

Certificate of Material

Certificate No.: Ms21-081918

Time : 2021-08-19 9:30:41

316
Exact

El	%	+/- 3σ	316
Cr	16.52	0.81	
Mn	0.51	0.50	
Fe	69.9	1.1	
Ni	10.84	0.89	
Cu	ND	<0.080	
Mo	2.19	0.11	

Testing Instrument: Olympus Vanta Element Analyzers

Description: PMI/XRF testing on stainless steel items

Method : Alloy

Daily ID: 18

Elapsed Time: 10 s

Material Specification: Grade 316 stainless steel

Test Results:

All the samples tested are made in stainless steel 316. The testing results are passed.

Material Quality: **Passed**

Date: **August 19, 2021**

Remark: The portable XRF method used to determine the chemical composition of the material is valid for the identification of the principal alloying elements only. In most cases this provides sufficient data to enable a reasonably reliable estimate of the material type (commonly referred to in industry as PMI or positive material identification). This method cannot detect light elements such as carbon and hence the sole analysis should not be used to select materials for applications where the material's strength or carbon content is critical. The results should be considered informative only, and can also be affected by interference from welds, geometry, surface condition and contamination. For detailed steel material identification, either a full chemical analysis using OES or ICP should be performed or supplementary mechanical tests should be performed.