Morgan
Advanced Materials

MOLTEN METAL SYSTEMS

CRUCIBLES
PRODUCT CATALOGUE

www.morganmms.com

ABOUT US

Morgan Advanced Materials

Over 150 years of experience in advanced material technology, We are the global leader in the manufacturing of crucibles

Morgan Advanced Materials plc is an advanced materials technology company that provides highly engineered solutions in series of well defined markets. Morgan Advanced Materials has a global presence with operations in more than 50 countries and product deliverables in over 100 countries. Headquartered in the UK and listed on the London Stock Exchange, the company was founded in 1856.

The Molten Metal Systems business of Morgan Advanced Materials offers complete range of premium quality crucibles and accessories for the melting, holding, treatment and casting of ferrous and non-ferrous metals and metal alloys. With five international manufacturing locations each in China, Germany, Brazil and two in India and a worldwide network of sales and marketing experts supplemented by hundreds of distribution partners, our products can be found in every corner of the globe

Morgan's crucibles are available in various silicon carbide and clay graphite ranges. Isostatic pressing , Roller Forming , Rib Forming, Hydraulic pressing and other leading ceramic technical expertise supported by selective blend of raw materials, make Morgan products preferred choices worldwide.

Manufactured from a wide range of high quality raw materials using advanced technologies, crucibles are available in a comprehensive range of sizes and shapes, for optimum performance in individual applications.

Aluminium

Aluminium Scrap

Copper Alloy

Brass

Zinc Oxide

Precious Metal

Ferrous Foundry

CONTENTS

Morgan Advanced Materials

Advanced Thinking in Crucibles and Foundry Products

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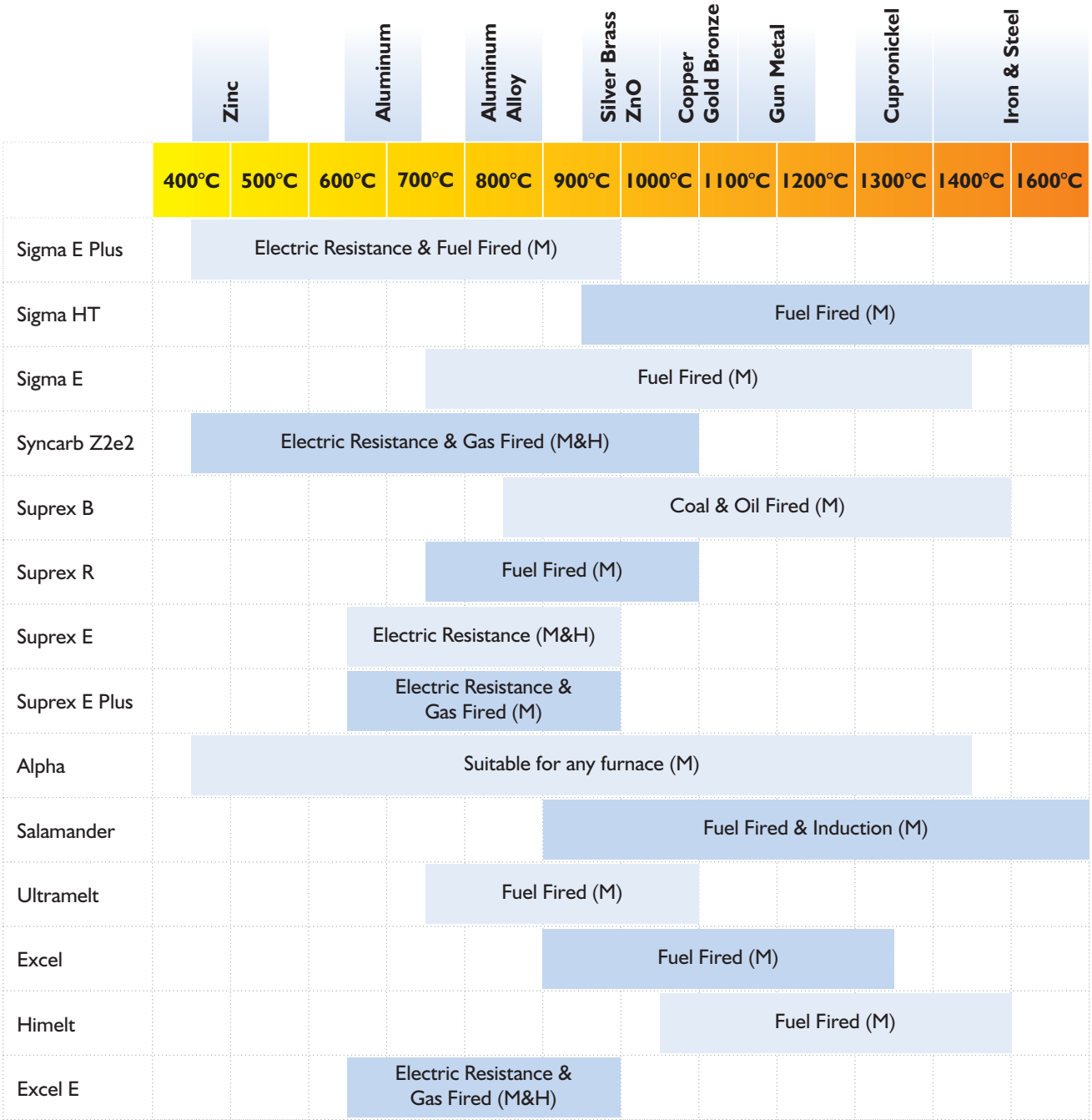
METAL & CASTING TEMPERATURE



Note
(M): Melting, (M&H): Melting & Holding

SIGMA

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Sigma crucibles are the premium quality, clay bonded, silicon carbide - graphite range of crucibles. These are manufactured with the world acclaimed **Iso-Static Pressing technology.**

Sigma crucibles are manufactured from selectively blended high quality export grade raw materials, under ISO 9001:2015 quality management system.

