



Alumina Crucibles

Quartz Crucibles

Platinum Crucibles

Agate Mortar and Pestle

Ovens and Furnaces

Alumina Tube

Quartz Tube

Thermal Analysis Crucible

Powder Compaction Dies

Substrate

High Density Graphite Components

Zirconia Components

Autoclave and PTFE Components

Silver Paste

Graphene related Products

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Your Research Partner

Vision :

Our vision is to be a reliable supplier and partner for products and services in the field of high temperature research and applications.

Mission :

Our mission is to deliver value added, high temperature ceramic products and laboratory furnaces of highest quality, at the doorsteps of our customers. We aim to do so by designing and developing solutions that best meet customer's requirement and delivering in shortest possible time.

Team :

We are a team of engineers from Indian Institute of Technology with diverse background but with a common passion for research and development. Together we have over a decade of experience in the field of ceramics and are committed to quality, speed, value and service.

Contacts :

ANTS Ceramics Pvt Ltd

Unit No. 1, Jivdani Industrial Estate No. 1
Off Western Express Highway,
Dhumal Nagar, Vasai East, Pin - 401208
Maharashtra, India

Contact no: +91-8600033151/+91-8600033155
www.antslab.in Email: sales@antsceramics.com

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99.7% Alumina Lab Wares

Cylindrical Crucible



Cylindrical Crucible

Sr.	Code	Capacity(ml)	Outer Diameter(mm)	Height(mm)
1	CruCy A1	1	17	12
2	CruCy A3	3	17	22
3	CruCy A10	10	28	29
4	CruCy A15	15	28	42
5	CruCy B15	15	32	35
6	CruCy A20	20	32	40
7	CruCy B20	20	28	50
8	CruCy A30	30	35	45
9	CruCy A40	40	40	52
10	CruCy A50	50	41	56
11	CruCy A60	60	55	40
12	CruCy A80	80	47	65
13	CruCy A100	100	52	65
14	CruCy A150	150	54	89
15	CruCy A 225	225	64	83
16	CruCy A450	450	84	105

Conical Crucible



Conical Crucible

Sr.	Code	Capacity(ml)	Upper Diameter(mm)	Lower Diameter(mm)	Height(mm)
17	CruCon A20	20	33	23	42
18	CruCon A30	30	48	29	43
19	CruCon A50	50	46	33	53
20	CruCon A100	100	64	32	86

High Form Crucible



High Form Crucible

Sr.	Code	Capacity(ml)	Upper Diameter(mm)	Lower Diameter(mm)	Height(mm)
21	CruHF A5	5	23	14	29
22	CruHF A10	10	30	19	33
23	CruHF A20	20	39	24	36
24	CruHF A50	50	52	32	47
25	CruHF A100	100	62	36	65
26	CruHF A250	250	82	39	90

Low Form Crucible



Low Form Crucible

Sr.	Code	Capacity(ml)	Upper Diameter(mm)	Lower Diameter(mm)	Height(mm)
27	CruLF A10	10	39	25	25
28	CruLF A25	25	43	22	37
29	CruLF A50	50	61	32	44
30	CruLF A80	80	64	34	56
31	CruLF A225	225	87	50	58

Apart from above, other sizes are also available on request.
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Dish



99.7% Alumina Lab Wares

Dish

Sr.	Code	Capacity(ml)	Outer Diameter(mm)	Height(mm)
32	Dish A10	10	40	10
33	Dish A20	20	50	12
34	Dish A40	40	60	20
35	Dish A100	100	75	32
36	Dish A250	250	101	43

Disc



Disc (Lid for Crucibles and Dish)

Sr.	Code	Diameter(mm)	Thickness(mm)
37	Cov 10	10	4
38	Cov 15	15	4
39	Cov 20	20	4
40	Cov 25	25	4
41	Cov 28	28	4
42	Cov 32	32	4
43	Cov 38	38	4
44	Cov 48	48	4
45	Cov 58	58	4
46	Cov 75	75	4
47	Cov 90	90	4
48	Cov 100	100	4
49	Cov 115	115	4
50	Cov 125	125	4
51	Cov 150	150	4

Tray



Tray

Sr.	Code	Capacity (ml)	Length(mm)	Width(mm)	Height(mm)
52	Tray A5	5	50	26	10
53	Tray A10	10	50	25	19
54	Tray C10	10	50	50	15
55	Tray A15	15	85	34	12
56	Tray A25	25	99	25	20
57	Tray B25	25	77	51	12
58	Tray A30	30	50	50	27
59	Tray A80	80	124	40	26
60	Tray B80	80	80	55	30
61	Tray A100	100	101	52	32
62	Tray A340	340	200	90	25

Boat

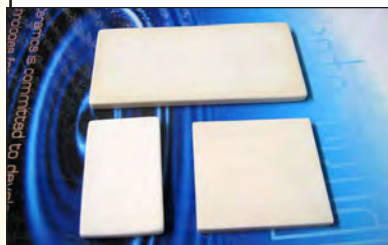


Boat

Sr.	Code	Capacity(ml)	Length(mm)	Width(mm)	Height
63	Boat A3	3	91	12	11
64	Boat A7	7	86	15	13
65	Boat A15	15	110	20	18
66	Boat A30	30	117	30	19
67	Boat B30	30	86	27	27
68	Boat A40	40	136	27	21
69	Boat A500	500	255	90	40

Apart from above, other sizes are also available on request.
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Plate



