

Product Information

SYNCARB Crucibles

DESCRIPTION

SYNCARB is a premium quality crucible manufactured by iso-static pressing and incorporating high levels of oxidation and mechanical durability.

It is designed to have superior resistance to attack by melt treatment agents resistance typically used in aluminum alloy applications.

APPLICATIONS

SYNCARB offers superior performance for aluminum holding and melting in electric resistance and gas furnaces; as well as melting and holding of zinc and zinc alloys.

TYPICAL METAL CASTING TEMPERATURE

Aluminum: 1148°F—1652°F • 620°C—900°C
Zinc: 842°F—1022°F • 450°C—550°C

PERFORMANCE CHARACTERISTICS

- Excellent resistance to attack by chemical treatment agents
- Fast melting
- Excellent oxidation resistance
- Excellent oxidation resistance when holding at 700°C, giving longer life.
- Improved oxidation resistance when melting and holding at 700°C -750°C
- High mechanical strength
- High density

IDENTIFICATION

SYNCARB crucibles are finished in a light rust colour.

PATTERN RANGE

SYNCARB crucibles are available in a range of shapes and sizes to suit most end-user requirements. Certain sizes can be made available with pyrometer pocket to facilitate measurement of metal temperature. A wide range of pouring lips are available.



QUALITY

SYNCARB crucibles are manufactured from premium grade raw materials under an ISO 9001:2008 quality management system.

PREHEATING/FIRST USE

- Crucibles should be preheated empty until they reach a bright-red color.
- Heat to 400°F (200°C) over two hours, then heat to 1100°F (600°C) in the next hour.
- Heat at full power to 1740°F (950°C).
- Hold at this temperature for one hour.
- The cover should be in place throughout the process.
- This procedure drives off any moisture absorbed in shipping and sets the glaze to achieve maximum oxidation resistance
- After first use, the crucible should be heated from cold to 1100 ° F. (600°C) in 90 minutes.

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.

Crucible Dimensions

SYNCARB 30,000	Imperial Dimensions						Metric Dimensions					
Basin Series	Top od ins	Ht ins	Btm od ins	Wall ins	Al Lbs	Brass Lbs	Top od mm	Ht mm	Btm od mm	Wall mm	Al Kgs	Brass Kgs
30850	28 1/8	30	12	1 1/2	931	3296	714	762	305	37	422	1495
30900	28 1/8	31 1/2	12	1 1/2	977	3462	714	800	305	37	443	1570
31100	28 1/8	37	12	1 1/2	1147	4068	714	940	305	37	520	1845
SYNCARB 40,000	Imperial Dimensions						Metric Dimensions					
Basin Series	Top od ins	Ht ins	Btm od ins	Wall ins	Al Lbs	Brass Lbs	Top od mm	Ht mm	Btm od mm	Wall mm	Al Kgs	Brass Kgs
41200 (750MM)	34	29 1/2	13 3/4	1 3/4	1249	4422	865	750	350	47	566	2005
41200 (815MM)	34	32 1/8	13 3/4	1 3/4	1393	4934	865	815	350	47	632	2238
41300	34 1/2	34	13 3/4	1 3/4	1603	5453	865	865	350	47	727	2473
41400	34 5/8	36	13 3/4	1 3/4	1673	5926	880	915	350	47	759	2687
41500	34 5/8	38	13 3/4	1 3/4	1789	6335	880	965	350	47	811	2873
41600	34 5/8	40	13 3/4	1 3/4	1881	6663	880	1015	350	47	853	3022
41700	34 5/8	41 7/8	13 3/4	1 3/4	1974	6991	880	1065	350	47	895	3171
41800	34 5/8	43 7/8	13 3/4	1 3/4	1939	6867	880	1115	350	47	879	3114
42000	34 5/8	47 7/8	13 3/4	1 3/4	2366	8381	880	1215	350	47	1073	3801
42240	34 5/8	52	13 3/4	1 3/4	2573	9112	880	1321	350	47	1167	4133
SYNCARB 50,000	Imperial Dimensions						Metric Dimensions					
Basin Series	Top od ins	Ht ins	Btm od ins	Wall ins	Al Lbs	Brass Lbs	Top od mm	Ht mm	Btm od mm	Wall mm	Al Kgs	Brass Kgs
52100 (686MM)	37 3/8	27	13 1/4	2	1238	4386	950	686	335	48	562	1989
52100 (762MM)	37 1/2	30	13 1/4	2	1622	5744	955	762	335	48	736	2605
52100 (812MM)	37 3/4	32	13 1/4	2	1706	6043	960	812	335	48	774	2740
52100 (942MM)	38	37	13 1/4	2	2142	7585	966	942	335	48	971	3440
52330	38 1/8	40	13 1/4	2	2371	8396	968	1016	335	47	1075	3808
52770	38 1/4	46	13 1/4	2	2888	10228	970	1168	335	47	1310	4639
53000	38 1/4	49	13 1/4	2	3078	10903	970	1245	335	47	1396	4944
53230	38 1/4	52	13 1/4	2	3266	11568	970	1321	335	47	1481	5246