Syncarb Z2e2

Sigma HT

Induction Crucibles

Sigma E

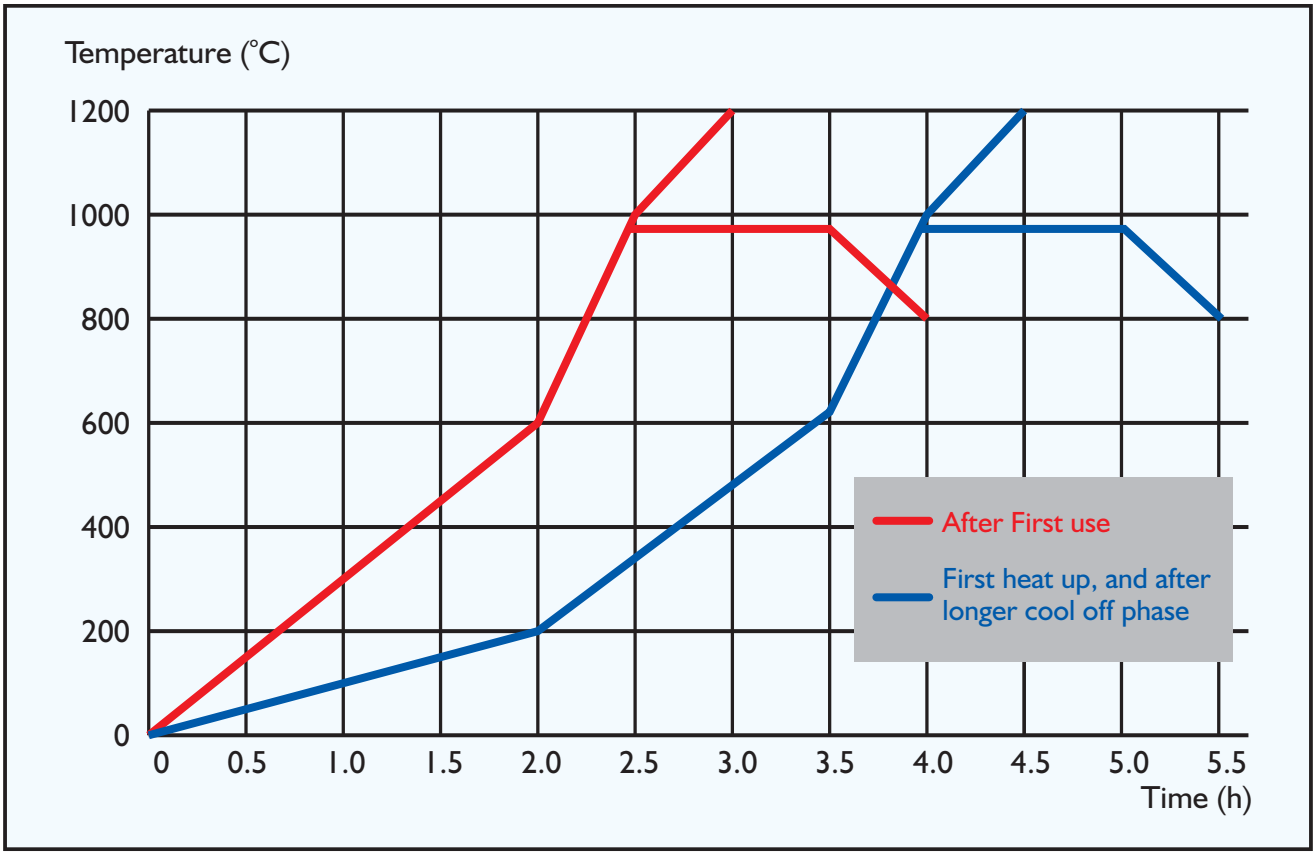
Sigma-E Plus

Sigma Brands	Application	Suitable Furnace	Operating Temperature	Performance Characteristics	Identification
Sigma-E Plus	Aluminum, Zinc & its alloys (Melting)	Electric Resistance & Fuel Fired	450°C to 950°C	• Very good oxidation resistance • Excellent thermal shock resistance • Very good erosion resistance	Grey with top rim in green (suffix 'E Plus')
Sigma HT	Aluminum, Zinc & its alloys Cast Iron (Melting)	Coke, Oil & Gas	900°C to 1600°C	• Good oxidation resistance • Good resistance to chemical attack • Excellent performance in high temperature applications	Dark grey (Suffix 'HT')
Sigma E	Aluminum Scrap (Melting)	Fuel Fired	700°C to 1400°C	• Very good thermal conductivity • High mechanical strength • Excellent resistance to chemical attack	Dark grey (Suffix 'HT')
Syncarb Z2e2	Aluminum (Melting & Holding)	Gas Fired & Electric Resistance	400°C to 1000°C	• Excellent thermal conductivity • Outstanding oxidation resistance & longer life • Excellent resistance to chemical attack	Dark grey (Suffix 'Z2e2')

CLAY GRAPHITE CRUCIBLES

Preheating Cycle

- The crucible, after being installated in the furnace should be heated up slowly to a temperature of 200°C (392°F) over a period of 2 hours, to eliminate any moisture that may be present.
- Next, these crucibles should be heated up to a temperature of 600°C (1112°F) on low power, before the full heating rate is used to reach 950°C (1742°F).
- Clay Graphite crucibles used in a melting operation can be continuously heated up on full power until working temperature is reached. The crucible is then ready to be charged with care.
- When using Clay/Graphite crucibles for holding, the temperature of 950°C (1742°F) should be reached and held for approximately 1 hour. This ensures even melting of the glaze with the additional antioxidation coating, which is essential to achieve the maximum possible crucible life.



Note

- For holding crucibles this procedure should be carried out periodically, but always before starting up again after a cool down period. This helps to compensate for the negative effects of low holding temperatures.
- Each time the crucible is heated up after a cooling down phase, it should be heated following the procedure laid down for the first installation. However, the drying time of 2 hours can be omitted. Should the Silicon Carbide or Clay Graphite crucible not be used for a long period, it will be necessary to eliminate moisture, which may have been absorbed from slag. In this case, the crucible should be heated up to a temperature of 200°C (392°F). After reaching this temperature, further heating should be continued as per the first installation.
- The above recommendations refer to the use of new crucibles in existing furnaces. When installing a new Silicon Carbide crucible into a new furnace, the heating and drying instructions of the furnace manufacturer should be followed. If the furnace manufacturer prescribes a longer heating cycle (or curve), this procedure should be carried out without the crucible. It is essential that the crucible is installed in an absolutely dry furnace.

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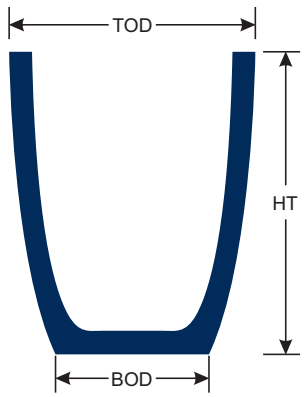
RED DIAMOND "SIGMA" AI SHAPE
(SMALL CRUCIBLES)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
AI 0.5	80	74	50	0.2
AI 1	95	92	65	0.3
AI 1.4	110	94	54	0.3
AI 2	120	110	75	0.6
AI 3	135	120	80	0.7
AI 3.1	130	110	70	0.5
AI 4	155	140	100	1
AI 4.1	140	115	75	0.7
AI 4.2	141	115	75	0.6
AI 5	165	140	100	1
AI 5.1	150	125	85	1
AI 5.2	155	127	87	1
AI 6	175	140	100	1
AI 6.1	165	106	90	1
AI 6.2	165	130	90	1
AI 8	180	155	105	2
AI 10	200	175	120	2
AI 10.1	205	162	115	2
AI 12	210	175	120	3
AI 14	225	175	120	3
AI 15	200	200	120	3
AI 16	230	200	120	4
AI 16L	235	215	130	4
AI 18	250	215	130	4
AI 18L	260	220	140	5
AI 20	265	230	140	5
AI 25	280	230	140	6
AI 30	280	255	165	8
AI 32	340	245	175	8
AI 32(S)	325	245	175	8
AI 34	360	245	175	8
AI 35	300	268	185	9
AI 40	315	268	185	9
AI 41	330	268	185	10
AI 42	355	270	185	11
AI 50	330	305	195	11
AI 50TW	340	288	195	12
AI 55	350	305	195	12
AI 60	375	307	195	12
AI 70	385	325	210	15
AI 80	410	325	210	16



Note
Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Brass = 8.35	Gold = 19.3	Zinc = 7.12
Copper = 8.9	Silver = 10.5	Iron = 7.85

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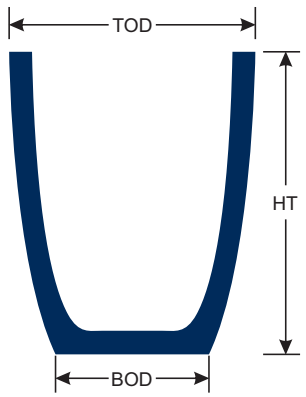
RED DIAMOND "SIGMA" AI SHAPE
(BIG ISO-STATIC CRUCIBLES)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
AI 85	430	325	210	17
AI 86	410	330	227	18
AI 90	404	350	240	21
AI 100	410	350	240	21
AI 110	420	350	240	22
AI 120	435	350	240	23
AI 120 L	450	350	245	21
AI 125	420	380	240	24
AI 120	435	350	240	23
AL 120 L	450	350	245	21
AI 125	420	380	240	24
AI 135	450	380	240	25
AI 150	475	380	240	27
AI 151	485	380	240	27
AI 180	500	380	240	29
AI 180 L	522	380	240	34
AI 185	500	430	260	34
AI 185 L	500	429	280	34
AI 195	500	410	295	36
AI 197	527	410	295	38
AI 200	540	430	260	38
AI 200 L	540	430	280	38
AI 225	565	430	260	40
AI 225 L	565	435	280	41
AI 250	590	430	260	42
AI 250 L	590	435	280	43
AI 255	545	440	295	48
AI 260	610	430	260	44
AI 260 L	610	436	280	45
AI 280	635	430	260	48
AI 280 L	635	436	280	47
AI 300	585	475	320	55
AI 305	540	440	315	45
AI 307	590	440	315	51
AI 324	500	480	280	45
AI 325	600	475	320	57
AI 326	600	490	280	59
AI 350	640	475	320	62
AI 351	640	490	280	64
AI 351.2	670	490	280	69
AI 352	710	490	280	74



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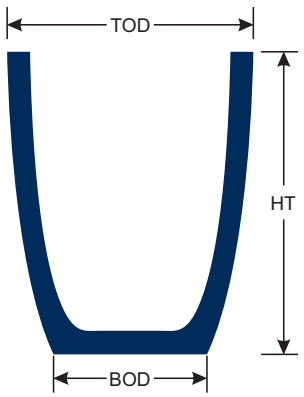
RED DIAMOND "SIGMA" AI SHAPE
(BIG ISO-STATIC CRUCIBLES)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
AI 355	600	560	360	76
AI 355L	600	560	390	77
AI 400	660	564	360	87
AI 400L	660	564	390	85
AI 401	660	540	315	78
AI 400.1	690	564	360	93
AI 402	620	515	360	73
AI 405	680	540	315	83
AI 405 L	700	540	315	87
AI 406	680	515	360	82
AI 450	705	564	360	95
AI 500	720	564	360	97
AI 500L	720	567	390	94
AI 501	720	545	315	89
AI 502	660	515	360	79
AI 510	740	545	315	94
AI 525	740	564	360	101
AI 525L	740	567	390	97
AI 550	760	564	360	105
AI 550L	760	567	390	99
AI 551	760	545	315	96
AI 552	720	520	360	88
AI 600	810	564	360	114
AI 600L	810	570	390	110
AI 601	810	548	315	105
AI 602	810	520	360	102
AI 605	840	564	360	120
AI 675	820	594	360	129
AI 650	760	590	360	117
AI 625	730	590	360	111
AI 615	720	590	360	109
AI 560	660	590	360	87
AI 2430 S	650	678	370	127
AI 2450 S	800	695	370	170
AI 2475 S	850	700	370	185
AI 2500 S	1000	718	370	232