**99.7% Alumina Lab Wares
Plate (Cover for Boat and Tray)**

Sr.	Code	Length(mm)	Width(mm)	Thickness(mm)
70	Plate 1	50	50	4
71	Plate 2	58	33	4
72	Plate 3	80	29	4
73	Plate 4	99	32	4
74	Plate 5	105	20	4
75	Plate 6	105	55	4
76	Plate 7	126	52	4
77	Plate 8	153	69	4
78	Plate 9	100	100	4
79	Plate 10	260	90	4
80	Plate 11	20	20	4

Properties of Alumina Labwares

- 1 99.7% Alumina Labwares are made from ALCOA Alumina imported from Germany.
- 2 These Labwares are made by slip casting process. Special care has been taken to maintain purity of sintered Alumina to be above 99.7%
- 3 Sintered Grain Size is between 2-4 microns.
- 4 Tolerance: +/- 1mm for dimensions up to 50mm. +/- 2mm for dimensions above 50mm.
- 5 Chemical Composition of ALCOA Powder (Sintered Product) by ICP

Al₂O₃[%]	99.8(99.7)	SiO₂[%]	0.015 (0.05)	MgO[%]	0.04(0.08)
Na₂O[%]	0.03 (0.03)	Fe₂O₃[%]	0.015 (0.015)	CaO[%]	0.01(0.03)

- 6 Sintered Density : above 3.85 gm/cc, above 98% TD (3.96gm/cc)
- 7 Lustre and Colour Vitreous Lustre, Ivory Colour, Translucent
- 8 Solubility in boiling HF: 0.1% by wt after three hours
Solubility in boiling HCL, H₂ SO₄ and NaOH after 12 Hours: less than 10⁻³ % by wt
- 9 Thermal Shock Behavior: Temperature change rate should not exceed 150°C/Hr
- 10 Maximum Temperature of use without load: 1750°C
- 11 Ants Alumina 99.7% has been tested to be Ultra High Vacuum Compatible
- 12 Although Alumina 99.7% does not react with most acids, chemicals and reagents, it does form Low temperature eutectic with compounds Bismuth, Lead, Silicon, Tin, Antimony and Rare Earths. So care has to be taken to not use Alumina wares for heat treatment of one eutectic forming compound with another eutectic forming compound.
- 13 Recommended Usage:
Ants 99.7% Alumina wares are especially useful to chemists, metallurgists, and others involved in high temperature work demanding contamination-free results. These wares are highly refractory, meant for use in reducing and oxidizing atmospheres. It is inert in hydrogen and carbonaceous atmospheres and offers high resistance to alkalies and other fluxes. Suitable for glass melting, including borosilicate glass.

Physical Properties

	Units of Measure	Value
Density	gm/cc (lb/ft ³)	>3.85
Porosity	% (%)	<0.5
Flexural Strength	MPa (lb/in ² x10 ³)	379
Elastic Modulus	GPa (lb/in ² x10 ⁶)	375
Shear Modulus	GPa (lb/in ² x10 ⁶)	152
Bulk Modulus	GPa (lb/in ² x10 ⁶)	228
Poisson's Ratio	---	0.22
Compressive Strength	MPa (lb/in ² x10 ³)	2600
Tensile Strength, 250C	MPa (lb/in ² x10 ³)	275
Hardness	Kg/mm ²	1440
Thermal Conductivity	W/m ² K	35
Coefficient of Thermal Expansion	10 ⁻⁶ /°C	8.4
Specific Heat	J/Kg.°K	880
Dielectric Strength	Ac-kv/mm (volts/Mil)	16.9
Dielectric Constant	@ 1 Mhz	9.8
Dissipation Factor	@ 1 KHz	0.0002

**Apart from above, other sizes are also available on request.
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Properties of Alumina Labwares

99.99% Fused Quartz Transparent Lab Wares

Low Form Crucible

Low Form
Crucible



Sr.	Code	Capacity(ml)	Upper Diameter (mm)	Height(mm)
1	QCruLFA15	15	45	30
2	QCruLFA25	25	50	32
3	QCruLFA50	50	55	48
4	QCruLFA80	80	62	58
5	QCruLFA100	100	65	60
6	QCruLFA150	150	70	63

Lid for Low Form Crucible

Lid for Low
Form Crucible



Sr.	Code
7	QCovL15
8	QCovL25
9	QCovL50
10	QCovL80
11	QCovL100
12	QCovL150

Tall Form Crucible

Tall Form
Crucible



Sr.	Code	Capacity(ml)	Upper Diameter (mm)	Height(mm)
13	QCruTFA15	15	40	35
14	QCruTFA25	25	45	45
15	QCruLFA50	50	50	55

Lid for Tall Form Crucible

Lid for
Tall Form
Crucible



Sr.	Code
16	QCovT15
17	QCovT25
18	QCovT50

Evaporating Basin

Evaporating
Basin



Sr.	Code	Capacity(ml)	Top Diameter (mm)
19	QEvaBA20	20	48
20	QEvaBA35	35	55
21	QEvaBA70	70	70
22	QEvaBA100	100	80
23	QEvaBA150	150	90
24	QEvaBA200	200	98
25	QEvaBA250	250	110

Dish

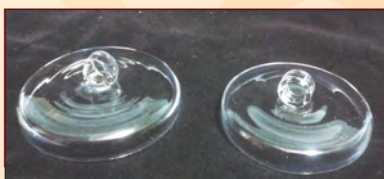
Dish



Sr.	Code	Diameter (mm)	Height(mm)
26	QDishA2	50	17
27	QDishA3	80	17
28	QDishA4	100	17

