Aluminum Melt Hydrogen/Gas Detector | ALP50 Bell Type Hydrogen Detector

ALP50 Hydrogen Detector

ALP80 Clamshell Hydrogen Detector

「ALP50 Main Application」

This model can rapidly, within 5 minutes,complete a qualitative test on hydrogen/gas content status of AL melt before casting,therefore to decide whether the metal melt is casting ready, reducing casting waste and improving productivity. Working along with our company's degassing & refining devices, this model can help produce high-quality casts for our customers in a fast and high-efficiency way. Despite its sole function of qualitative test, ALP50 is of an economical unit with high cost-performance ratio. It is easy to apply to testing, suitable for on-site application of casting factories. By merely examining the concave-convex surface of the tested aluminum samples, it can be decided whether casting requirements are met.

「ALP50 Advantages」

1.Small in size and high mobility.
2.Light in weight: approximately 27Kg.
3.Easy to use, changing process of tested samples can be observed directly.
4.Fast and convenient detecting, gas status results within 5 minutes and good repeatability.
5.Cart installation ready, more mobility.
6.Low-cost usage and maintenance.

「ALP50 Tech Parameters」

1.220V~50Hz 120W
2.Vacuuming speed: ≤85L/Min;
3.Ultimate vacuum: －0.98MPa;
4.Estimated vacuum time: ≥30S;
5.Detecting time: 5 minutes;

「ALP50 Hydrogen/Gas Detecting Principles」

ALP50 adopts decompression solidification test methods. When tested samples solidify in vacuum, hydrogen dissolved in aluminum melt will be continuously released and forms bubbles inside or on surface of the tested samples. By detecting concave-convex level of the surface or gas hole ratio of the cross section, gas volume in aluminum melt can be determined. Test results decide whether samples are casting ready. Also hydrogen volume can be determined by examining the existence of cauliflower patterns on metal surface.

「ALP50 Test Methods」

1.Direct observation on the tested metal surface for concave-convex status after cooling. Concave indicates low gas volume contained and convex indicates otherwise.
2.Cut tested metal after cooling and observe the cross section for the volume of gas holes. Less holes indicate low gas contained and more holes indicates otherwise.

Low Pinhole Test Standards

Pinhole Level	Pinhole Quantity(cm^3)	Pinhole Diameter(mm)	Percentage(%)
1	<5	<0.1 <0.2	90 10
2	<10	<0.1 <0.2	80 20
3	<15	<0.3 <0.5	80 20
4	<20	<0.5 <1.0	70 30
5	<25	<0.5 <1.0 >1.0	60 30 10