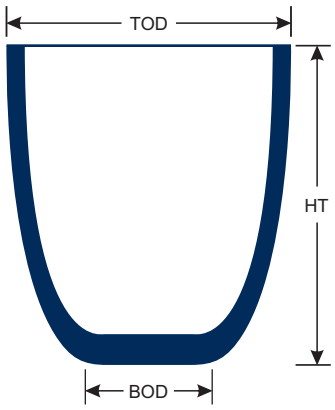
Note
Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Brass = 8.35	Gold = 19.3	Zinc = 7.12
Copper = 8.9	Silver = 10.5	Iron = 7.85

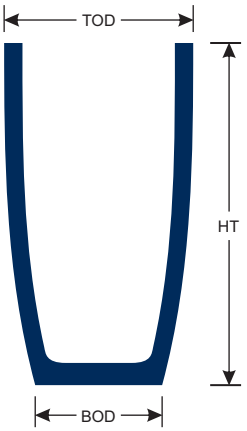
RED DIAMOND "SIGMA" BUI SHAPE

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BUI 100	402	523	305	44
BUI 125	451	524	305	52
BUI 150	492	525	305	59
BUI 175	551	526	305	70
BUI 200	600	527	305	77
BUI 212	550	590	360	92
BUI 225	630	590	360	110
BUI 225L	655	590	360	112
BUI 250	660	590	360	116
BUI 250L	685	590	360	118
BUI 300	700	590	360	124
BUI 300L	725	590	360	126
BUI 350	800	590	360	146
BUI 350L	825	590	360	148
BUI 500	750	775	360	210
BUI 550	800	775	360	228
BUI 600	900	775	360	267
BUI 675	850	840	350	282
BUI 700	875	850	350	293
BUI 800	975	850	350	339
BUI 900	1075	850	350	384
BUI 1000	1170	850	350	424



RED DIAMOND "SIGMA" TPI SHAPE
(WITHOUT SPOUT)

PATTERN	HT MM	TOD MM		BOD MM	BRIMFUL CAPACITY WATER LITRES
TPI 4	613	360	32	250	32
TPI 5	707	360	38	250	38
TPI 6	807	360	44	250	44
TPI 8	820	440	73	290	73
TPI 9	880	440	79	295	79
TPI 10	940	440	86	295	86
TPI 904	914	360	51	250	51
TPI 905	920	360	51	250	51



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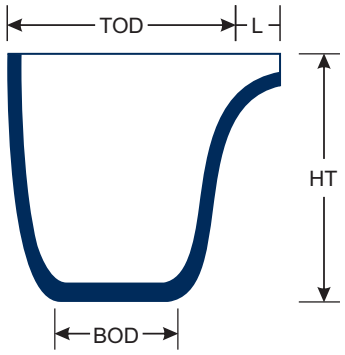
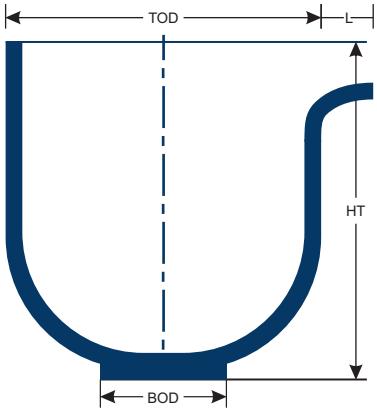
RED DIAMOND "SIGMA" TPI SHAPE
(WITH SPOUT)

PATTERN	HT MM	TOD MM	BOD MM	L MM	BRIMFUL CAPACITY WATER LITRES
TPI 150	485	380	240	150	28
TPI 400	613	360	250	130	32
TPI 326	672	427	260	200	44
TPI 600	807	360	250	130	44
TPI 260	485	380	260	154	44
TPI 740	555	440	295	152	49
TPI 325	672	430	260	154	50
TPI 982	820	440	295	152	73
TPI 287	600	527	305	160	77
TPI 983	880	440	295	215	79
TPI 12	940	440	295	152	86
TPI 87	740	520	360	180	91
TPI 525	740	564	360	180	96
TPI 88	810	550	315	180	105
TPI 387	630	590	360	159	110
TPI 387L	655	590	360	159	110
TPI 89	810	564	360	180	114
TPI 412	800	590	360	159	146
TPI 412L	825	590	360	159	146
TBUI 1000	1170	850	350	184	384
TBUI 1140	1140	850	350	184	388



RED DIAMOND "SIGMA" TPNI SHAPE
(WITH SPOUT)

PATTERN	HT MM	TOD MM	BOD MM	L MM	BRIMFUL CAPACITY WATER LITRES
TPNI 500	750	785	310	146	190
TPNI 1000LS	1000	785	310	656	232
TPNI 890	890	785	310	555	232
TPNI 600	890	785	310	146	239
TBNI 600	890	785	310	184	239
TPNI 615	905	785	310	179	253
TPNI 700	1000	785	310	146	296



Above sizes are also supply in :
- Fuel fired furnaces (Suffixed with 'E' e.g. 'BNI600 E')
- Electric resistance furnace (Suffixed with 'E Plus' e.g. 'BNI600 E Plus')

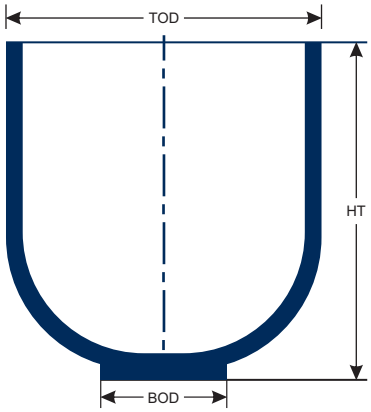
Note
Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Brass = 8.35	Gold = 19.3	Zinc = 7.12
Copper = 8.9	Silver = 10.5	Iron = 7.85

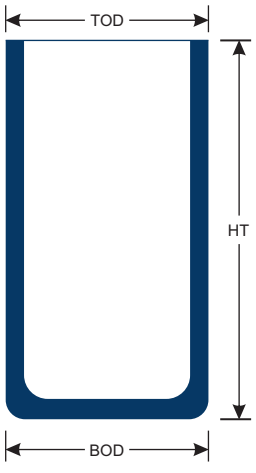
RED DIAMOND "SIGMA" BNI SHAPE

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BNI 202	500	617	260	70
BNI 302	630	617	260	97
BNI 500L	500	782	310	110
BNI 401	700	617	260	113
BNI 402	800	617	260	135
BNI 350	900	617	260	140
BNI 355	950	617	260	172
BNI 500	750	785	310	217
BNI 550	825	785	310	245
BNI 600	890	785	310	270
BNI 615	905	785	310	276
BNI 700	1000	785	310	312
BNI 750	1060	785	310	333



RED DIAMOND "SIGMA" CYLINDRICAL CRUCIBLE FOR INDUCTION FURNACE APPLICATION

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
CYI 110X265	265	110	110	2
CYI 222X420 A	420	222	222	7
CYI 222X400	400	222	222	8
CYI 390X632	632	390	390	49
CYI 400X600	600	400	400	51
CYI 400X640	640	400	400	56
CYI 400X700	700	400	400	61
CYI 504X710	710	504	504	103
CYI 504X750	750	504	504	109
CYI 550X850	850	550	550	122
CYI 504X850	850	504	504	124
CYI 550X820	820	550	550	143



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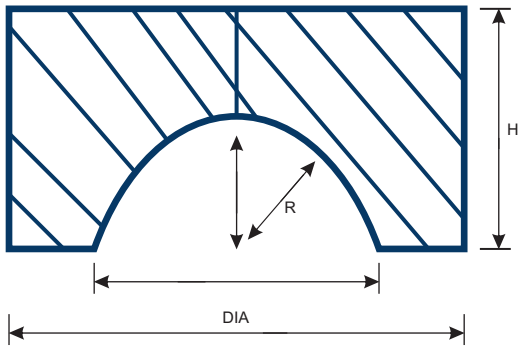
RED DIAMOND "SIGMA" STAND

(CYLINDER TYPE)

PATTERN	HT MM	TOD MM	BOD MM
STAND AI/1	125	250	250
STAND AI/2	150	250	250
STAND AI/3	200	250	250
STAND AI/4	250	250	250
STAND AI/5	50	250	250
STAND AI/6	75	250	250
STAND BI/1	125	300	300
STAND BI/2	150	300	300
STAND BI/3	200	300	300
STAND BI/4	250	300	300
STAND BI/5	50	300	300
STAND BI/6	75	300	300
STAND CI/1	125	360	360
STAND CI/2	150	360	360
STAND CI/3	200	360	360
STAND CI/4	250	360	360
STAND CI/5	50	360	360
STAND CI/6	75	360	360



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SYNCARB Z2e2

Introduction & Application

Syncarb Z2e2 is a premium quality hybrid ceramic bonded clay graphite crucible with a high silicon carbide and graphite content that is manufactured through an advanced Iso-Static Pressing technology.