Cover for Dish

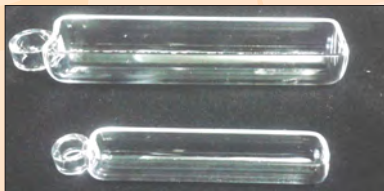
Cover for
Dish



Sr.	Code	Diameter (mm)	Height(mm)
29	QDishB2	54	15
30	QDishB3	83	15
31	QDishB4	103	15

Boat

Boat

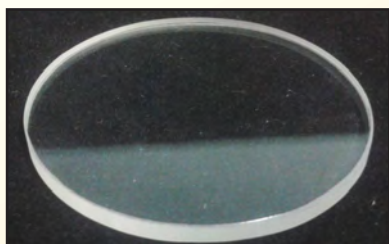


Sr.	Code	Length(mm)	Width(mm)	Height(mm)
32	Qboat5012	50	12	8
33	QBoat7512	75	12	8
34	QBoat7520	75	20	12
35	Qboat10020	100	20	15

Apart from above, other sizes are also available on request.
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99.99% Fused Quartz Transparent Lab Wares

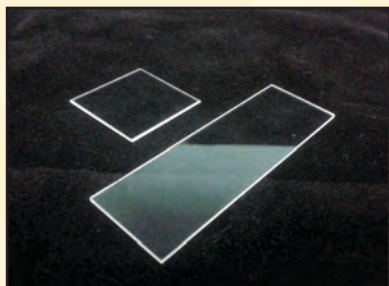
Disc



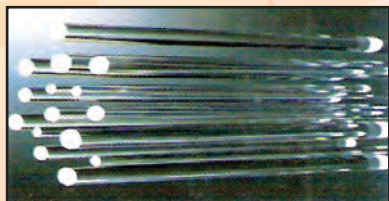
Gooch Crucible



Plate



Rod



Disc

Sr.	Code	Diameter (mm)	Thickness(mm)
36	QDisc2501	25	1
37	QDisc2502	25	2
38	QDisc2503	25	3
39	QDisc2504	25	4
40	QDisc2505	25	5
41	QDisc5001	50	1
42	QDisc5002	50	2
43	QDisc5003	50	3
44	QDisc5004	50	4
45	QDisc5005	50	5
46	QDisc7501	75	1
47	QDisc7502	75	2
48	QDisc7503	75	3
49	QDisc7504	75	4
50	QDisc7505	75	5
51	QDisc10001	100	1
52	QDisc10002	100	2
53	QDisc10003	100	3
54	QDisc10003	100	4
55	Qdisc10003	100	5

Gooch Crucible

Sr.	Code	Capacity(ml)
56	QCruGA20	20
57	QCruGA30	30
58	QCruGA50	50

Plate

Sr.	Code	Length(mm)	Width(mm)	Thickness(mm)
59	QPlate1	10	10	1
60	QPlate2	10	10	2
61	QPlate3	10	10	3
62	QPlate4	10	10	4
63	QPlate5	10	10	5
64	QPlate6	25	25	1
65	QPlate7	25	25	2
66	QPlate8	25	25	3
67	QPlate9	25	25	4
68	QPlate10	25	25	5
69	QPlate11	50	50	1
70	QPlate12	50	50	2
71	QPlate13	50	50	3
72	QPlate14	50	50	4
73	QPlate15	50	50	5
74	QPlate16	75	75	1
75	QPlate17	75	75	2
76	QPlate18	75	75	3
77	QPlate19	75	75	4
78	QPlate20	75	75	5
79	QPlate21	75	25	1
80	QPlate22	75	25	2
81	QPlate23	75	25	3
82	QPlate24	75	25	4
83	QPlate25	75	25	5
84	Qplate26	100	100	1
85	QPlate27	100	100	2
86	QPlate28	100	100	3
87	QPlate29	100	100	4
89	QPlate30	100	100	5
90	QPlate31	400	400	2
91	QPlate32	400	400	3
92	QPlate33	400	400	4
93	QPlate34	400	400	5

Rod

Sr.	Code	Diameter(mm)	Length(mm)
94	QRod10	10	1200
95	QRod15	15	1200
96	QRod20	20	1200
97	QRod25	25	1200

Apart from above, other sizes are also available on request.

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99.99% Fused Quartz Transparent Lab Wares

Separating Funnel



Separating Funnel

Sr.	Code	Capacity(ml)
106	QSF25	25
107	QSF50	50
108	QSF125	125
109	QSF250	250
110	QSF500	500

Thermal Properties

Thermal Properties

Thermal Conductivity	1.38(W/m ² K)
Coefficient of Thermal Expansion (0~1000°C)	0.55 (106/°C)
Normal Operating Temperature	Continuous Usage ~1050°C Non Continuous Usage ~1250°C
Strain Point	~1075°C
Annealing Point	~1180°C
Hot Processing Temperature	~1700 - 2100°C
Devitrification Temperature	Starting at ~1000°C.High Temperature accelerates devitrification, especially with surface contaminants such as alkaline solution. salts and vapors.

