

OES-analysis of metals

Get the result the same day



Optical Emission Spectrometer

- Steel
- Aluminium
- Alloys

- Weldability
- Corrosion-Resistance

Why choose an OES-analysis?

An analysis by Optical Emission Spectrometry (OES) supplies valuable documentation regarding:

- Determining material type
- Assessing accordance with material requirements in standards and specifications
- Determining optimum heat treatment and assessing weldability and repair procedures
- Assessing corrosion resistance
- Getting a fast reply.

Technology

Optical Emissions Spectrometry (OES) is a fast and precise method of determining alloy elements and impurities in metal alloys, e.g. steel.

FORCE Technology can analyse low- and micro-alloyed steel, tool steel, stainless steel, cast iron, automat steel and special alloys with titanium, copper, aluminium, nickel or cobalt.

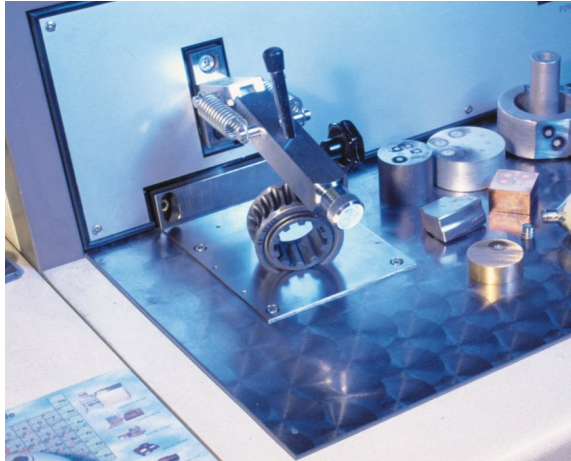


Certified Reference Materials

Accuracy

An OES-analysis has a very high degree of precision and the quality of the analysis is ensured by frequent use of comparable certified reference materials and by participation in inter calibrations (comparison of results with other laboratories). The relative uncertainty is below 3% on most applications.

The OES-analysis at FORCE Technology is accredited by the Danish accreditation body (DANAK), and FORCE Technology is the leading operator in this field in Denmark.



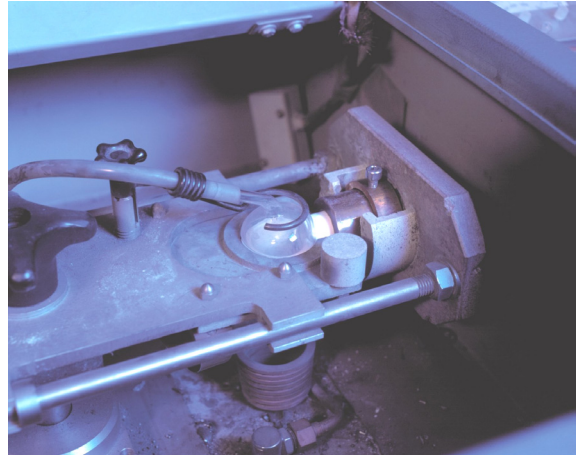
Determination of alloying type

Samples

Samples of varied nature and shape may be analysed. The analysis is always performed after prior surface treatment of the sample. As only a small part of the sample is analysed it is important that this part is homogenous. In certain cases, such as cast iron, the material is melt down before an analysis is made.

Competencies

Over the last 60 years FORCE Technology has been performing specialised work within welding, corrosion and metallurgy. Therefore, FORCE Technology not only analyse, we also have the competency to provide consultancy on the achieved analysis results.



Melting down of a cast iron sample

Analysis by Optical Emission Spectrometry		FORCE TECHNOLOGY	
Division for Materials and Chemical Analysis			
Performed using a SPECTROLAB S instrument according to ASTM E 415 and ASTM E 305 with instrument specific modifications.			
Date	12.03.2004		
Sample	Program FE-10		
Case ID			
Sample ID			
Descrip. :			
C	Si	Mn	P
%	%	%	%
0,21	0,26	1,32	0,017
Al	Co	Cu	Nb
%	%	%	%
0,007	0,008	0,19	0,001
Sn	Mg	As	Zr
%	%	%	%
0,011	0,0003	0,0013	0,0008
Ta	Te	Ni	Fe
%	%	%	%
0,005	<0,001	0,007	97,6

Reporting example

Reporting

The analysis result includes up to 30 alloying elements and are always supplied as a report. For iron-based alloys it is possible to obtain an accredited report.

Get an answer the first day

FORCE Technology aims at providing results to OES-analyses very quickly. In general, the result of an analysis may be obtained the very day we receive the sample. At large assignments, delivery takes place as agreed.

Supplementary services

FORCE Technology offers a wide range of material analyses, such as for metals, plastics, composites and concrete, e.g.:

- X-ray analysis of abrasive dust from samples that cannot be analysed by OES
- Positive material identification (PMI) that may be performed at the customer's premises
- Wet chemical analysis at special requirements to analysis accuracy or detection limit
- Microscopy
- Mechanical testing
- Metallurgical and metallographic examination
- Damage investigation
- Micro element analysis
- Investigations by Scanning Electron Microscope.



Further information:

Ole Bundgaard, tel. (direct) + 45 43 26 75 39, olb@force.dk
 Ole Petersen, tel. (direct) + 45 43 26 74 99, op@force.dk
 Helga Weise, tel. (direct) + 45 43 26 74 25, hw@force.dk

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FORCE Technology USA Inc.
 Tel. +1 713 975 8300
 FORCE Technology Canada Inc.
 Tel. +1 403 286 0606
 FORCE Technology Brazil Ltda.
 Tel. +55 21 2610 7400
 FORCE Technology Netherlands B.V.
 Tel. +31 71 523 5212

FORCE Technology Norway AS
 Claude Monets allé 5
 1338 Sandvika, Norway
 Tel. +47 64 00 35 00
 Fax +47 64 00 35 01
 info@forcetechnology.no
 www.forcetechnology.no

FORCE Technology Sweden AB
 Tallmätargatan 7
 721 34 Västerås, Sweden
 Tel. +46 (0)21 490 3000
 Fax +46 (0)21 490 3001
 info@forcetechnology.se
 www.forcetechnology.se

FORCE Technology
 Main office
 Park Allé 345
 2605 Brøndby, Denmark
 Tel. +45 43 26 70 00
 Fax +45 43 26 70 11
 force@force.dk
 www.force.dk