Morgan uses a proprietary processing technology that results in a product with a very homogenous and high density structure. This allows the crucible to obtain superior thermal conductivity over its entire operating temperature range, high mechanical strength and erosion resistance along with good thermal shock resistance. These properties translate into a durable and robust crucible with excellent performance characteristics in lower temperature environments. In addition, Syncarb Z2e2 is also coated internally and externally by proprietary glazes to prevent low temperature oxidation and degradation that occur in aluminium and other low temperature alloys over extended period of life. These crucibles have specifically been designed by intensive research, keeping in mind energy cost saving for the customers. The special mix of materials used to manufacture these crucibles can sustain without getting oxidized for a long period of time leading to better & highly consistent performance of the crucible.

Syncarb Z2e2 is designed to perform exceptionally well to melt and hold aluminium and other low temperature alloys in gas fired and electric resistance furnaces.

Typical Metal Casting Temperature

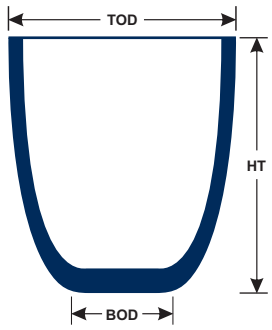
- 400°C - 1000°C

Performance Characteristics

- High thermal conductivity & very high energy efficiency
- Superior oxidation resistance
- High mechanical strength & good erosion resistance
- High consistency in performance & repeatability
- Longer life

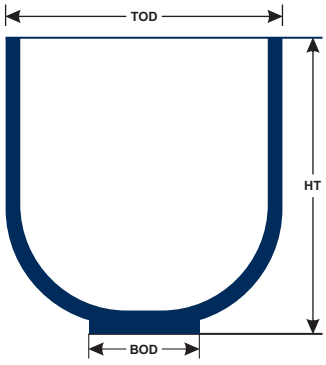
"SYNCARB Z2e2" BUI SHAPE

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BUI 100	402	523	402	44
BUI 125	451	524	451	52
BUI 150	492	525	492	59
BUI 175	551	526	551	69
BUI 200	600	527	600	77
BUI 500	750	775	360	209
BUI 550	800	775	360	228
BUI 600	900	775	360	266



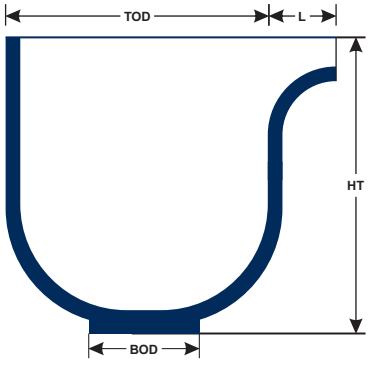
"SYNCARB Z2e2" BNI SHAPE

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BNI 202	500	617	260	70
BNI 302	630	617	260	97
BNI 401	700	617	260	113
BNI 402	800	617	260	135
BNI 350	900	617	260	152
BNI 355	950	617	260	172
BNI 500	750	785	310	217
BNI 550	825	785	310	245
BNI 600	890	785	310	270
BNI 615	905	785	310	276
BNI 700	1000	785	310	312



"SYNCARB Z2e2" TPNI SHAPE

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
TPNI 500	750	785	310	190
TPNI 615	905	785	310	253
TPNI 700	1000	785	310	296



ULTRAMELT

Morgan Advanced Materials

Introduction & Application

ULTRAMELT is a premium quality carbon bonded silicon carbide crucible manufactured by high pressure isostatic pressing. ULTRAMELT incorporates Molten Metal System's advanced bonding technology and is a superior grade product designed to provide optimum performance under the most arduous service conditions.

ULTRAMELT offers superior performance for aggressive erosive conditions with heavy flux usage in both copper based alloys and precious metal reclamation. The product is designed for use in gas, oil, and low to medium frequency induction furnaces.

Typical Metal Casting Temperature

- 1000°C - 1400°C

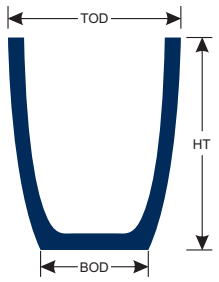
Performance Characteristics

- Superior erosion resistance
- Maximum resistance to corrosive chemicals and slags
- Excellent thermal shock resistance
- High mechanical strength
- High consistent density
- Faster melting speed

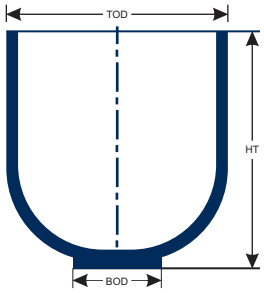
ULTRAMELT

Morgan Advanced Materials

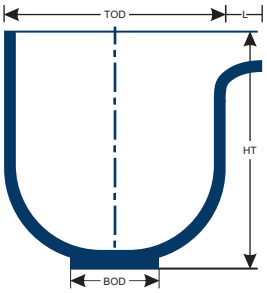
PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
AIU 351TW	610	480	315	56



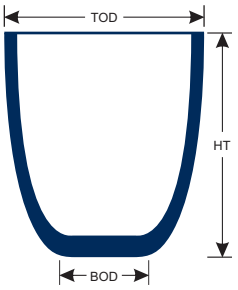
PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BNIU 360	900	615	260	162
BNIU 350L	825	615	260	145
BNIU 350	800	615	260	140
BNIU 300	700	615	260	118
BNIU 250	630	615	260	103
BNIU 210	500	615	260	75



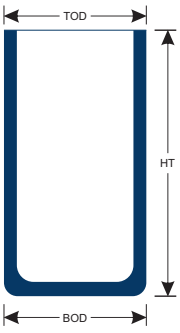
PATTERN	HT MM	TOD MM	BOD MM	L MM	BRIMFUL CAPACITY WATER LITRES
TPNIU 360	900	615	260	146	151
TPIU 720	880	719	380	324	189



PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BUIU 720	1000	720	380	240.6



PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
CYIU 510X435	435	510	510	54
CYIU 650X975	975	650	585	197



SUPREX

Morgan Advanced Materials

Suprex crucibles are carbon-bonded silicon carbide crucibles, which are manufactured using precise roller forming process. Suprex crucibles are characterized by excellent thermal conductivity and high chemical erosion resistance.

Suprex crucibles are manufactured from selectively blended high quality export grade raw materials, under ISO 9001:2008 quality management system.

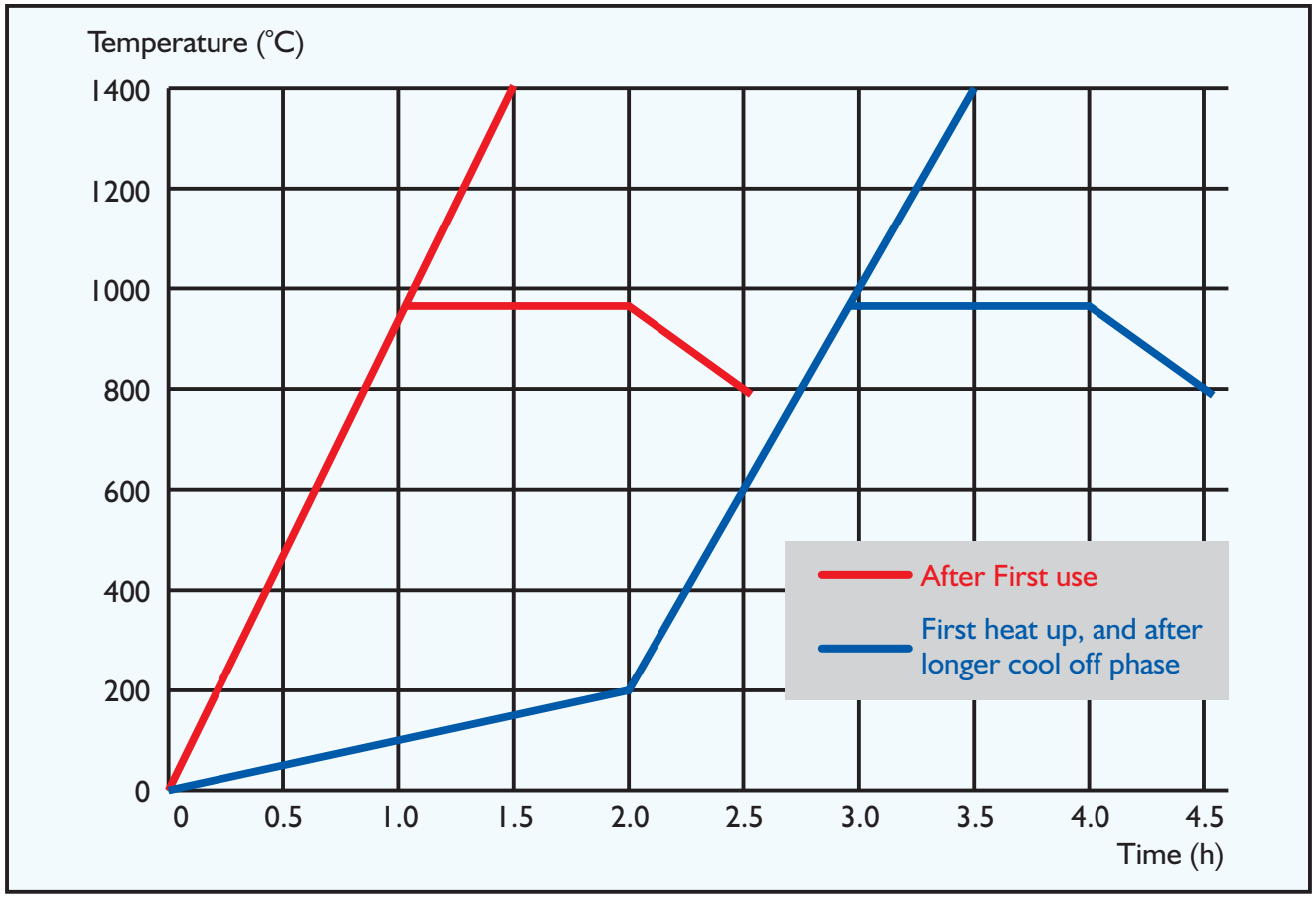
Suprex-B | **Suprex-R** | **Suprex-E** | **Suprex-E Plus**

