

## STARRBIDE Crucibles

### DESCRIPTION

STARRBIDE is a high quality tar-bonded silicon carbide crucible.

STARRBIDE is an established product with a proven track-record through extensive worldwide sales. It is designed to provide reliable performance across the full range of non ferrous melting and holding applications.

### APPLICATIONS

Consistent performance for aluminum as well as for higher temperature alloys such as brass and bronzes. Other variants are available for specific applications.

### TYPICAL METAL CASTING TEMPERATURE

1300°F—2200°F • 700°C—1200°C

### PERFORMANCE CHARACTERISTICS

- Good thermal shock resistance
- Good resistance to attack by chemical treatment agents
- High mechanical strength

### IDENTIFICATION

STARRBIDE crucibles are colored black.

### PATTERN RANGE

STARRBIDE crucibles are available in a comprehensive range of shapes and sizes to suit most end-user requirements. Custom sizes available by special request.

Heavy wall (HW) can be supplied. A wide range of pouring lips are available.

### QUALITY

STARRBIDE is manufactured to ISO9001:2000 quality standards.



### PREHEATING / FIRST USE

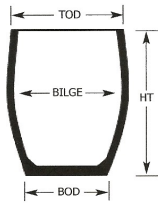
Crucibles should be preheated empty until they reach a bright-red color 1472°F (800°C). This procedure drives off any moisture absorbed in shipping and sets the glaze to achieve maximum oxidation resistance. The time needed to preheat depends on the size of the crucible. Typical times from cold to red heat are 30 minutes for crucibles with 700 lbs aluminum capacity, up to 70 minutes for crucibles with between 700–2000 lbs aluminum capacity.

### CHARGING

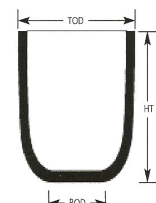
As soon as the crucible becomes hot all over, charge and melt immediately. Charge light returns first to form a cushion for heavier metal to follow. Use tongs to charge ingots. Place large pieces and ingots vertically.

SHAPE/SERIES	Dimensions: IN					Capacity: LBS		Metric-Dimensions: MM					Capacity: KG	
BILGE	TOD	HT	BOD	BLG	Wall	Al	Brass	TOD	HT	BOD	BLG	Wall	Al	Brass
1	3 1/2	3 3/4	2 3/8	3 3/8	3/8	1	3	89	95	60	86	9	0.4	1.4
2	4	4 5/8	2 5/8	4	3/8	1.5	4.5	103	116	68	103	10	0.7	2
4	4 3/4	5 3/4	3 1/8	4 3/4	1/2	3.3	10	121	146	79	121	12	1.5	4.5
6	5 1/4	6 1/2	3 7/8	5 3/8	1/2	6.2	19	133	165	98	137	14	2.8	8.6
8	5 7/8	7 1/8	4 1/4	5 7/8	1/2	8.5	26	149	181	108	149	14	3.8	11.8
10	6 3/4	8 3/4	5	6 3/4	5/8	12	36	171	222	127	171	15	5.3	16.3
12	6 5/8	8 1/2	4 1/2	6 7/8	5/8	16	48	167	217	115	176	15	7.1	21.8
14	6 3/4	9	5 1/4	7 1/4	5/8	18	56	171	229	132	184	16	8.3	25.4
16	7 1/2	9 1/2	5 1/2	7 1/2	3/4	22	68	190	242	140	190	18	10	30.8
18	7 3/8	9 7/8	5 5/8	8	3/4	24	75	187	251	143	202	18	11.1	34
20	7 5/8	10 1/2	6 1/8	8 3/8	3/4	27	82	193	267	156	212	19	12.1	37.2
30	8 1/2	11 5/8	6 7/8	9 5/8	7/8	41	125	217	295	174	244	21	18.4	56.7
50	10 1/4	13 7/8	8 1/8	11 1/4	7/8	62	190	260	351	205	285	23	28	86.2
60	10 7/8	14 5/8	8 7/8	12 1/4	1	72	221	276	370	226	311	26	32.6	100.2
70	11 3/8	15 1/4	9 1/4	12 3/4	7/8	80	245	289	388	235	323	23	36.1	111.1
80	11 5/8	15 7/8	9 1/2	12 7/8	1	93	285	294	402	240	327	25	42	129.3
90	12 1/8	16 3/8	9 3/4	13 3/8	1	98	301	308	416	248	339	26	44.4	136.5
100	12 1/2	16 7/8	10	13 5/8	1 1/8	113	348	316	428	254	347	27	51.3	157.9
125	12 7/8	17 1/2	10 3/8	14 1/4	1 1/8	126	387	328	445	264	361	27	57.1	175.5
150	13 3/4	18 1/2	11	15 1/4	1 1/8	152	467	350	470	279	388	29	68.8	211.8
175	14 3/8	19 3/8	11 1/2	15 3/4	1 3/8	191	587	366	492	292	400	34	86.5	266.3
200	15 1/4	20 1/4	12 1/4	16 3/4	1 3/8	206	634	386	514	311	425	35	93.5	287.6
225	15 1/2	20 7/8	12 1/2	16 3/4	1 5/8	239	736	395	531	318	425	40	108.5	333.8
250	16	21 1/2	12 5/8	17 3/8	1 1/2	250	769	407	545	320	440	38	113.4	348.8
275	16 1/2	22 5/8	12 1/4	18 1/8	1 3/8	296	910	419	575	310	460	34	134.2	412.8
300	16 3/4	22 3/4	13 3/8	18 1/4	1 3/8	306	943	425	578	339	462	36	139	427.7
400	18 1/2	24 1/2	14 1/2	19 1/4	1 5/8	396	1219	470	623	368	490	42	179.7	552.9