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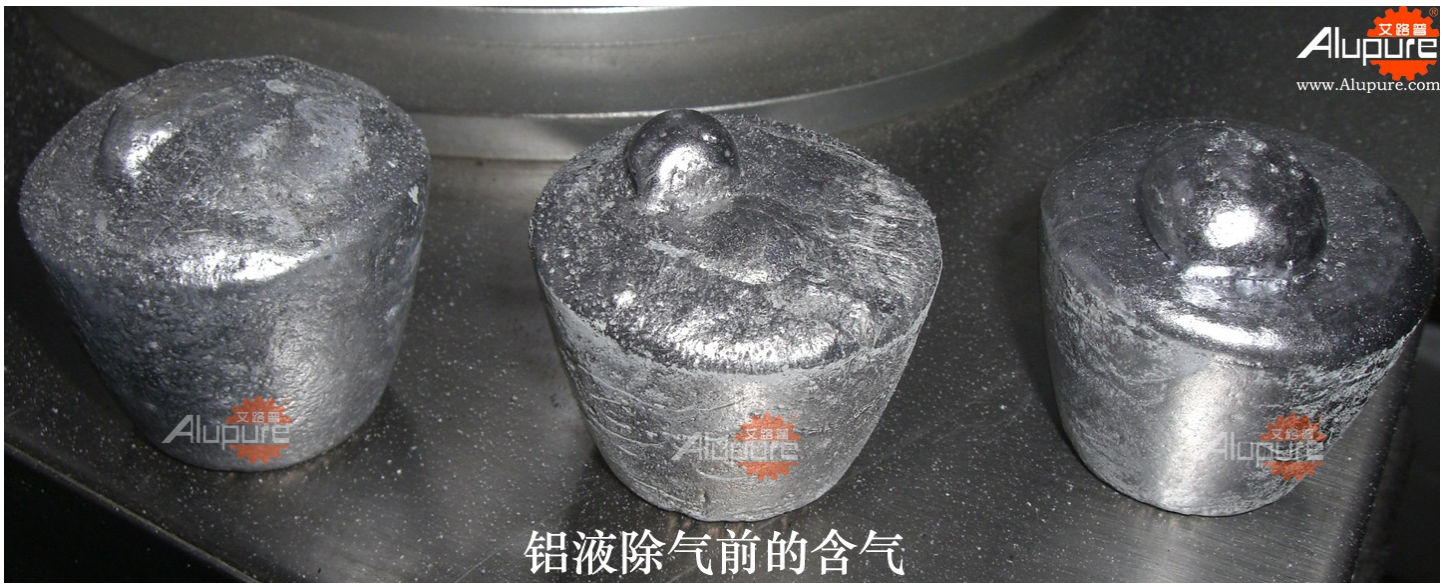
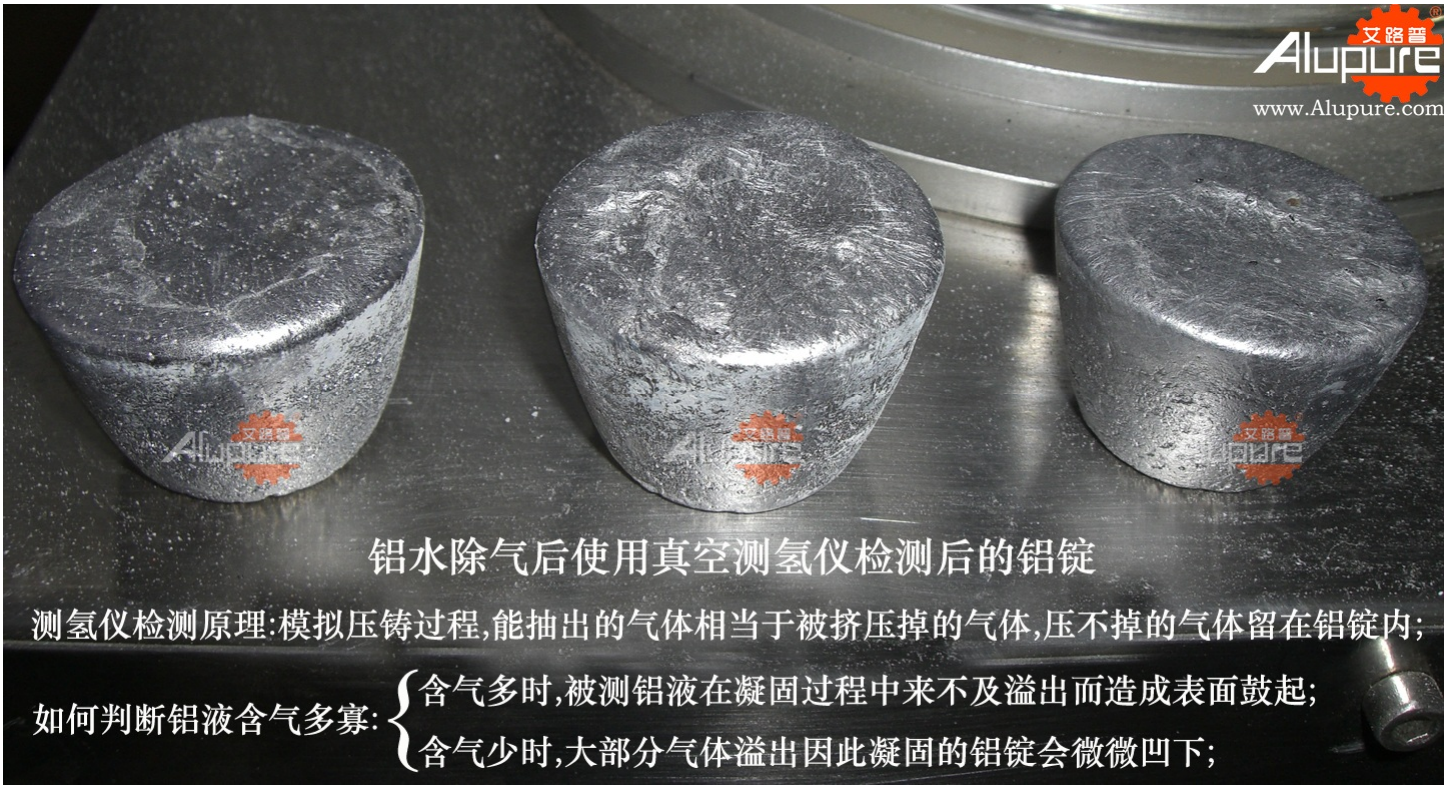
Copper/AL Melt Hydrogen Detecting Devices | Before and After Degassing