Suprex Brands	Application	Suitable Furnace	Operating Temperature	Performance Characteristics	Identification
Suprex-B	Copper/Brass & its alloys (Melting)	Coal & Oil Fired	450°C to 950°C	• Superior oxidation resistance • High thermal conductivity • Very good erosion resistance	Brown colored coating
Suprex-R	Aluminum & its alloy Zinc Oxide	Oil, Gas & Coal	900°C to 1600°C	• Good erosion resistance • High thermal conductivity • Superior oxidation resistance	Red colored coating
Suprex-E	Aluminum, Zinc & its alloys (Melting & Holding)	Electric Resistance	700°C to 1400°C	• High thermal conductivity • Good erosion resistance • Good thermal shock resistance	TAN colored coating with top rim colored in black
Suprex-E Plus	Aluminum, Zinc & its alloys (Melting)	Electric Resistance & Gas Fired	400°C to 1000°C	• High oxidation resistance • High Energy efficient • Excellent thermal shock resistance	Grey colored coating with top rim colored in green

SILICON CARBIDE CRUCIBLES

Preheating Cycle

- The crucible after installation in the furnace should be heated up slowly to a temperature of 200°C (392°F) over a period of 2 hours, to eliminate any moisture that may be present.
- Next, these crucibles should be heated up to a temperature of 950°C (1742°F) on full power, if possible.
- Silicon Carbide crucibles used in a melting operation can be continuously heated up on full power until working temperature is reached. The crucible is then ready to be charged with care.
- When using Silicon Carbide crucibles for holding, the temperature of 950°C (1742°F) should be reached and held for approximately one hour. This ensures even melting of the glaze with the additional antioxidation coating, which is essential to achieve the maximum possible crucible life.

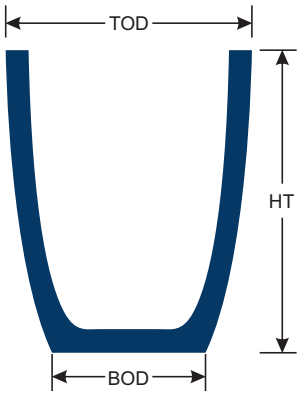


Note

- For holding crucibles this procedure should be carried out periodically, but always before starting up again after a prolonged cool down period. This helps to compensate for the negative effects of low holding temperatures.
- Each time the crucible is heated up after a cooling down phase, it should be heated following the procedure laid down for the first installation. However, the drying time of 2 hours can be omitted. Should the Silicon Carbide or Clay Graphite crucible not be used for a long period, it will be necessary to eliminate moisture, which may have been absorbed from slag. In this case, the crucible should be heated up to a temperature of 200°C (392°F). After reaching this temperature, further heating should be continued as per the first installation.
- The above recommendations refer to the use of new crucibles in existing furnaces. When installing a new Silicon Carbide crucible into a new furnace, the heating and drying instructions of the furnace manufacturer should be followed. If the furnace manufacturer prescribes a longer heating cycle (or curve), this procedure should be carried out without the crucible. It is essential that the crucible is installed in an absolutely dry furnace.

"A" SHAPE SILICON CARBIDE CRUCIBLES FOR LIFT OUT & BALE OUT FURNACES

PATTERN	HT MM	OUT SIDE DIAMETER		BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
		TOD MM	BOD MM		
AC 25	280	210	155	5	38
AC 27	265	232	160	5	41
AC 29	290	232	160	6	47
AC 31	324	248	180	9	64
AC 36	338	276	190	10	71
AC 41	362	276	190	11	83
AC 61	405	305	210	16	116
AC 81	410	328	230	17	131
AC 101	440	335	240	20	150
AC 121	452	374	250	22	167
AC 160	452	385	230	27	205
AC 175	472	385	230	29	214
AC 180	498	385	230	30	228
AC 200	495	400	285	33	249
AC 190	548	385	230	34	255
AC 205	505	430	250	38	284
AC 230	541	430	250	40	301
AC 250	555	430	260	43	323
AC 300	555	440	310	44	330
AC 300	555	440	310	45	334
AC 255	585	450	250	48	361
AC 265	615	437	250	48	361
AC 280	635	437	250	50	376
AC 330	585	474	260	54	406
AC 350	630	474	260	60	447
AC 355HB	635	474	315	61	457
AC 355	635	474	315	62	466
AC 375HB	685	474	315	66	497
AC 375	685	474	315	72	539
AC 400HB	650	530	320	75	565
AC 400	650	530	315	79	591
AC 410	685	527	315	82	616
AC 410HB	685	527	315	82	618
AC 405HB	705	530	320	84	631
AC 405	705	530	315	86	647
AC 500	685	565	355	93	699
AC 510	720	567	355	97	729
AC 555	765	570	355	103	774
AC 610	800	572	355	115	864
AC 650	830	585	355	125	1089
AC 700	880	585	355	131	980
AC 1000	822	616	420	142	1060



Note

Crucible Working capacity = 90% of
(Water liter Capacity x Specific gravity of the metal)

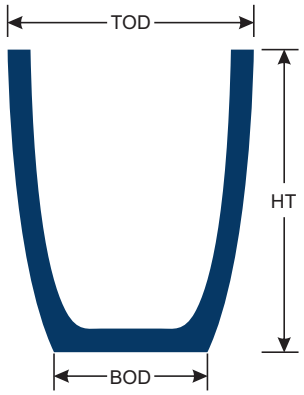
- **Specific gravity of various metals are as below:**

Aluminium = 2.72	Copper = 8.9
Brass = 8.35	Gold = 19.3
Silver = 10.5	Zinc = 7.12

- Pyrometer pocket and hole in wall configurations are available to facilitate measurement of metal temperature
- Our crucibles are recommended for non-ferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Standard Spout length is 146 mm. Spout with length up to 280 mm is available
- Any basic model of AC and BC series can be converted to spouted model

All dimensions are subject to normal manufacturing tolerances.
Morgan reserves the right to change specifications at any time

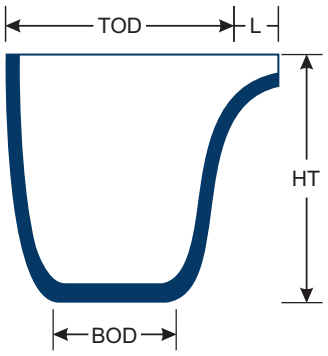
TPC SHAPE SILICON CARBIDE CRUCIBLES



"TP" Shape For Over Top Crucibles For Tilting Furnaces

PATTERN	HT MM	OUT SIDE DIAMETER		BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.	RECESS
		TOD MM	BOD MM			
TPC 5	675	437	250	51	385	Y
TPC 8	800	450	295	68	513	Y
TPC 10	940	450	295	83	621	Y

Spouted "TP" Shape for Tilting Furnaces



PATTERN	HT MM	OUT SIDE DIAMETER		L MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.	RECESS
		TOD MM	BOD MM				
TPC 175	472	385	385	146	25	188	-
TPC 400	600	385	385	146	30	225	Y
TPC 740	555	440	440	146	40	301	-
TPC 843	675	437	437	146	48	357	Y
TPC 355	635	474	474	146	53	398	Y
TPC 12	940	450	450	146	54	406	Y
TPC 982	800	450	450	146	64	478	Y
TPC 983	800	450	450	200	64	478	Y
TPC 984	855	450	450	146	72	543	Y
TPC 89	800	572	572	146	103	773	Y
TPC 650	830	585	585	146	113	849	-