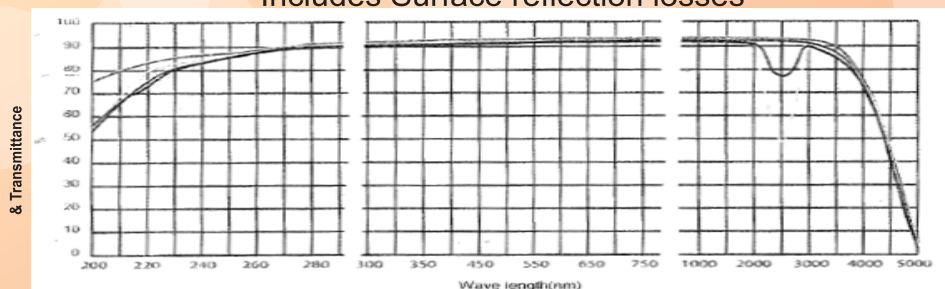
Physical Properties

Physical Properties

	Units of Measure	Value
Density	gm/cc (lb/ft ³)	2.2
Porosity	%(%)	0
Tensile Strength	10 ⁶ Pa	48.3
Young's Modulus	10 ⁹ Pa	71.7
Hardness	Kg/mm ²	600
Thermal Conductivity	W/ m ² K	1.38
Coefficient of Thermal Expansion	10-6/°C	0.55
Specific Heat	J/Kg.°K	740
Dielectric Strength	Ac-kv/mm (volts/mil)	30
Dielectric Constant	@1MHz	3.82
Index of refraction @587.6nm	-	1.4585

Fused Quartz Average Transmittance Curve

Includes Surface reflection losses



Apart from above, other sizes are also available on request.
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Fused Quartz Average Transmittance Curve

Platinum High Form Crucible



Platinum

Platinum High Form Crucible

Sr.	Code	Capacity (ml)	Top Diameter (mm)	Height (mm)	Approximate Weight(g)		
					Crucible	Reinforced rim	Lid
1	PCruHF 10	10	26	29	8	9.5	2.5
2	PCruHF 15	15	29	33	11	13	4
3	PCruHF 20	20	32	36	16	18	4.5
4	PCruHF 25	25	35	39	20	23	5
5	PCruHF 30	30	37	41	25	28	5
6	PCruHF 35	35	39	43	29	32	6
7	PCruHF 40	40	41	46	33	36.5	7
8	PCruHF 50	50	44	49	42	46	8
9	PCruHF 75	75	50	55	60	65	10
10	PCruHF 100	100	56	62	80	85	16

Platinum Micro Crucible



Platinum Micro Crucible

Sr.	Code	Capacity (ml)	Top Diameter (mm)	Height (mm)	Approximate Weight(g)	
					Crucible	Lid
11	PMCru1	1	12	13	2	0.5
12	PMCru3	3	17	19	4.2	1.5
13	PMCru5	5	20.5	22	5.5	1.75

Platinum Low Form Crucible



Platinum Low Form Crucible

Sr.	Code	Capacity (ml)	Top Diameter (mm)	Height (mm)	Approximate Weight(g)		
					Crucible	Reinforced rim	Lid
14	PCruLF10	10	29	24	8	9.5	3
15	PCruLF15	15	32	26	13	15	5
16	PCruLF20	20	37	30	16	18	5
17	PCruLF25	25	41	34	20	23	6.5
18	PCruLF35	35	44	36	30	33	8.5
19	PCruLF50	50	49	40	42	45	10
20	PCruLF70	70	55	45	60	64	16

Platinum Dish



Platinum Dish

Sr.	Code	Capacity (ml)	Top Diameter (mm)	Height (mm)	Approximate Weight(g)		
					Crucible	Reinforced rim	Lid
21	PDish30	30	50	22	18	18.5	12
22	PDish50	50	57	26	19	22	15
23	PDish60	60	63	27	24	26	18
24	PDish75	75	70	28	28	31	20
25	PDish100	100	75	29	37	41	22
26	PDish150	150	85	35	58	62	28
27	PDish250	250	100	41	93	100	45
28	PDish500	500	125	50	175	185	63
29	PDish700	700	143	58	205	215	82

Other Platinum Components



Other Platinum Components

Pt-Pt Rh Thermocouple Wires, Platinum wires,
Platinum mesh, Platinum foil, Refurbished
platinum crucibles, Custom designed Platinum components.

Apart from above, other sizes are also available on request.
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Mortar & Pestle Grey Agate Mortar & Pestle

Grey Agate Mortar & Pestle



Sr.	Code	Size ID Inch (mm)
1	AM-200	2 (50)
2	AM-205	2.5 (63)
3	AM-300	3 (75)
4	AM-305	3.5 (88)
5	AM-400	4 (100)
6	AM-405	4.5 (113)
7	AM-500	5 (125)
8	AM-505	5.5 (138)
9	AM-600	6 (150)

Note : Tolerance in above dimensions in Inch is +/- 0.2 inch maximum

Remarks :

- 1) Agate is a microcrystalline variety of silica, chiefly chalcedony, characterised by its fineness of grain and brightness of color. Although agates may be found in various kinds of rock, they are classically associated with volcanic rocks and can be common in certain metamorphic rocks.
- 2) Most agates occur as nodules in volcanic rocks or ancient lavas where they represent cavities originally produced by the disengagement of volatiles in the molten mass which were then filled, wholly or partially, by siliceous matter deposited in regular layers upon the walls. Such agates, when cut transversely, exhibit a succession of parallel lines, often of extreme tenuity giving a banded appearance to the section. Such stones are known as banded agate, ribband agate and striped agate.

3) Physical Properties :

Color	White to grey, light blue, orange to red, black banded
Crystal habit	Cryptocrystalline silica
Crystal system	Rhombohedral Microcrystalline
Cleavage	None
Fracture	Conchoidal with very sharp edges.
Mohs scale hardness	6.5-7
Luster	Waxy
Diaphaneity	Translucent
Density (gm/cc)	2.58-2.64



Each piece of Grey agate Mortar and Pestles are checked and tested properly before dispatch



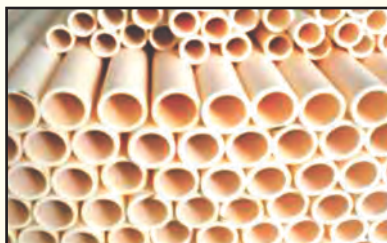
Agate Mortar and Pestles are being made from natural agate by cutting, grinding and polishing.