**BILGE SHAPE MEASUREMENTS**



**BOWL, BASIN, CYLINDER, BUC SHAPE MEASUREMENTS**



BOWL	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
200-B	22 1/4	15	12	1 1/2	216	665	565	382	305	40	98	302
300-B	22 1/2	18 1/2	12	1 5/8	300	924	572	470	305	40	136	419
350-B	27 1/8	16	12	1 5/8	365	1124	690	406	305	42	166	510
400-B	27 3/8	17 1/2	12	1 5/8	421	1297	695	445	305	42	191	588
450-B	27 3/8	19	12	1 5/8	477	1469	695	483	305	42	216	666
500-B	28	20 1/2	12	1 5/8	533	1642	710	520	305	42	242	745
600-B	28 1/8	22 3/4	12	1 5/8	621	1913	715	577	305	42	282	868
700-B	34	22	15	1 3/4	700	2156	865	560	382	45	318	978
800-B	34 1/4	23 3/4	15	1 3/4	800	2464	870	603	382	45	363	1118
900-B	34 1/2	25 1/2	15	1 3/4	900	2772	875	648	382	45	408	1257
1000-B	34 5/8	28	15	1 3/4	1000	3080	880	712	382	45	454	1397

All dimensions are subject to normal manufacturing tolerances. Morganite Crucible INC reserves the right to change specifications at any time. Not responsible for any typographic errors.