Spouted Basins For Tilting Furnaces

PATTERN	HT MM	OUT SIDE DIAMETER		L MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE ALUMINUM CAPACITY KGS.	RECESS
		TOD MM	BOD MM				
TCS 70R	450	260	187	225	12	29	-
TPC 287	600	527	315	146	68	167	-
TPC 387	630	616	355	146	99	241	-
TPC 412	800	616	355	146	135	330	-
TPC 412A	800	616	355	146	135	330	Y
TPC 587	890	775	460	184	236	578	-
TPC 588	890	775	460	146	239	586	-
TPC 849	925	775	338	146	255	624	-
TPC 947	1000	775	338	184	270	661	-
TPC 264	1000	775	460	184	275	673	-
TPC 852	1140	850	450	184	419	1026	-
TPC 2600	1244	850	350	185	428	1048	-
TPC 853	1240	850	450	184	465	1139	-
TPC 1200	1150	960	460	184	496	1215	-

Note
Crucible Working capacity = 90% of
(Water liter Capacity x Specific gravity of the metal)

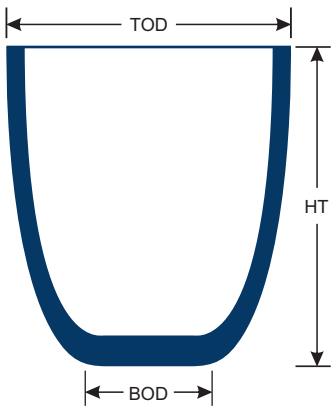
- **Specific gravity of various metals are as below:**

Aluminium = 2.72	Copper = 8.9
Brass = 8.35	Gold = 19.3
Silver = 10.5	Zinc = 7.12

- Pyrometer pocket and hole in wall configurations are available to facilitate measurement of metal temperature
- Our crucibles are recommended for non-ferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Standard Spout length is 146 mm. Spout with length up to 280 mm is available
- Any basic model of AC and BC series can be converted to spouted model

BC Shape Silicon Carbide Crucibles for Bale Out Furnaces

PATTERN	HT MM	OUT SIDE DIAMETER		BRIMFUL CAPACITY WATER LITRES	APPROXIMATE ALUMINUM CAPACITY KGS.
		TOD MM	BOD MM		
BC 174	394	397	215	26	64
BC 164	300	517	315	28	69
BC 166	400	527	315	43	106
BC 167TW	450	527	315	50	122
BC 167	450	527	315	52	126
BC 1678TW	475	527	315	52	127
BC 168TW	492	527	315	55	135
BC 168	492	527	315	58	141
BC 995	450	814	350	73	178
BC 171	600	527	315	75	183
BC 202	500	616	355	79	194
BC 996	450	832	350	106	259
BC 302HB	630	616	355	106	260
BC 302	630	616	355	107	262
BC 401HB	700	616	355	122	298
BC 401	700	616	355	123	301
BC 402HB	800	616	355	144	352
BC 700	630	726	305	144	352
BC 402	800	616	355	145	355
BC 712	600	720	380	147	361
BC 502	900	616	355	168	411
BC 713	670	720	380	169	413
BC 714	695	720	380	176	431
BC 715	730	720	380	187	458
BC 716	765	720	380	198	483
BC 847	750	775	338	200	490
BC 247	750	775	460	204	499
BC 724	800	720	330	208	509
BC 717	810	720	380	211	517
BC 848	780	775	338	211	518
BC 718	885	720	380	234	573
BC 719	950	720	380	254	621
BC 263	890	775	460	255	623
BC 849	925	775	338	260	636
BC 720	975	720	380	261	640
BC 850	750	850	450	268	656
BC 947	1000	775	338	286	700
BC 264	1000	775	460	294	720
BC 1030	750	960	460	299	732
BC 857	1000	850	450	380	929
BC 265	1245	775	460	386	945
BC 852	1140	850	450	439	1074
BC 1035	1000	960	460	440	1077
BC 2600	1244	850	350	451	1104
BC 1045	1050	960	460	469	1147
BC 853	1240	850	450	484	1184
BC 1200	1150	960	460	520	1273



Note

Crucible Working capacity = 90% of
(Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

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Brass = 8.35	Gold = 19.3
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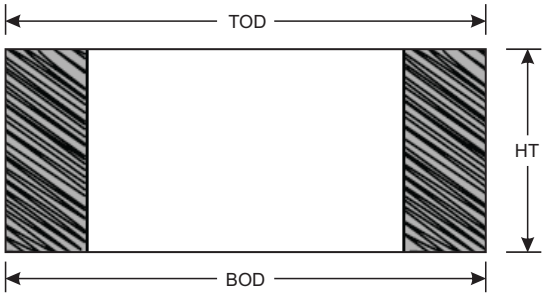
MUFFLE RINGS

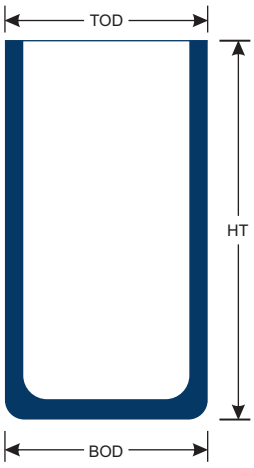
Muffle rings increase thermal efficiency by providing additional space for the heating charge

PATTERN	HT MM	TOD MM	BOD MM	SUITABLE FOR MODELS
XMC 71	280	385	370	TPC-400,
XMC 122/1	255	450	450	TPC10,TPC12,TPC8,TPC843
XMC 143/1	205	616	616	TPC-387,TPC412
XMC 159/1	305	527	516	TPC287
XMC 159/3	305	570	550	TPC89
XMC 1600	240	850	850	TPC852,TPC1600,TPC1800



Straight Shape Silicon Carbide Crucibles for Induction Furnaces

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
EC 323	318	165	165	4	32
EC 1606	315	222	222	6	47
EC 1601	470	222	222	10	75
EC 447	400	254	254	13	98
EC 444	475	254	254	15	113
EC 552	450	295	295	20	147
EC 329	530	330	330	25	188
EC 390	508	362	362	29	218
EC 330	635	330	330	30	225
EC 187	535	390	390	35	265
EC 187TW	535	390	390	38	282
EC 181	632	390	390	43	325
EC 701TW	560	445	445	56	424
EC 71	700	450	450	64	481
EC 722	560	500	500	64	481
EC 70	670	450	450	74	556
EC 75	650	530	530	79	590
EC 72	775	500	500	92	691
EC 565	720	570	570	119	892
EC 575	865	570	570	144	1082
EC 571	900	570	570	152	1142
EC 570	1000	570	570	168	1263
EC 650	1000	645	645	188	1413
EC 652	1190	650	650	235	1766
EC 800	1100	800	800	375	2820
EC 905	1100	905	905	517	3885



Note

Crucible Working capacity = 90% of
(Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Aluminium = 2.72	Copper = 8.9
Brass = 8.35	Gold = 19.3
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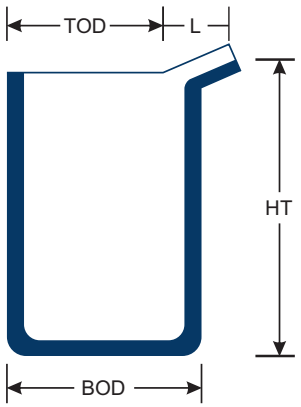
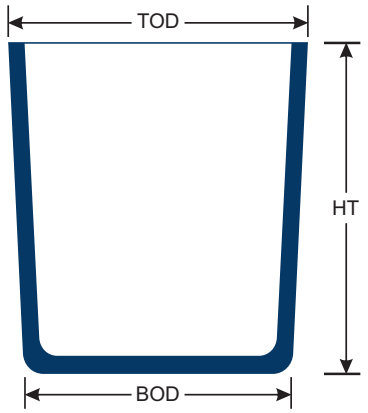
Straight shape Silicon Carbide Crucibles with Spout

PATTERN	HT MM	TOD MM	BOD MM	L MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
TC 1601R	470	222	222	140	8	56
TC 1603R	470	222	222	276	8	56
TC 447R	400	254	254	164	10	74
TC 330R	635	330	330	200	24	180
TC 182R	632	390	390	190	34	256
TC 1821R	632	390	390	320	34	256
TC 70R	670	450	450	265	58	436
TC 75R	800	450	450	200	73	549
TC 577R	800	570	570	250	110	827
TC 800R	1100	800	800	250	372	2796



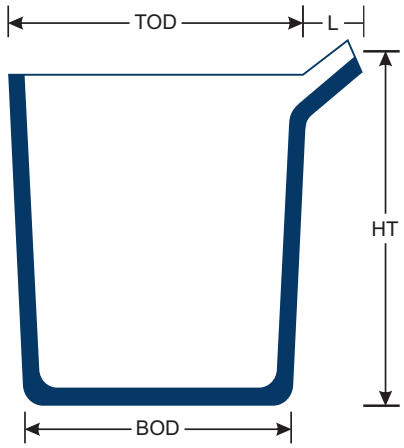
L Shape Silicon Carbide Crucibles

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
LC 441	329	329	221	15	111
LC 456	442	442	311	34	259
LC 483	541	541	386	54	404
LC 482	385	385	214	81	609
LC 481	578	578	474	89	668
LC 751	692	692	556	135	1016



