณสมบัติในการเรืองแสงสีต่างๆ ในช่วงที่ตามองเห็นได้
f-f transition	การเปลี่ยนแปลงระดับพลังงานในระดับชั้นพลังงานระหว่าง f – f
intensity	ค่าความเข้ม(ความสูง)ของพีค