



ISO9001



High tech enterprises



IATF16949

## QUALITY CERTIFICATE

Product Name: **Grain refiner**

Product Type : **AlTi5B1**

Date : **2026.01.01**



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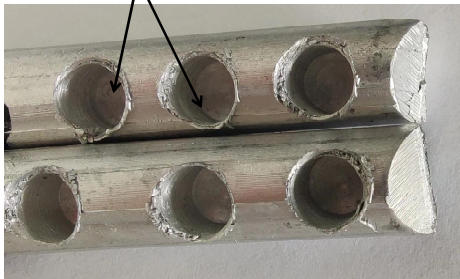
## QUANTITY REPORT

Main Weighing Devices	SCS-100T Electronic Truck Scale; SCS-2 Electronic Platform Scale				
Calibration Institution	Bureau of Quality and Technical Supervision				
Calibration Period	Internal calibration period - Six month; External calibration period - One year				
No.	Heat No	Pallet No	Total		
			Weight of packing(Kg)	Net Weight (Kg)	Gross Weight (Kg)
1	DA26111201	DS326111401	16.5	569.5	586
2	DA26111202	DS326111401	16	569.5	585.5
3	DA26111203	DS326111401	17	568.5	585.5
4	DA26111204	DS326111401	17	570.5	587.5
5	DA26111205	DS326111401	16.5	571	587.5
6	DA26111206	DS326111401	17	570.5	587.5
7	DA26111207	DS326111401	17	568.5	585.5
8	DA26111208	DS326111401	16	568.5	584.5
9	DA26111209	DS326111401	17	570	587
10	DA26111210	DS326111410	17	571	588
11	DA26111211	DS326111411	16	569.5	585.5
12	DA26111212	DS326111412	16	570.5	586.5
13	DA26111213	DS326111413	17	569	586
14	DA26111214	DS326111414	16	569.5	585.5
15	DA26111215	DS326111415	16	567	583
16	DA26111216	DS326111416	16.5	567.5	584
17	DA26111217	DS326111417	17	566.5	583.5
Total			281.5	9677	9958.5

Issued:Kang Xinwei

Audited:Yan Jie


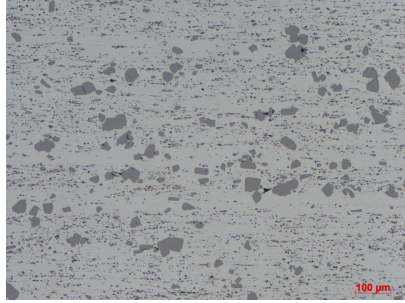
## CHEMICAL COMPOSITIONS

Inspection Equipment	Electronic Analytical Balance; ICP		Sampling position: 						
Inspection Standard	GB/T20975.25 Inductively Coupled Plasma Atomic Emission Spectrometry for Aluminium and Aluminium Alloys								
No	Heat No	Technical standards							
		Si%	Fe%	Ti%	B%	V%	Other Each	Other Total	Al
		≤0.20	≤0.25	4.5-5.5	0.8-1.2	≤0.10	≤0.03	≤0.10	Remain
1	DA26111201	0.106	0.082	4.92	1.01	0.012	<0.03	<0.10	Remain
2	DA26111202	0.098	0.084	5.07	1.05	0.012	<0.03	<0.10	Remain
3	DA26111203	0.093	0.089	4.95	1.05	0.012	<0.03	<0.10	Remain
4	DA26111204	0.091	0.092	4.90	1.06	0.013	<0.03	<0.10	Remain
5	DA26111205	0.088	0.084	5.03	1.00	0.012	<0.03	<0.10	Remain
Conclusion			Up to Grade						

