

**Name and formula**

Reference code: 00-043-0626

PDF index name: Zinc Indium Gallium Oxide

Empirical formula:  $\text{GaInO}_{18}\text{Zn}_{15}$

Chemical formula:  $\text{InGaO}_3(\text{ZnO})_{15}$

**Crystallographic parameters**

Crystal system: Rhombohedral

Space group: R-3m

Space group number: 166

a (Å): 3,2620

b (Å): 3,2620

c (Å): 135,2000

Alpha (°): 90,0000

Beta (°): 90,0000

Gamma (°): 120,0000

Calculated density (g/cm<sup>3</sup>): 5,81

Volume of cell (10<sup>6</sup> pm<sup>3</sup>): 1245,88

Z: 3,00

RIR: -

**Subfiles and Quality**

Subfiles: Inorganic

Quality: Star (S)

**Comments**

Color: Cream

General comments: The lattice constants are given in hexagonal system.  
The X-ray powder diffraction was measured at room temperature.  
Pattern submitted by the Japanese Committee on Powder Diffraction Data, Tokyo, Japan.

Sample preparation: Prepared by heating a mixture of  $\text{In}_2\text{O}_3:\text{Ga}_2\text{O}_3:\text{ZnO} = 1:1:30$  (in mole ratio) in a Pt-tube at 1350 C, for 9 days, air quenched.

**References**

Primary reference: Nakamura, M. et al., *J. Solid State Chem.*, **93**, 298, (1991)

Contributed: Ishizawa, N., Japan., *Private Communication*, (1992)

**Peak list**

No.	h	k	l	d [Å]	2Theta[deg]	I [%]
1	0	0	6	22,52200	3,920	1,0
2	0	0	45	3,00360	29,720	1,0
3	1	0	1	2,82470	31,650	73,0
4	0	0	48	2,81600	31,751	21,0

5	0	0	51	2,65060	33,789	100,0
6	1	0	22	2,56660	34,930	1,0
7	1	0	25	2,50420	35,830	65,0
8	0	1	26	2,48210	36,160	30,0
9	0	0	57	2,37140	37,910	1,0
10	0	1	50	1,95340	46,449	1,0
11	1	0	52	1,91300	47,490	8,0
12	0	1	53	1,89310	48,020	3,0
13	1	1	0	1,63120	56,358	30,0
14	1	1	30	1,53370	60,298	1,0
15	1	1	36	1,49610	61,978	10,0
16	0	1	77	1,49110	62,209	6,0
17	1	0	79	1,46340	63,522	2,0
18	0	2	1	1,41260	66,091	6,0
19	1	1	51	1,38920	67,351	16,0
20	1	1	54	1,36660	68,619	12,0
21	2	0	26	1,36330	68,808	5,0
22	0	0	102	1,32520	71,080	1,0
23	1	1	60	1,32120	71,328	1,0
24	0	0	105	1,28730	73,509	3,0
25	0	2	52	1,24120	76,721	1,0
26	2	0	62	1,18550	81,048	1,0
27	2	0	77	1,10060	88,837	2,0
28	2	1	1	1,06780	92,339	2,0
29	2	1	25	1,04760	94,665	5,0
30	1	2	26	1,04600	94,855	3,0
31	1	1	102	1,02850	97,000	1,0
32	1	1	105	1,01050	99,334	2,0

## Stick Pattern