「Before and After Degassing Gas Content Comparision」

If AL melt contains too much gas, the direct effects are the bubbles and bumps formed in the melt surface while hydrogen detecting in process. As our years of experience, melts with bubbles and bumps are basically not qualified for pouring or casting, and only can be used after degassing and refining, or waste product rate will be high. The following are the test samples containing too much gas:



After enough time degassing and refining, impurity or gas content will be greatly reduced in melt. The direct effects are no bubbles and bumps formed in the melt surface while hydrogen detecting in process. On the contrary, a slight concave will appear on the melt surface. Under this circumstance, few gas holes can be found on AL cast sections, or very low gas content can be detected in other measures. Due to limited manufacturing time and our experience, gas quantity content can be judged by the concave-convex status of melts. Complex sample-by-sample tests are not necessary. Degassing and refining effects are displayed as followed:



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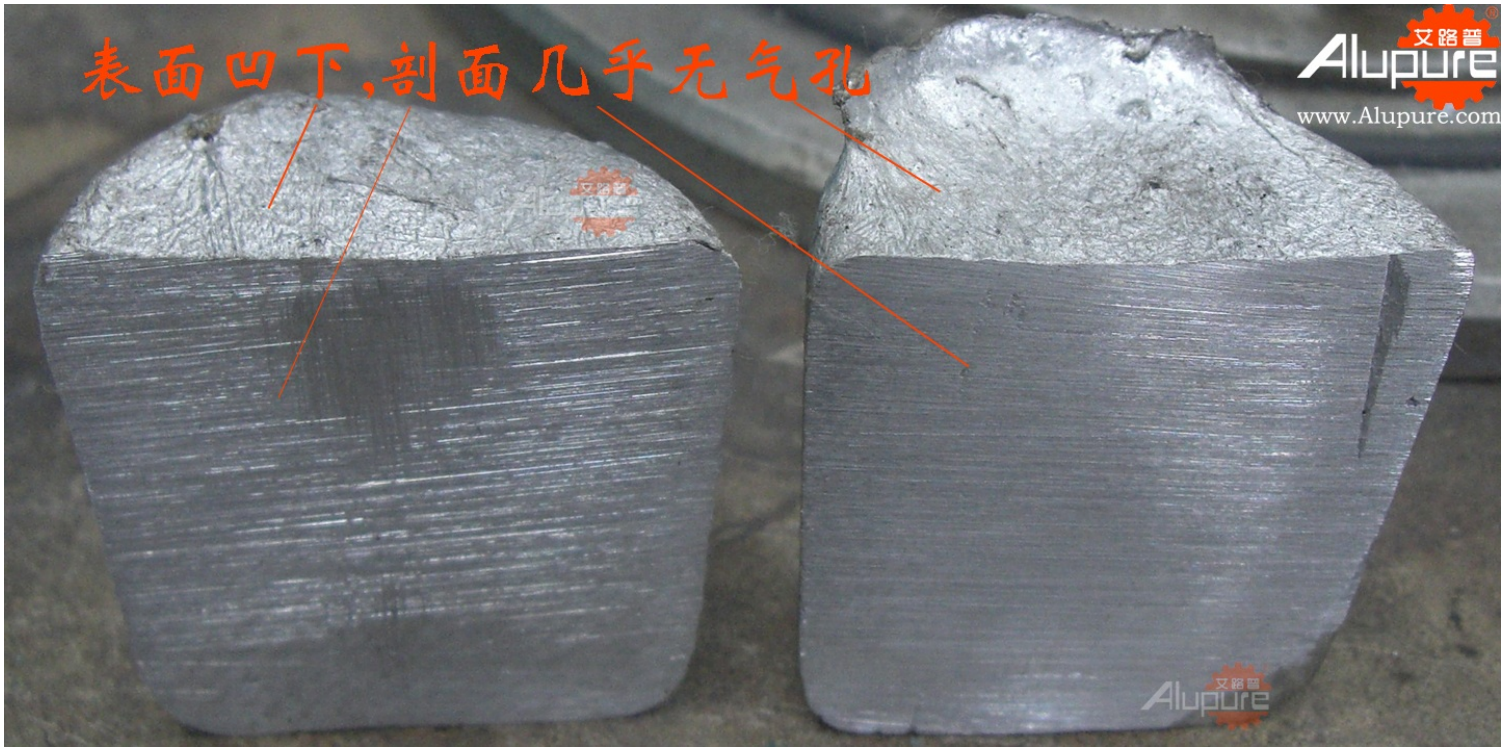

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