SHAPE/SERIES	Dimensions: IN				Capacity: LBS		Metric-Dimensions: MM				Capacity: KG	
BOWL SHAPE	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
1016	17 5/8	16	13	1 3/8	155	477	448	406	330	36	70	217
1020	17 5/8	20	13	1 3/8	214	659	448	508	330	36	97	299
1021	17 5/8	21	13	1 3/8	227	699	448	533	330	36	103	317
1023	17 5/8	23	13	1 3/8	257	792	448	584	330	36	117	359
1024	17 5/8	24	13	1 3/8	272	838	448	610	330	36	123	380
1026 LB	17 5/8	26	14	1 3/8	304	936	448	660	355	36	138	425
1028	17 5/8	28	13	1 3/8	328	1010	448	712	330	36	149	458
2000 BASIN	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
2150	20 3/4	14	12 1/4	1 3/8	146	448	527	356	310	34	66	203
2225	20 3/4	17	12 1/4	1 3/8	198	611	527	432	310	34	90	277
2250	20 3/4	18	12 1/4	1 3/8	231	713	527	458	310	34	105	323
2275	20 3/4	19	12 1/4	1 3/8	249	767	527	483	310	34	113	348
2325	20 3/4	21	12 1/4	1 3/8	265	815	527	534	310	34	120	370
2375	20 3/4	23	12 1/4	1 3/8	309	951	527	585	310	34	140	431
2425	20 3/4	25	12 1/4	1 3/8	379	1168	527	635	310	34	172	530
2450	20 3/4	25	12 1/4	1 3/8	379	1168	527	635	310	34	172	530
2500	20 3/4	28	12 1/4	1 3/8	456	1406	527	711	310	34	207	638
2650-30	20 1/2	30	14 1/2	2			520	762	368	45		
2650-34	20 3/4	34	14 1/2	1 3/4			527	863	368	45		
3000 BASIN	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
3300	24	15	14 1/2	1 1/2	283	872	610	381	368	38	128	395
3350	24	17	14 1/2	1 5/8	335	1032	610	432	368	42	152	468
3450	24	21	14 1/2	1 1/2	439	1352	610	534	368	38	199	613
3500	24	23	14 1/2	1 1/2	490	1509	610	584	368	38	222	685
3550	24	25	14 1/2	1 1/2	517	1592	610	635	368	38	235	722
3625	24	27	14 1/2	1 1/2	569	1753	610	685	368	38	258	795
3635	24	28	14 1/2	1 1/2	631	1943	610	710	368	38	286	882
3700	24	30	14 1/2	1 1/2	673	2073	610	762	368	38	305	940
3750	24	32	14 1/2	1 1/2	722	2224	610	813	368	38	327	1009
3800	24	36	14 1/2	1 1/2	826	2544	610	915	368	38	375	1154
3034	24	34	18 3/4	1 3/4			610	863	477	45		
3039	24	39	18 3/4	2			610	990	477	50		
4000 BASIN	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
4425	20 1/2	25	12 1/4	1 3/4*			520	635	311	45*		
4475	20 1/2	27	12 1/4	1 3/4*			520	685	311	45*		
4500	20 1/2	28	12 1/4	1 3/4*			520	710	311	45*		
4500	20 1/2	28	12 1/4	1 3/4*			520	710	311	45*		
4800-33	20 1/2	33	14 1/2	1 3/4*	541	1666	521	838	368	45*	245	756
20,000 BASIN	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
20700	30 3/4	25	15	1 3/4	675	2079	781	635	38	46	306	943
20890	30 3/4	30	15	1 3/4	900	2772	781	762	381	46	408	1257
20890	30 3/4	30	15	1 3/4	900	2772	781	762	381	46	408	1257
21000	30 3/4	33	15	1 3/4	1035	3188	781	838	381	46	469	1446
21115	30 3/4	35	15	1 3/4	1125	3465	781	889	381	46	510	1572
21115-36	30 3/4	36	15	1 3/4	1157	3564	781	915	381	46	525	1616
21200-37.5	30 3/4	37 1/2	15	1 3/4	1237	3810	781	952	381	46	561	1728
21280	30 3/4	38	15	1 3/4	1254	3862	781	965	381	46	569	1752