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Audited: Zhang Hongmei


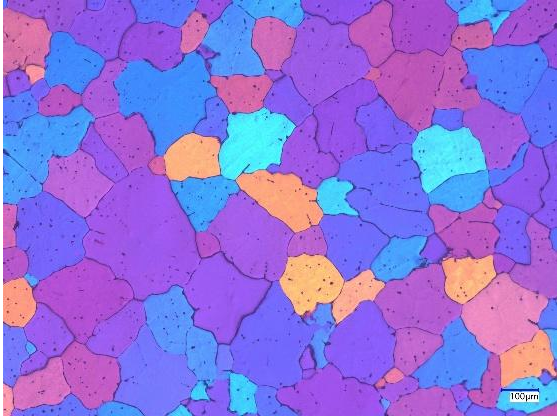
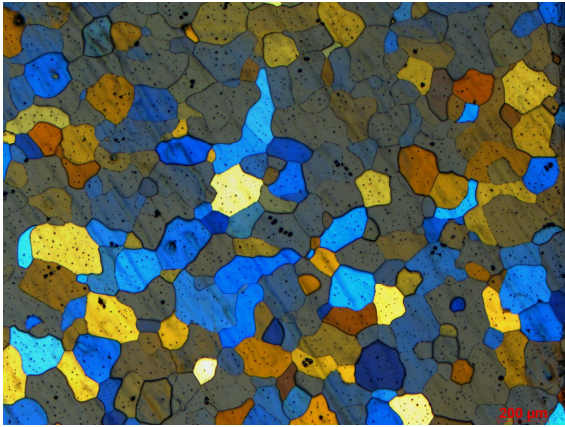
## MICROSTRUCTURE

Sample name:	AITi5B1	Sampling position:	
Heat No :	DA26111201	Sampling point	
Instrument:	Metallographic Microscope Imager.A2m		
Inspection Standard:	GB/T3246.1 Inspection Method for Structure of Wrought Aluminum and Aluminum Alloy Products Part 1: Inspection method for microstructure		
Inspection Method:	Cut a 1.0-1.1 cm sample along the axle of rod, then polish the sample and analyze it by the microscope.		
Technical specification		Test Result	Typical Photo:
TiAl <sub>3</sub>	The particles are blocks or rod shaped and distributed evenly	Up to Grade	
	Average size < 50μm	< 30μm	
	maximum size < 200μm	115μm	
TiB <sub>2</sub>	Dispersed evenly	Up to Grade	
	Average size < 2μm	< 2μm	
	Size of loose conglomeration < 50μm is allowed and at most Six.	0	
Al <sub>2</sub> O <sub>3</sub> (Oxide) and other salt fixture	Total length < 3000μm	1698μm	
Boride	None	0	
Undissolved solid impurities	None	0	
Conclusion		Up to Grade	

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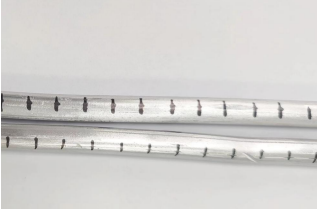

## GRAIN REFINING

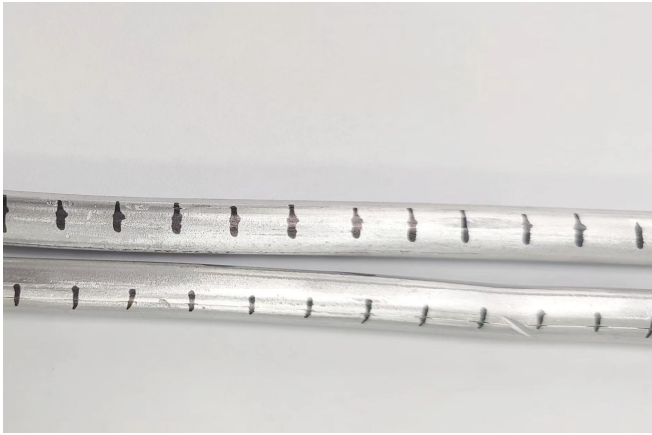
Sample name:	AlTi5B1	Sampling position: 
Heat No :	DA26111201	
Inspection Standard:	Refer to Test Standard Procedure for Aluminum Alloy Grain Refiners 2012(TP-1)	
Inspection method:	<p>The sample was added to Al99.70 A aluminum liquid (<math>718 \pm 5 \text{ }^\circ\text{C}</math>) at the ratio of 2kg/t , stirred for about 30s and kept warm for 2 minutes, then cast at <math>718 \pm 5 \text{ }^\circ\text{C}</math>. The Cross section of <math>38 \pm 1 \text{ mm}</math> at the bottom of the sample block was used as the standard test surface, after polishing, the average grain diameter was measured by microscope.</p>	Typical Photo: 
Technical standard:	After grain refining, average grain size are $\leq 150\mu\text{m}$	Sampling inspection photo 
Conclusion		After grain refining, grain size are $125\mu\text{m}$ .