Agate pestles can be cylindrical and hexagonal cut. Cylindrical pestles are given on request and prices are different too.

Apart from above, other sizes are also available on request.
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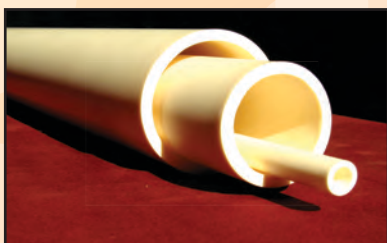
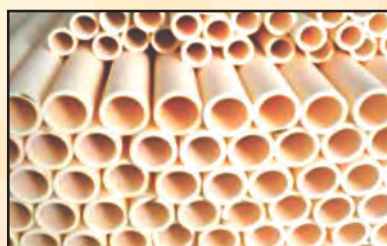
**99.5% Alumina Tubes
(for upto 1700°C application)**



**99.5% Alumina
Thermocouple
Beads:2/4 bore**



**80% Alumina Tubes
(for upto 1400°C application)**



Alumina Tubes

99.5% Alumina Tubes (for upto 1700°C application)

Sr.	Outer Diameter(mm)	Inner Diameter(mm)
1	6	4
2	8	5
3	10	6
4	12	8
5	15	10
6	20	15
7	24	18
8	25	17
9	30	22
10	35	28
11	40	32
12	45	37
13	50	40
14	55	45
15	62	52
16	65	55
17	70	60
18	75	65
19	80	68
20	85	73
21	90	78
22	95	83
23	100	88
25	116	104

All dimensions are in mm.

Tolerance upto 24mm OD : +/- 1 mm in OD and ID.

Tolerance beyond 24mm OD : +/- 4% of diameter or +/- 2 mm whichever is maximum.

99.5% Alumina Thermocouple Beads:2/4 bore

Sr.	Outer Diameter(mm)	Bore Inner Diameter(mm)
26	3.5	1
27	4.5	1.2
28	5.5	1.2
29	7.2	1.4
30	8.5	1.8

All dimension are in mm

80% Alumina Tubes (for upto 1400°C application)

Sr.	Outer Diameter(mm)	Inner Diameter(mm)
31	8	4
32	10	7
33	12	8
34	15	11
35	20	15
36	22	17
37	25	30
38	29	22
39	32	25
40	37	30
41	40	33
42	44	37
43	48	40
44	58	50
45	65	58
46	75	65
47	85	75
48	100	90
49	110	95
50	120	105

All dimensions are in mm.

Tolerance upto 24mm OD : +/- 1 mm in OD and ID.

Tolerance beyond 24mm OD : +/- 3% of diameter or +/- 2 mm whichever is maximum.

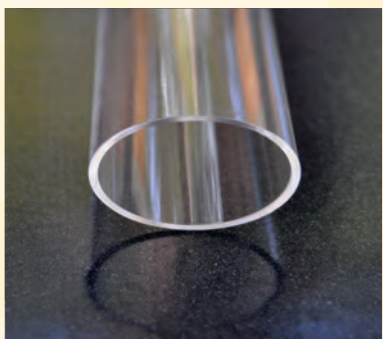
Apart from above, other sizes are also available on request.
www.antslab.in

Quartz Tubes

Quartz Tubes (for upto 1100°C application)

Imported quartz tubes can be transparent or milky white. Transparent quartz tubes can withstand up to 1100 Degree Centigrade temperature. Quartz tubes can withstand very high thermal shock (1000 Degree Centigrade to RT). Quartz tubes can withstand vacuum up to 10(-3)Torr.

Quartz Tubes (for up to 1100°C application)



Vacuum Flange



Sr.	Code	Outer Diameter (mm)	Inner Diameter (mm)	Length(mm)
98	QTube1	4	2	1200
99	QTube2	6	4	1200
100	QTube3	7	5	1200
101	QTube4	8	6	1200
102	QTube5	10	8	1200
103	QTube6	11	9	1200
104	QTube7	12	10	1200
105	QTube8	15	12	1200

Sr.	Code	Outer Diameter (mm)	Inner Diameter(mm)
1	QT018	18	15
2	QT022	22	19
3	QT025	25	22
4	QT028	28	25
5	QT033	33	30
6	QT035	35	32
7	QT040	40	37
8	QT041	45	42
9	QT050	50	45
10	QT055	55	50
11	QT055	60	55
12	QT065	65	60
13	QT070	70	65
14	QT075	75	70
15	QT080	80	75
16	QT085	85	80
17	QT090	90	85
18	QT095	95	90
19	QT100	100	95
20	QT105	105	100

SS Or Aluminium Flange with Viton O-Ring & Vacuum Gauge for Vacuum or gas purging application

ANTS Offer matching stainless steel or aluminium flanges. These flanges are made as per tube dimension to avoid any leakage of vacuum or gas during application.

All dimensions are in mm.

Tolerance upto 24mm OD : +/- 0.2 mm in OD and ID.

Tolerance beyond 24mm OD to 75 mm OD : +/- 0.5 mm in OD and ID

Tolerance beyond 75 mm OD: +/- 1.5 mm in OD and ID

Apart from above, other sizes are also available on request.