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SHAPE/SERIES	Dimensions: IN						Capacity: LBS		Metric-Dimensions: MM				Capacity: KG	
	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass		
<b>20,000 BASIN</b>														
21200-38.5	30 3/4	38 1/2	15	1 3/4	1270	3912	781	978	381	46	576	1774		
21300	30 3/4	42	15	1 3/4	1440	4435	781	1067	381	46	653	2012		
21350	30 3/4	46	15	1 3/4	1620	4990	781	1168	381	46	735	2263		
20026 LB	30 3/4	26	26	1 7/8	936	2883	781	660	660	48	425	1308		
20030 LB	30 3/4	30	26	1 7/8	1110	3419	781	762	660	48	503	1551		
20038 LB	30 3/4	38	26	1 7/8	1458	4491	781	965	660	48	661	2037		
<b>30,000 BASIN</b>														
30630-20.5	28 1/8	20 1/2	15	1 3/4	563	1734	715	520	382	44	255	787		
30630	28 1/8	23 1/2	15	1 3/4	630	1940	715	597	382	44	286	880		
30720	28 1/8	26	15	1 3/4	733	2258	715	660	381	44	332	1024		
30765	28 1/8	27 1/4	15	1 3/4	765	2356	715	693	382	44	347	1069		
30810	28 1/8	28 3/4	15	1 3/4	822	2532	715	730	382	44	373	1148		
30850	28 1/8	30	15	1 3/4	835	2572	715	762	382	44	379	1167		
30900	28 1/8	31 7/8	15	1 3/4	932	2871	715	810	382	44	423	1302		
31000	28 1/8	34 7/8	15	1 3/4	1057	3256	715	886	382	44	479	1477		
31100	28 1/8	37 3/8	15	1 3/4	1162	3579	715	950	381	44	527	1623		
31150	28 1/8	38 3/8	15	1 3/4	1203	3705	715	975	382	44	546	1681		
31270	28 1/8	41 3/8	15	1 3/4	1286	3961	715	1050	381	44	583	1797		
30045	28 1/8	45	15	1 3/4	1391	4284	715	1143	381	44	631	1943		
30026 LB	28 1/8	26	21	1 3/4	765	2356	715	660	533	44	347	1069		
30041 LB	28 1/8	41	21	1 3/4	1289	3970	715	1041	533	44	585	1801		
33045 LB	28 1/8	45	21	1 3/4	1430	4404	715	1143	533	44	649	1998		
30046 LB	28 1/8	46	21	1 3/4	1465	4512	715	1168	533	44	665	2047		
<b>40,000 BASIN</b>														
41200	34 3/8	32 1/2	15	1 3/4	1200	3696	872	826	382	44	544	1677		
41300	34 3/4	34	15	1 3/4	1300	4004	882	863	382	44	590	1816		
41500	34 3/8	38 1/2	15	1 3/4	1500	4620	872	977	382	44	680	2096		
41550	34 3/8	39 1/2	15	1 3/4	1539	4740	872	1000	381	44	698	2150		
41800	34 3/4	44	15	1 3/4	1800	5544	882	1117	382	44	816	2515		
42000	34 3/4	48	15	1 3/4	2000	6160	882	1219	382	44	907	2794		
<b>1000 XU BASIN</b>														
1014XU	20 3/4	14	12 1/4	1 3/8	146	448	527	356	310	34	66	203		
1015XU	20 3/4	15	12 1/4	1 3/8	168	516	527	381	310	34	76	234		
1017XU	20 3/4	17	12 1/4	1 3/8	198	611	527	432	310	34	90	277		
1018XU	20 3/4	18	12 1/4	1 3/8	231	713	527	458	310	34	105	323		
1019XU	20 3/4	19	12 1/4	1 3/8	249	767	527	483	310	34	113	348		
1021XU	20 3/4	21	12 1/4	1 3/8	265	815	527	534	310	34	120	370		
1023XU	20 3/4	23	12 1/4	1 3/8	309	951	527	585	310	34	140	431		
1025XU	20 3/4	25	12 1/4	1 3/8	379	1168	527	635	310	34	172	530		
1026XU	20 3/4	26	12 1/4	1 3/8	410	1263	527	660	310	34	186	573		
1027XU	20 3/4	27	12 1/4	1 3/8	428	1317	527	686	310	34	194	598		
1028XU	20 3/4	28	12 1/4	1 3/8	456	1406	527	711	310	34	207	638		
1029XU	20 3/4	29	12 1/4	1 3/8	481	1480	527	737	310	34	218	671		
1030XU	20 3/4	30	12 1/4	1 3/8	507	1562	527	762	310	34	230	708		