SYNCARB 60,000	Imperial Dimensions						Metric Dimensions					
Basin Series	Top od ins	Ht ins	Btm od ins	Wall ins	Al Lbs	Brass Lbs	Top od mm	Ht mm	Btm od mm	Wall mm	Al Kgs	Brass Kgs
60700	40 1/2	27 1/2	21 1/4	2	1694	5759	1030	700	540	50	768	2612
60760	40 1/2	30	21 1/4	2	1905	6476	1030	760	540	50	864	2937
60815	41 1/8	32	21 1/4	2	2079	7069	1045	815	540	50	943	3506
60990	41 3/4	39	21 1/4	2	2637	8966	1035	990	540	50	1196	4066
61050	41 3/8	41 3/8	21 1/4	2	2925	9944	1050	1050	540	50	1326	4510
SYNCARB	Imperial Dimensions						Metric Dimensions					
BU Series	Top od ins	Ht ins	Btm od ins	Wall ins	Al Lbs	Brass Lbs	Top od mm	Ht mm	Btm od mm	Wall mm	Al Kgs	Brass Kgs
BU 175	20 3/4	21 5/8	12	1 1/4			527	550	305	30	154	524
BU 250	24 1/4	24 3/4	12 5/8	1 1/2	477	1689	615	630	320	37	216	766
BU 300	24 1/4	27 1/2	12 5/8	1 1/2	530	1878	615	700	320	38	241	852
BU 350	24 1/4	31 1/2	12 5/8	1 1/2	611	2165	615	800	320	38	277	982
BU 360	24 1/4	35 1/2	12 5/8	1 1/2	849	3007	615	900	320	36	385	1364
BU 500	30 1/2	29 1/2	14 1/8	1 1/2	916	3244	775	750	360	38	415	1471
BU 600	30 3/4	35 1/2	13 3/4	1 1/2	1119	3964	780	900	350	38	508	1798
BU 700-37.5	31	37 1/2	13 3/4	2	1109	3928	785	952	350	48	503	1781
BU 700-38.5	31	38 1/2	13 3/4	2	1141	4042	785	978	350	48	518	1833
SYNCARB	Imperial Dimensions						Metric Dimensions					
BOWLS	Top od ins	Ht ins	Btm od ins	Wall ins	Al Lbs	Brass Lbs	Top od mm	Ht mm	Btm od mm	Wall mm	Al Kgs	Brass Kgs
600 B	28 1/4	23	12	2	609	2073	718	584	305	48	276	940
800 B	34	23 3/4	12 1/2	2	889	3149	864	603	318	48	403	1428
1000 B	34 3/4	28	12 1/2	2	1065	3773	883	711	318	48	483	1711

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. Ensure this insulation touches only the top edge of the gap 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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All dimensions are subject to normal manufacturing tolerances. Molten Metal Systems reserves the right to change specifications at any time.