L Shape Silicon Carbide Crucibles with Spout

PATTERN	HT MM	TOD MM	BOD MM	L MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
LCP 761	467	602	556	173	75	562
LCP 757	626	626	556	175	97	730
LCP 760	582	615	556	175	97	730
LCPG 757	669	626	556	148	102	768
LC 760R	582	615	556	133	110	827
LCP 757R	692	626	556	133	134	1005



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Accessories for use with Silicon Carbide Crucibles Stands

PATTERN	HT MM	TOD MM	BOD MM	SUITABLE FOR PATTERNS			SPIGOT
				AC	BC	TPC	
XRC 122/1	125	285	230	160, 175, 180,		175, 400	N
XRC 122/1(S)	125	285	230	200, 205, 225,			Y
XRC 122/2	230	175	285	230, 250, 255,		843, 5	N
XRC 122/3	230	100	285	330, 350, 365			N
XRC 132/1	125	310	250	300, 355, 375 400, 405, 410	166, 167, 168, 171	287, 355	N
XRC 132/1(S)	125	310	250			740, 355, 843 10, 12, 982, 8	Y
XRC 132/2(S)	250	310	250				Y
XRC 132/3(S)	300	310	250			740,355,843 10,12,982,983	Y
XRC 132/4	250	310	250				N
XRC 132/4(S)	175	310	250			740, 843, 10, 12, 982, 8	Y
XRC 132/5(S)	75	310	275			740, 843 10, 12, 982, 8	Y
XRC 202/1	125	360	250	500, 510, 610, 555	202, 302, 401, 402	387, 412	N
XRC 202/1(S)	125	360	250			412, 89	Y
XRC 202/2	175	360	250	500, 510, 610, 555	202, 302, 401, 402	387, 412, 89	N
XRC 202/2(S)	175	360	250			387, 412, 89	Y
XRC 202/3	225	360	250	500, 510, 610, 555	202, 302, 401, 402	387, 412,	N
XRC 202/3(S)	225	360	250			387, 412, 89	Y
XRC 202/4	150	360	250	500, 510, 610, 555	202, 302, 401, 402	387, 412	N
XRC 202/8	250	360	250				N
XRC 247	115	425	425		247, 263, 700		N
XRC 247/50	50	425	425		247, 263, 700		N
XRC 587	215	425	300			588, 651	N
XRC 360/50	50	360	360				N
XRC 360/75	75	360	360				N
XRC 310/50	50	310	310				N
XRC 804	120	350	350		847		N
XRC 2471	100	425	425		247, 263, 264		N
XRC 2474	150	425	425		247, 263, 264		N
XRC 2472	200	425	425		247, 263, 264		N
XRC 1105	125	250	250				
XRC 0905	150	250	250				

AC Shape

TPC Shape

BC Shape

TPC-587

BX-247

Note

- Stands of different heights can also be made available on order
- Stands with spigot also available for TPC model shaving recesses

SALAMANDER

Morgan Advanced Materials

Introduction & Application

Salamander Super is a high quality ceramic bonded clay graphite crucible range manufactured by plastic forming techniques. Salamander Super crucibles are used to provide consistent performance in fuelfired furnaces and medium / high frequency induction furnaces. The smaller sizes are typically used to melt precious metals, while larger sizes can be used for some ferrous alloys such as grey iron as well as to melt non-ferrous alloys. These crucibles are ideally suitable for applications requiring high liquid metal non-wettability with the crucible wall.

Typical Metal Casting Temperature

- 850°C - 1600°C

Performance Characteristics

- Clean melting
- Good thermal conductivity
- Good resistance to chemical corrosion
- High refractoriness

Identification

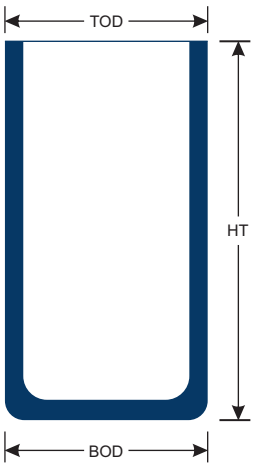
These crucibles are colored black and are available in a larger sizes used in induction furnaces of medium and high frequency.

Pattern Range

Salamander Super crucibles are available in a range of sizes as A-shapes, F-shapes (bilge), and E-shape cylinders to suit a wide spectrum of end user requirements. Ladle liners are also available in standard or bottom pour configuration.

Straight Shape Clay Graphite Crucibles - For Induction Furnaces

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
E 303	200	110	110	1	6
E 323	318	165	165	4	25
E 375	270	205	195	4	26
E 305	500	310	310	21	120



Note

- Our crucibles are recommended for nonferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Aluminium = 2.72	Gold = 19.3	Zinc = 7.12
Brass = 8.35	Silver = 10.5	Iron = 7.85
Copper = 8.9		

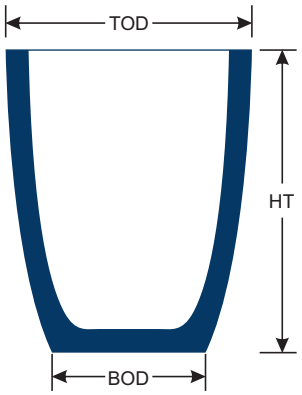
All dimensions are subject to normal manufacturing tolerances. Morgan reserves the right to change specifications at any time

SALAMANDER

Morgan Advanced Materials

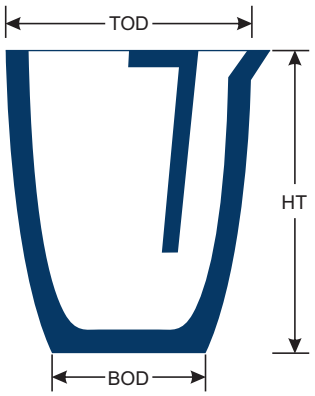
A Shape Clay Graphite Crucibles

PATTERN	HT MM	OUT SIDE DIAMETER		BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
		TOD MM	BOD MM		
A 5/0	35	32	24	0.01	0.1
A 3/0	52	46	30	0.03	0.2
A 1/0	67	60	41	0.1	0.6
A 0.5	78	68	48	0.1	1.0
A 1	97	79	55	0.2	2
A 1.5	92	90	55	0.2	2
A 2	109	95	61	0.3	3
A 3	127	105	70	0.5	4
A 4	141	114	76	1	6
A 5	152	124	86	1	7
A 6	165	130	95	1	9
A 7	175	140	105	1	11
A 8	184	156	108	2	13
A 10	200	160	110	2	16
A 12	210	171	121	2	20
A 16	232	184	130	3	23
A 20	260	197	145	4	30
A 25	280	210	155	5	36
A 30	290	232	160	6	43
A 40	318	232	160	7	50
A 50	324	248	180	8	60
A 60	362	276	190	10	77
A 70	315	292	200	12	93
A 80	397	300	210	14	105
A 100	400	324	230	16	120
A 120	435	333	240	18	138
A 150	452	362	250	22	168
A 200	491	400	285	32	239



Crucibles with Baffle Plate

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES	APPROXIMATE BRASS CAPACITY KGS.
AP 30	290	232	160	6	43
AP 40	318	232	160	7	50
AP 50	324	248	178	8	60
AP 60	362	276	190	10	77
AP 70	375	292	200	12	93



Note

- Our crucibles are recommended for nonferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Aluminium = 2.72	Gold = 19.3	Zinc = 7.12
Brass = 8.35	Silver = 10.5	Iron = 7.85
Copper = 8.9		

ALPHA

Morgan Advanced Materials

Introduction & Application

Alphas are black, rib formed Clay/Graphite crucibles. They are suitable for all furnace systems of non-ferrous metal alloys and precious metals. These have been developed with a specific modified electrical resistivity which optimises the coupling power of the crucible and avoids the risk of overheating.

Typical Metal Casting Temperature

- 400°C - 1400°C

Performance Characteristics

- High refractoriness ensures perfect applications for holding furnaces where maintaining metal temperature without leading to heat loss is a must
- Good resistance to chemical corrosion ensures application in the most aggressive of environments
- Good thermal shock resistance
- High mechanical strength guarantees robust usage
- Good oxidation resistance

Identification

These crucibles can be identified by their black color.