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ANTS offer high quality thermal analysis crucibles for Differential Scanning Calorimetry (DSC), Thermogravimetric analysis (TGA) and Differential Thermal analysis (DTA) application.

By precise grinding and machining, weight of each component is being maintained within tolerance limits.

ANTS also manufacture custom design thermal analysis crucible and porous alumina micro crucibles depending on customized requirement.

ANTS supply thermal analysis crucible/pans in Platinum and 99.7% Alumina. ANTS can also supply lid (with hole or without hole) for thermal analysis crucible. Lids can be without step or with step.

Alumina thermal analysis crucibles will be impervious.

Density > 3.87 g/cc

Maximum Temperature of Application 1750 Degree Centigrade

99.7% Alumina Thermal Analysis Pans

99.7% (1700°C) Alumina Thermal Analysis Pans



Sr.	Code	Capacity(ml)	OD (mm)	Height (mm)	Wall Thickness(mm)	Thermal Analyser
1	Ants TA-2945	15µl	2.9	4.5	0.5	
2	Ants TA-4040	30µl	4	4	0.4	
3	Ants TA-4050	30µl	4	5	0.5	
4	Ants TA-4570	50µl	4.5	7	0.6	PerkinElmer
5	Ants TA-5030	30µl	5	3	0.4	Setaram
6	Ants TA-5040	50µl	5	4	0.45	Setaram
7	Ants TA-5050	60µl	5	5	0.5	Rigaku
8	Ants TA-5080	100µl	5	8	0.45	Setaram
9	Ants TA 5225	25µl	5.2	2.5	0.35	SII Bruker AXS
10	Ants TA 5250	65µl	5.2	5	0.35	SII Bruker AXS
11	Ants TA 5924		5.9	24	1.3	
12	Ants TA 6026	30µl	6	2.6	0.45	Shimadzu Meter
13	Ants TA 6040	60µl	6	4	0.45	
14	Ants TA 6045	70µl	6	4.5	0.45	Mettler
15	Ants TA 6480	160µl	6.4	8	0.5	Netsch
16	Ants TA 6540	75µl	6.5	4	0.4	TA SDT Q600
17	Ants TA 6550	85µl	6.5	5	0.5	Mettler
18	Ants TA 6750	85µl	6.7	5	0.45	Netzsch
19	Ants TA 6840	80µl	6.8	4	0.5	Netzsch
20	Ants TA 7020	25µl	7	2	0.5	Netzsch
21	Ants TA 7050	95µl	7	5	0.6	Linseis
22	Ants TA 7518	25µl	7.5	1.8	0.4	Netzsch
23	Ants TA 8030	95µl	8	3	0.6	Setaram
24	Ants TA 8045	150µl	8	4.5	0.5	Mettler
25	Ants TA 8060	160µl	8	6	0.45	Setaram
26	Ants TA 8080	160µl	8	8	0.6	Netzsch
27	Ants TA80120	400µl	8	12	0.5	Setaram
28	Ants TA80400	1.5ml	8	40	0.9	
29	Ants TA 10250	1.5ml	10	25	0.8	
30	Ants TA 12050	450µl	12	5	0.9	
31	Ants TA 12080	700µl	12	8	0.9	
32	Ants TA 120100A	900µl	12	10	1	Mettler
33	Ants TA 120100B	1.0ml	12	10	0.8	
34	Ants TA 120200	1.5ml	12	20	0.8	
35	Ants TA 120250	1.5ml	12	25	1.3	
36	Ants TA 120600		12	60	1	
37	Ants TA 127250	3ml	12.7	25	0.7	
38	Ants TA 160600		16	60	2	
39	Ants TA 18080	1ml	18	8	0.9	Netzsch
40	Ants TA 180180	2.5ml	18	18	0.9	

Apart from above, other sizes are also available on request.
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Stainless Steel & Tungsten Carbide Pellet Making Dies

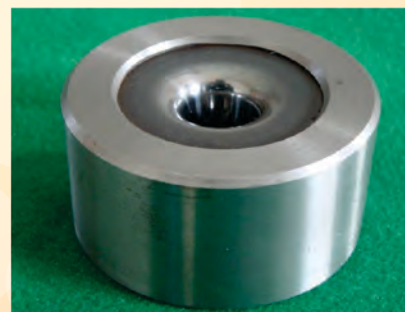
ANTS Ceramics Supply Hardened Stainless Steel Dies, Tungsten Carbide lined Hardened Dies and Evacuatable pellet making Dies (For vacuum application during powder compaction) for KBr pellet making and powder compaction.

Salient Features of Powder Compaction Dies:

1. Used for making high quality pellets for KBr Pellets for FTIR molecular spectroscopic analysis and XRF pellets for X-Ray Fluorescence atomic spectroscopic analysis.
2. Dies are supplied with extractor ring for sample disc removal.
3. ANTS will also supply pressed pellet out of the same die for your satisfaction of our quality checking and testing of same die manufactured at our end.
4. ANTS Can supply wide range of shape, size and load capabilities. For any custom shape dies, kindly let us know your design or desire pellet size. We can design your dies as per suitability of your parameters.

Specification of Tungsten Carbide Line Dies:

1. Density / Specific Weight : 14.34 to 14.50 gms/cc.
2. Hardness in HV5 : 1210 to 1350 Hv5.
3. Minimum TRS value: 3000 N/mm².
4. WC Percentage: 89%.
5. Co Percentage: 11%.
6. Plungers will be made in total Cobalt bonded Tungsten Carbide. Die body will be lined with Co-WC.