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## MECHANICAL PROPERTY

Sample name :	AITi5B1	Sampling position: 
Heat No :	DA26111201	
Inspection Standard:	Metallic materials-Tensile testing-Part1:Method of test at room temperature (ISO6892-1:2009,MOD)	
Inspection method:	Metallic materials-Tensile testing-Part1:Method of test at room temperature (ISO6892-1:2009,MOD)	Typical Photo: 
Technical standard:	Elongation after fracture $A_{50mm}\% \geq 15\%$	

Sampling inspection photo	
	
Conclusion	After mechanical performance testing, the elongation after fracture is 31.04%

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## SPECIFICATION

### Application Scope:

Our Grain refiner products are suitable for the manufacturing of Aluminum Castings, Profiles, Sheets and Foils.

- ① Forming fine equiaxed microstructure in castings.
- ② Improve the casting speed of direct water-cooled casting and continuous casting.
- ③ Improve the surface quality of the ingot, especially by reducing the cold shut of the ingot.
- ④ Avoid casting cracks.
- ⑤ Improve the mechanical performance of the end-products.

### Usage Instruction:

1. Ensure dryness before use.
2. Adding temperature is normal casting temperature (recommended between 710-730 °C).
3. Adding method 1(Furnace):  
Put into furnace melt dispersedly after skimming away the surface dross, and wait for 10 minutes before casting. It should be used after refining or before the last refining.
4. Adding method 2(Laundry):  
Add AlTi5B1 wire into the laundry by feeding machine. Response time is 30 seconds to 60 seconds. The adding position of the melt should be clean, high flow rate, and high temperature. It should be added in reverse near the centerline of the melt flow, with the adding speed matching the melt flow rate.
5. Adding amount:  
1.5-4kg/mt normally. The specific adding amount should be determined by the practical conditions.  
(Insufficient addition will reduce the refinement effect; If melting time is long or melting temperature is high, the adding amount should be increased.)

## COMPANY PROFILE

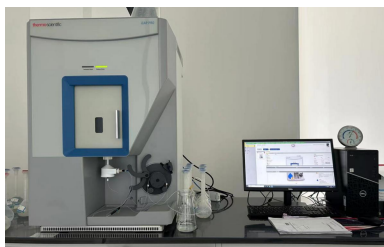
Anhui Dongboshengye New Material Technology Co., Ltd. is a technology-based enterprise specializing in the research and development, manufacturing of Grain refiners, Modifiers, Alloying elements, and Purification products.

Company has three production lines with a production capacity over 110,000mt/year, including 30,000mt/year of Master alloy products. 60,000mt/year of Alloying element products, 20,000mt/year of Grain Refiner products. There are over 10 varieties of Master alloy products, over 20 varieties of Alloying element products. 60% of the company's products are sold domestically, and 40% are exported to foreign market such as Europe, North America, Japan, South Korea, and Southeast Asia, providing stable supply to world famous aluminium companies.

### Laboratory equipment and facilities



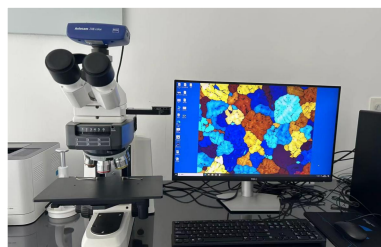
Multi functional platform



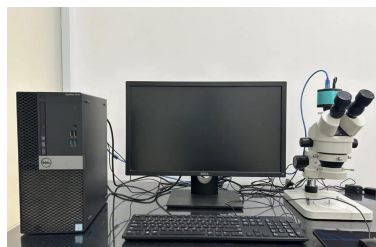
ICP-AES



Optical Direct-reading Spectrometer



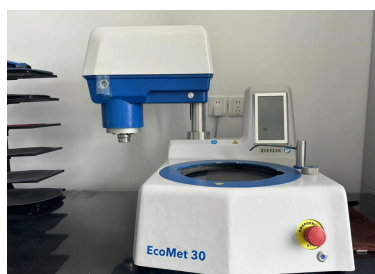
Metallurgical Microscope



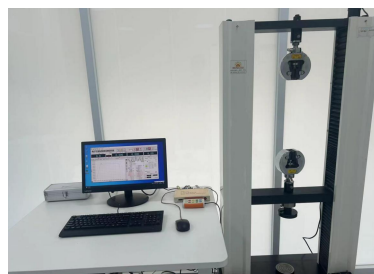
Stereomicroscope



SEM



Grinding Machine



Tensile testing machine



Record office