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SHAPE/SERIES	Dimensions: IN				Capacity: LBS		Metric-Dimensions: MM				Capacity: KG	
2000 XU BASIN	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
2414XU	24	14	14 1/2	1 1/2	255	785	610	356	368	38	116	356
2416XU	24	16	14 1/2	1 1/2	302	930	610	406	368	38	137	422
2418XU	24	18	14 1/2	1 1/2	362	1115	610	457	368	38	164	506
2420XU	24	20	14 1/2	1 1/2	414	1275	610	508	368	38	188	578
2421XU	24	21	14 1/2	1 1/2	439	1352	610	534	368	38	199	613
2423XU	24	23	14 1/2	1 1/2	482	1485	610	584	368	38	219	673
2424XU	24	24	14 1/2	1 1/2	495	1525	610	610	368	38	225	692
2425XU	24	25	14 1/2	1 1/2	517	1592	610	635	368	38	235	722
2426XU	24	26	14 1/2	1 1/2	540	1663	610	660	368	38	245	754
2427XU	24	27	14 1/2	1 1/2	569	1753	610	685	368	38	258	795
2428XU	24	28	14 1/2	1 1/2	631	1943	610	711	368	38	286	882
2429XU	24	29	14 1/2	1 1/2	650	2002	610	737	368	38	295	908
2430XU	24	30	14 1/2	1 1/2	673	2073	610	762	368	38	305	940
2431XU	24	31	14 1/2	1 1/2	698	2150	610	787	368	38	317	975
2432XU	24	32	14 1/2	1 1/2	722	2224	610	813	368	38	327	1009
2434XU	24	34	14 1/2	1 1/2	770	2372	610	863	368	38	349	1076
2436XU	24	36	14 1/2	1 1/2	826	2544	610	914	368	38	375	1154
BUC	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
BUC300	24 1/4	27 1/2	14				615	700	356			
BUC300	24 1/4	27 1/2	14				615	700	356			
BUC350	24 1/4	31 1/2	14				615	800	356			
BUC500	30 1/2	29 1/2	15 3/4				775	750	400			
BUC600	30 3/4	35 3/8	15 3/4				780	900	400			
CYLINDER	TOD	HT	BOD	Wall	Al	Brass	TOD	HT	BOD	Wall	Al	Brass
P 5	3 1/2	6	3 1/2		5	15	89	152	89		2.3	7
P 12	4 1/4	6 3/4	4 1/4		12	37	108	171	108		5.4	16.8
P 17	4 1/2	8	4 1/2		17	52	114	203	114		7.7	23.8
P 30	5 3/8	9 3/4	5 1/4		28	86	135	248	133		12.7	39.1
171	6 1/2	11 7/8	6 5/8				165	302	168			
509	9	14	8 1/2		100	308	230	355	216		45.4	139.7
515	10 1/2	14 3/4	10 1/4				267	374	260			
529-17	12 1/4	16 3/4	11 7/8	1	300	924	311	426	303	25	136.1	419.1
529-19	12 1/4	18 3/4	11 7/8	1	350	1078	311	477	303	25	158.8	489
100LUG17.2	14	17 1/4	14	07-Aug			356	435	356	23		
564-20.25	15 1/8	20 1/4	15 1/8	1 1/8	600	1848	384	515	384	30	272.2	838.3
564-22	15 1/8	22	15 1/8	1 1/8	635	1956	384	558	384	30	288	887.2
564-25LUG	15 1/8	25	15 1/8	1 1/8			384	635	384	30		
576-22	16	22	16				407	559	407			
576-25	16	25	16				407	635	407			
576-26.5	16	26 1/2	16				407	673	407			
581-22.75	18 1/2	22 3/4	18 1/2				470	578	470			
581-26	18 1/2	26	18 1/2				470	660	470			
581-33.5	18 1/2	33 1/2	18 1/2				470	850	470			
582	19	33 1/2	18 3/4				483	851	475			
915	20 1/2	30	16	1 5/8			520	762	406	42		
915-32	20 1/2	32	16	1 5/8			520	813	406	42		
819	24	32	18 3/4	1 5/8			610	813	477	42		

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## INSTALLING THE CRUCIBLE

The use of a base block made of the same material will ensure uniform heating of the crucible base and help reduce thermal strains.

The base block should have the same or slightly larger diameter as the base of the crucible to provide adequate support. For optimum heat transfer and melting efficiency, the height of the base block should be such that the base of the crucible is level with the center line of the burner. The base block and crucible should be installed centrally in the furnace.

## BALE OUT FURNACES

The crucible should have a 1/8" gap between the top edge of the crucible and the cover, to allow for expansion of the crucible. Too small of a space can lead to cracking at the top of the crucible.

Place a layer of insulating material, such as ceramic fiber between the cover and the top edge of the crucible to seal the gap. Ensure this insulation touches only the top edge of the crucible and not the side. The top steel ring must have a 1/2" space between it and the inside of the crucible to allow for expansion. Too small of a space can lead to cracking at the top of the crucible.

## SAFETY













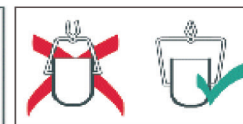


Proper safety clothing must be worn at all times, refer to AFS standards. Ensure that no moisture is introduced into the melt.

## TILTING FURNACES

Cement the base block on the floor of the furnace; make sure it is centrally located and level. Place the crucible centrally onto the base block. Use Morcem 900 to bond base block and crucible together. Place the grip bricks 3" below the top edge of the crucible, leaving a 1/4" space between the crucible wall and grip bricks. Insert cardboard or carbonaceous material in the space. Leave a space of 1-1/2" below the spout for expansion.



## CRUCIBLE CARE

				
Store crucibles in a dry, warm area.	Do not stack inside another.	Do not roll crucibles.	Check for cracks or transport damage before use.	Base block must be flat, larger than crucible bottom and centered.
				
Use a ceramic fiber blanket to seal. Allow space between top and sides of furnace.	Use locating bricks in tilting furnaces, to allow for expansion.	Tangential fire around crucible.	Do not drop charge—slowly lower in with tongs.	First charge with returns, then ingots on top.
				
Only add flux after metal is molten.	Avoid premature crucible failure by ensuring drain hole is sealed.	For lift-out, tongs must be placed on lower third of crucible. Fit tongs evenly on both sides.	Empty crucible before removing from furnace. Do not let metal solidify in crucible.	Clean carefully every day while still hot.



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