CISRI NCS

Heavy Metal Elements Analyzer in Food NX-300FA

NCS Testing Technology (Germany) GmbH

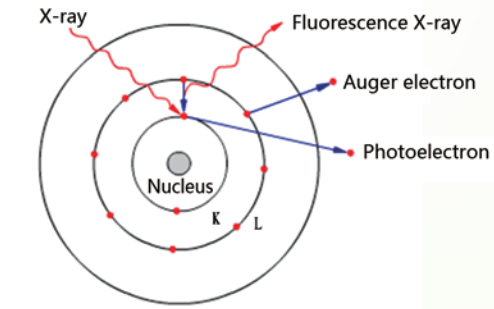
Heavy Metal Elements Analyzer in Food

NX-300FA

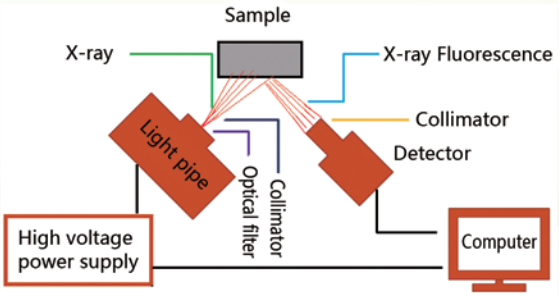
In order to ensure the food safety, NCS Testing Technology Co., Ltd. has developed NX series Heavy Metal Elements Analyzer for the detection of trace heavy metal elements in food.

Equipped with the manipulator automatic sampling system, NX-300FA can make an unattended testing up to 84 samples, meanwhile, it can relieve laboratory personnel from complicated sample-changing process and truly realizes high precision and high efficiency.

Analytical principle



The principle of X-ray fluorescence spectrum analysis is adopted in NX-300FA. The primary X-ray beam, generated by X-ray tube under the excitation of Digital-Control high voltage power, is tailored and restricted to specific spectral by carefully-selected primary filters and optical system to excite sample. The elements measured in sample can generate fluorescent X-ray with characteristic wavelength, which can be captured by high performance FastSDD detector. After that, precise quantification can be finalized by software.



Application fields

NX-300FA can be used to rapidly detect heavy metals such as Cadmium (Cd), Lead (Pb), Arsenic (As) and Selenium (Se) in paddy, rice, wheat, corn, beans and other foods as well as their products. Moreover, it can be applied to the storage, circulation and processing of food products at grain depot, food inspection station, food processing enterprise and research institute. NX-300FA can adapt to the special condition of food procurement with ensuring accuracy and stability of test results.

Instrument feature

- 84 bit automatic sampling system can realize unattended testing up to 84 samples;
- Granular or powdery grain samples can be directly tested without pretreatment;
- There is no need for consumables, liquid and gas assistance or chemical reagents. Only power supply is required and there are no waste water emissions or secondary pollutions to the environment;
- The instrument can be extended to the detection of Cr, Cu, Zn and other heavy metals;
- The automatic sampler and test host can be quickly attached and unattached, facilitating the vehicle transportation via the ordinary car;
- All-in-one machine includes instrument and computer providing the touch screen operation;
- Software operation interface is simple and easy to use, screening and quantitative modes are optioned;
- Software has rating privilege: administrator mode, operator mode;
- Test reports are generated automatically with humanizing report layout and settable Excel format;
- Instrument has audible and visual alarm function, providing data export interface;
- Since the whole machine is provided with threefold X-ray protection measures in terms of maze structure, electronic interlock and software interruption, the operation is safe;
- The software can save test status automatically and is of recovery function after power off;
- The instrument possesses the function of scanning and acquiring sample information via barcode or two-dimensional code and can be accessed to the LMS(laboratory management system) according to customer demands.

Technical parameter

Element	Detection limit	linearity range	Analytical Precision(RSD)
Cd	*≤0.038mg/kg*	*0.038mg/kg~2.6mg/kg*	*≤5%*
Pb	*≤0.15mg/kg*	*0.15mg/kg~2.0mg/kg*	*≤20%*
As	*≤0.1mg/kg*	*0.1mg/kg~2.0mg/kg*	*≤10%*
Se	*≤0.048mg/kg*	*0.048mg/kg~2.0mg/kg*	*≤10%*

- Rapid testing speed: 3 min for the screening of Cd element and 10 minutes for precise measurement. 6 minutes for multi element screening and 20 minutes for precise measurement;
- The absolute difference of two independent determination results does not exceed the mean value of 20%;
- The radiation protection is superior to the standard Health Protection Standards for X-ray Diffraction and Fluorescence Analyzer GBZ115-2002.

Qualification

- A first X-ray fluorescence analysis instrument passes the Applicability Validation for Determination Method of Cadmium Content in Grain issued by the Quality & Standard Center under the State Grain Administration;
- The company has received the Radiation Safety Permit issued by Beijing Environmental Protection Bureau;
- The product has received the qualification of Use Exemption Management for End Users issued by Beijing Environmental Protection Bureau;
- The product has passed the CE certification;
- The company has passed ISO9001 Quality Management System Certification and ISO14001 Environmental Management System Certification;
- The company is granted with the Excellent Scientific & Technological Innovation Enterprise in the Grain and Oil industry by the National Grain and Oils Association

Instrument Configuration

- Maximum 84 bit manipulator automatic sampling system;
- Reusable sample cup;
- X-ray tube: Custom-made tungsten target air-cooled side window X-ray tube, tube voltage 65 kV;
- High voltage power supply: High precision digital control 65kV/100W high voltage power supply, stability of 8-hour in high voltage ≤0.02%;
- Detector: FastSDD detector and its energy resolution 129eV(Mn:Ka, 5.889keV);
- Power: AC220V±10%, 50/60HZ, 2.0A;
- Operating ambient temperature: -20~35℃;
- Dimensions: Host: 600Wx530Dx330H(mm)
  Automatic sampling system: 600Wx530Dx450H(mm);
- Weight: Host: about 30kg
  Automatic sampling system: about 30kg.

Commercial & Sales:

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Website: http://www.ncs-germany.com
E-Mail: info@ncs-germany.com

Manufactured:

NCS Jiangsu Testing Technology Co., Ltd
Adress: No. 158, Qianjin East Road, Kunshan Economic &Technological Development Zone, Jiansu Province, China

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