Note

- Our crucibles are recommended for nonferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

Aluminium = 2.72	Gold = 19.3	Zinc = 7.12
Brass = 8.35	Silver = 10.5	Iron = 7.85
Copper = 8.9		

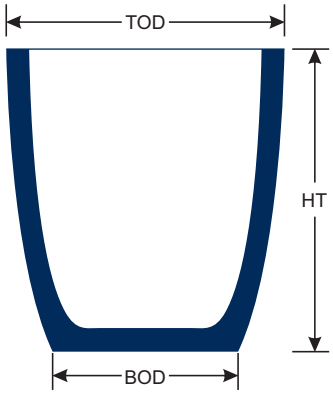
All dimensions are subject to normal manufacturing tolerances. Morgan reserves the right to change specifications at any time

ALPHA

Morgan Advanced Materials

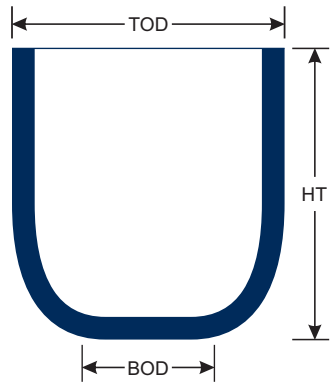
Red Diamond "Alpha" A Shape (Clay Graphite Crucibles)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
A 16	240	200	145	4
A 18	250	210	150	5
A 20	260	225	150	6
A 25	279	220	135	6
A 30	290	230	140	6
A 35	300	255	152	8
A 40	310	260	152	8
A 50	330	270	195	9
A 60	345	285	200	10
A 70	360	300	215	12
A 80	375	305	215	12
A 90	380	320	240	16
A 100	400	325	240	17
A 120	410	345	245	20
A 150	465	367	259	27
A 200	500	400	285	34
A 250	550	420	295	40
A 325	585	445	335	50
A 350	600	493	330	63
A 355	600	519	343	70
A 400	650	519	343	78
A 500	700	519	343	85
A 1100	900	650	400	161
A 1300	1100	650	400	187
A 1500	950	715	370	206
A 2500	1080	742	370	247



Red Diamond "Alpha" B Shape (Clay Graphite Crucibles)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
B 212	550	600	254	87
B 225	630	600	254	107
B 375	530	700	260	120
B 250	630	650	254	136
B 300	700	650	254	147
B 400	700	700	260	159
B 350	800	650	254	164



Note

- Our crucibles are recommended for nonferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

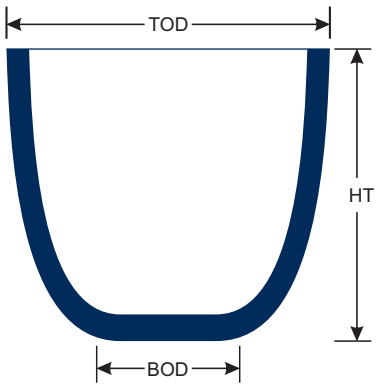
- **Specific gravity of various metals are as below:**

Aluminium = 2.72 Gold = 19.3 Zinc = 7.12
Brass = 8.35 Silver = 10.5 Iron = 7.85
Copper = 8.9

Morgan Advanced Materials

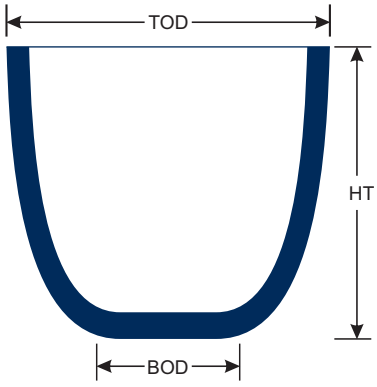
Red Diamond "Alpha" BU Shape (Clay Graphite Crucibles)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
BU 225	630	615	356	110
BU 250	660	615	356	115
BU 300	700	615	356	125
BU 350	800	615	356	146
BU 500	750	775	420	199
BU 550	800	775	420	222
BU 600	900	775	420	250
BU 700	1000	775	420	278
BU 750	790	950	500	319
BU 1000	1050	950	500	467
BU 1000L	1050	960	500	470



Red Diamond "Alpha" LB Shape (Clay Graphite Crucibles)

PATTERN	HT MM	TOD MM	BOD MM	BRIMFUL CAPACITY WATER LITRES
LB 110	336	370	286	15
LB 115	359	378	314	20
LB 140	483	457	432	50
LB 135	457	489	390	51
LB 145	501	578	425	71
LB 155	711	754	597	159



Note

- Our crucibles are recommended for nonferrous alloys except those containing more than 30% of Nickel, Chromium or Iron.
- Crucible Working capacity = 90% of (Water liter Capacity x Specific gravity of the metal)

- **Specific gravity of various metals are as below:**

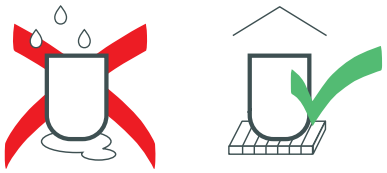
Aluminium = 2.72	Gold = 19.3	Zinc = 7.12
Brass = 8.35	Silver = 10.5	Iron = 7.85
Copper = 8.9		

CARE & USE

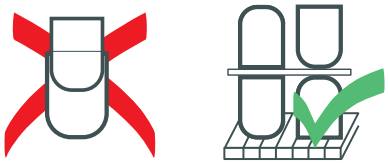
Morgan Advanced Materials

Recommendations for care and use of crucibles

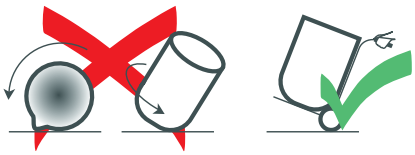
The following practices should be observed in order to achieve the maximum possible crucible life. If any further advice or information is required please contact our sales or technical staff.



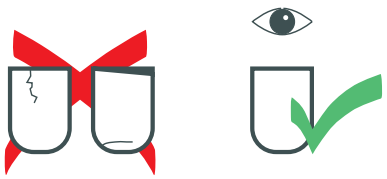
Store crucibles off the floor in a dry, warm place.



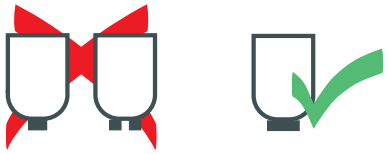
Do not nest one inside another. Separate layers with hardboard.



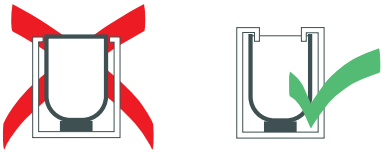
Do not roll crucibles. Move using a sack truck with padding.



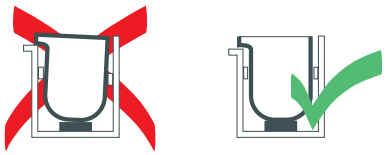
Check thoroughly for cracks or damage before use.



Use the correct crucible stand which must be central and support the whole base.

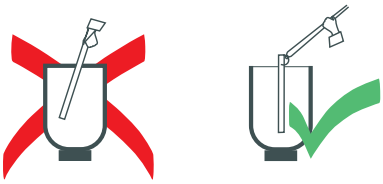


Allow space for expansion between crucible and furnace lining/cover.

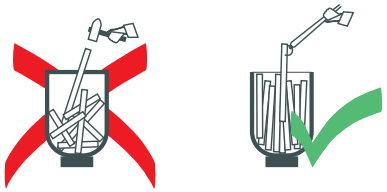


Use correctly positioned grip bricks in tilting furnaces, leaving gaps for expansion.
Do not hang crucible on spout.

The flame path must be tangential to the crucible.

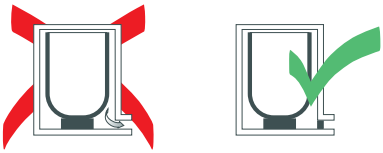


Ingots should be loaded carefully into the crucible using tongs.

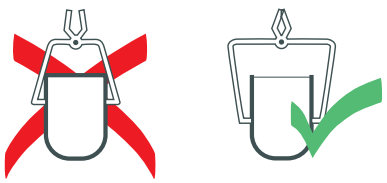


First charge with light returns, as a cushion, then add ingots vertically.

Only add flux after the metal is molten.

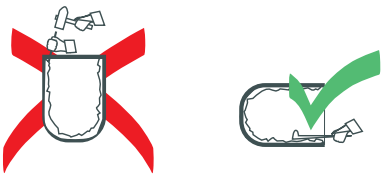


Avoid ingress of cold air by ensuring that the drain hole is sealed.



Lift-out tongs should hold crucible on its lower third and fit evenly on both sides.

The crucible must be emptied before switching off the furnace.



The crucible should be cleaned out carefully every day while still red hot.

MORGAN MMS
GLOBAL PRESENCE

Manufacturing Unit-1
MORGANITE CRUCIBLE (INDIA) LTD.
B-11, MIDC, Waluj, Aurangabad - 431 136,
Maharashtra, INDIA

Manufacturing Unit-2
MORGANITE CRUCIBLE (INDIA) LTD.
Mehasana - 384 002,
Gujarat, INDIA.

For Domestic & Export Sales Enquiries:
Email: Sales.India@morganplc.com
Ph : +91 240 6652542
Mob: +91 93133 32228

Morgan Advanced Materials

Global Headquarter:
Morgan Advanced Materials plc
Quadrant, 55-57 High Street,
Windsor, Berkshire, SL4 1LP United Kingdom

www.morganadvancedmaterials.com
www.morganmms.com

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