Tungsten Carbide Pellet Making Dies



Tungsten Carbide Pellet Making Dies

Steel Grade
Steel Hardness
Carbide Grade
Bottom and Top Punches will be brazed to steel

En24
40-45
Tool Grade TCW30

S.No.	Die Cavity (mm)
1	3
2	5
3	8
4	10
5	12
6	13
7	15
8	20
9	25
10	30

Apart from above, other sizes are also available on request.
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High Density Graphite Crucibles and Dies for Hot Pressing

Iso-Pressed Graphite Blocks, Crucibles
and Dies with Density ranging
from 1.8gm/cc to 1.9gm/cc



Graphite Custom Shape

Salient features:

1. Graphite can be machined to any critical shape as per your required design.
2. Specification of different grades of ISO statically pressed graphite depending on various applications:
 - A. Specific Gravity : (1.7 g/cc - 1.85 g/cc)
 - B. Specific Resistance: (9.5-17)
 - C. Young Modulus: (9.3 GPa – 13.7 GPa)
 - D. Flextural Strength : (32.3 MPa – 88.2 MPa)
 - E. Shore Hardness : (46 -78)
 - F. Co-efficient of Thermal Expansion ($\times 10^{-4}/^{\circ}\text{C}$): 94.3-5.5)
 - G. Thermal Conductivity (W/mK): (81-139)

We will request you to kindly let us know your specification and design to provide our best offer.

3. We source ISO pressed graphite from reputed world leaders of graphite like NIPPON, TOKAI, MERSEN etc.



Graphite Tray as
per required
dimensions



Graphite Crucible



Graphite Customised
component with
Threading and critical
features

Apart from above, other sizes are also available on request.
www.antslab.in

**Alumina 99.7%
Substrate**



**Alumina 96%
with
Laser Striations
at 19mmx19mm**



Silicon Substrate



Substrates

Alumina 99.7% Substrate

Sr.	Code	Length(mm)	Width(mm)	Thickness(mm)
1	AlSub01	8	8	0.5
2	AlSub02	8	8	1
3	AlSub03	10	10	0.5
4	AlSub04	10	10	1
5	AlSub05	20	20	0.5
6	AlSub06	20	20	1
7	AlSub07	25	25	0.5
8	AlSub08	25	25	1
9	AlSub09	50	50	1

Alumina 96% with Laser Striations at 19mmx19mm

Sr.	Code	Length(mm)	Width(mm)	Thickness(mm)
10	Al96Sub19	19	19	0.65
11	Al96Sub95	95	95	0.65

Silicon Substrate

Type1 : Solar Multicrystalline Water 156mm x 156mm

General Characteristics	Features
Growth Method	Directional
Conductivity Type	P Type
Dopant	Boron
Resistivity	0.5-2 Ω cm
Oxygen Content	8×10^{17} atom / cm ³
Carbon Content	5×10^{16} atom / cm ³

Structural Characteristics	Features
Side	156mm +/-0.5 mm
Corner Diagonal	1.5mm +/- 0.5mm
Corner Angle	900 +/- 0.30
Thickness	200 +/-20pm
Surface	Unpolished

Mechanical Characteristics	Features
TTV	< = 50 μ m
Bow	< = 60 μ m
Saw Mark	< = 15 μ m

Sr.	Code	Length	Width	Thickness
12	SiSub01	156	156	0.2
13	SiSub02	25	25	0.2

Type 2 : Single Crystal Silicon Waters

Available on Request

Apart from above, other sizes are also available on request.
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ANTS Ceramics offer sintered components with following Zirconia Compositions:

1. 3 mol% Ytria Stabilised Zirconia : 3YSZ(94.2 wt% Zirconia and 5.4 wt% Ytria) for high toughness requirement
2. 8 mol % Ytria Stabilized Zirconia : 8YSZ(Zirconia > 85 Wt% and Ytria 12.5-13.5 wt%) for electrical conductivity application by diffusion of oxygen vacancy.
3. Ceria Stabilised Zirconia (Zirconia > 83% wt% and Ceria < 17 wt%) for high abrasion resistance and toughness requirement.

Products Offered:

- A. Zirconia Grinding Media
- B. Zirconia micro milling Media (< 3 mm Dia)
- C. Zirconia labwares (Crucibles, Tray, Boat, Plate, discs etc)

Diameter
Material : 3YSZ
1 mm
3 mm
5 mm
8 mm
10 mm
12 mm
15 mm
20 mm



Diameter
Material: 92% Alumina
1 mm
3 mm
6 mm
8 mm
10 mm
13 mm
15 mm



Apart from above, other sizes are also available on request.
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ANTS Polymers - PTFE Crucibles

Properties

- A. Non Stick
- B. Heat Resistance up to 200oC
- C. Non Wetting (Oleophobic and Hydrophobic)
- D. Easy Cleaning and Excellent Chemical resistance
- E. Low Co-efficient of Friction (0.05 to 0.2)
- F. Cryogenic Stability
- G. High dielectric strength, a low dissipation factor, and very high surface resistivity.



PTFE Beaker Size (ml)
30ml
50ml
100ml
150ml
200ml
250ml
300ml
350ml
400ml
500ml
1000ml

PTFE Crucible Size
10ml
30ml
50ml
100ml

PTFE Jar Type	Size
	OD X LT
50 ML	50 X 46
100 ML	54 X 68
250 ML	70 X 95
500 ML	85 X 120
1000 ML	110 X 150
2000 ML	130 X 200
5000 ML	175 X 250

Physical Properties



Density :	2.2 g/cc
Glass Transition Temperature	388K
Melting Point	600K
Thermal Diffusivity mm/s	0.124 Sq
Young Modulus	0.5GPa
Yield Strength	23 Mpa
Dielectric Strength	60MV/m
Di electric Constant	PTFE
BeakerP	

Apart from above, other sizes are also available on request.
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Parameters:

- A. Maximum Operation Temperature: 220°C
- B. Maximum Working pressure: 3MPa (gauge)
- C. Heating, cooling rate: 5 °C / min
- D. Specification: Volume of 25,50,100,120,200 ml and other customized according to user needs.

