Chronofiable®

Laboratoire Dubois

Alloys composition analysis using the spark and X-rays fluorescence methods

ANALYSES CHIMIQUES
CONTRÔLE DES MATÉRIAUX
ASSISTANCE TECHNICO-LÉGALE
CONTRÔLES HORLOGERS ET MICROTECHNIQUES

The verification of the entrance materials composition may be a key factor in mastering elaboration processes, avoiding rejecting high value added parts.

Laboratoire Dubois owns a spark spectrometer as well as an X-rays fluorescence analyser. Both techniques allow quick measures without previous dissolution of the metal.

Analysis of all elements in a 1.4435 steel. The alloy is perfectly compliant with the specification.

1.4435	Minimum tolerance %	Value obtained %	Maximum tolerance %
Al		0.002	
As		0.011	
C	0	0.025	0.03
Co		0.110	
Cr	17	17.500	19
Cu		0.230	
Fe		64.700	
Mn	0	1.450	2
Mo	2.5	2.720	3
Ni	12.5	12.600	15
P	0	0.031	0.045
S	0	0.001	0.03
Si	0	0.480	1
Sn		0.010	
Ti		0.005	
V		0.058	

Spark OES spectrometry

Configured for the analysis of the main alloys this equipment is used to measure alloy elements as well as impurities. Carbon, sulfur, phosphorus, nitrogen and boron are among the analysable elements.
We can handle samples, from a diameter of ~3 mm on.

X-Rays fluorescence

Non-destructive technique, complementary to spark-OES or SEM-EDX, allows the quick check of the elemental composition. The method is accepted RoHS for compliance controls (Pb, Cd, etc.).

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