ANTS Can provide any customised Hydrothermal Autoclave Reactor with Teflon Chamber of volume of 10-2000ml.

Hydrothermal synthesis reactor, also known as digestion, pressure melting bombs, hydrothermal synthesis reactor, high temperature and pressure digestion vessels. It is widely used in new materials, energy, environmental engineering and other fields of scientific research and experiments, is university teaching, scientific research units commonly used small reactors.

Autoclave (Hydrothermal Bomb) with Teflon Lining

Volume
10 ml
50 ml
60 ml
100 ml
120 ml
200 ml
250 ml
300 ml
500 ml



**Apart from above, other sizes are also available on request.
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Electrically Conductive Paint

A silver-loaded conductive paste, specifically formulated for use in Scanning electron microscopy (SEM) and other electron optical applications can also be used for producing or repairing PCB track, to paint-on an electrical screen, or to make electrical connections to non-solderable surfaces. This conductive adhesive is simple to apply with a brush and is touch-dry in approximately 10 minutes and usable in 30 minutes.

Key Features:

Volume resistivity $0.001 \Omega \text{ cm}$ when fully hardened

Baking at 120°C for 5 to 10 mins, after drying improves mechanical and electrical properties

Easy to use and quick drying

Note: Shake vigorously before using and replace cap when not in use

Spécifications:

Product type:	Paint (Viscosity: 4-5 Pa-s)
Conductive element:	Silver
Package size:	20,50,100,500 grams



Apart from above, other sizes are also available on request.
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Reduced Graphene Oxide (rGO)

Appearance	: Brownish grey powder
Thickness	: ~1 nm
Monolayer Diameter	: 0.5-10 μm
Monolayer Rate	: >90%
BET	: ~180 m^2/g
Carbon Content	: >82 wt
Conductivity	: >500 S/m

Application Fields

Graphene and polymers manufacture, water purification, flexible rechargeable battery electrode, optically transparent films, papers, sensors, nanocarriers for metal catalysis, anti-electrostatic additives, adsorption material and biomedicine *etc.*

Graphene Nanoplatelets (1-2nm)

Product Name	Thickness
Diameter	
Graphene Nanoplatelets (2-10nm thick) ~5 μm	2-10nm
Graphene Nanoplatelets (1-2nm thick)	1-2 nm

Characterisation:

Thickness	~2 nm
Flake Diameter	5-10 μm
Purity	98%
Oxygen Content	144%
Electrical Conductivity	~ 2597 s/cm

Characterisation:

Thickness	:1-5 nm
Flake Diameter	~5 μm
BET Surface Area	:90-130 m^2/g
Appearance	:Black powder

Characterisation:

Appearance	:Black/Grey Powder
Diameter	:2-7 μm
Thickness	:2-10 nm
Specific Surface Area	:20-40 m^2/g
Electrical Conductivity	:80000 S/m
Carbon Content	:>99%
Apparent Density	:0.06-0.09 g/ml
Water Content	:<2 wt. %
Residual Impurities	:<1 wt. %

Application:

- Use as a high performance additive for composites with PPO, POM, PPS, PC, ABS, PP, PE, PS, Nylon and rubbers.
- Can improve composites tensile strength, stiffness, corrosion resistance, abrasion resistance and anti-static electricity and lubricant properties.
- Conductive rubbers, conductive plastics,

****More Products are available on request**

Apart from above, other sizes are also available on request.
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ANTS Ceramics provides technical know how and expertise to research community by spreading knowledge of powder compaction and subsequent sintering.

Many a times due to lack of facility and knowhow, good synthesized powder also do not provide good result after sintering. Grain size will be large due to coarsening. Porosity remains in microstructure. Properties get modified and deteriorated for all uncontrolled parameters.

ANTS Ceramics can help you by providing service of spray drying of your synthesized powder, pressing of spray dried powder and sintering of your pressed pellets.

If you courier your powder, ANTS will send you sintered component after all processing or specified processing to your address.

Spray drying process is being carried out after making slurry /slip out of your powder. It gives you good compressible powder which results in better green density.

Pressing will be carried out in Hydraulic press in ANTS manufactured dies. We offer to press in 10 mm diameter green pellet size. Other size or shape is also possible. If you require your specified design, die can be manufactured in same shape and size and component can be pressed.

ANTS manufacture up to 1400 Degree C Furnace at our own set up. We can control sintering ramp rate and soak rate. If you provide your heating schedule as per your research study, we will follow the same. Otherwise ANTS will recommend you sintering schedule.

All detailed process will be shared to you once the final component reached to you.

ANTS is presently carrying out a lot of projects with Defense Labs, CSIR Labs and DAE organizations on ceramic Processing technique.

**Apart from above, other sizes are also available on request.
www.antslab.in**

Our Customers



ADITYA BIRLA GROUP



and the list is growing.....

www.antslab.in



Ants Ceramics Pvt. Ltd.

Unit No. 1, Jivdani Industrial Estate No. 1, Off Western Express Highway,
Dhumal Nagar, Vasai (East), Pin- 401 208. Maharashtra
Website : www.antslab.in, Email : sales@antsceramics.com