ISO 11916-2 Soil quality – Determination of selected explosives and related compounds – Part 2: Method using gas chromatography (GC) with electron capture detection (ECD) or mass spectrometric detection (MS)

Instrument: HP 6890 GC with ECD and autosampler or Shimadzu GC/MS system

Abstract

ISO 11916-2:2013 specifies the measurement of explosive and related compounds (nitroaromatics and nitroamines) in soils and soil materials. ISO 11916-2:2013 is intended for the trace analysis of explosives and related compounds by gas chromatography (GC) using electron capture detector(s) (ECD) or a mass spectrometer (MS) as detector.

ISO 11916-2:2013 can be used when reliable and specific identification of the compounds at low detection levels is required, e.g. for the evaluation of the toxic potential of soils contaminated with 2,6-DNT.

Under the conditions specified in ISO 11916-2:2013, concentrations as low as 0,05 mg/kg dry matter can be determined, depending on the substance. Similar compounds may be analysed using this method. This is, however, to be verified experimentally. This method is not suitable for the analysis of hexogen (RDX), octogen (HMX), hexyl, tetryl and nitropenta (PETN).

Compound	Abbreviation	CAS-RN ^a
Nitrobenzene SCIEntIIIC	NBICO	98-95-3) all
1,3,5-Trinitrobenzene ^b	1,3,5-TNB	99-35-4
2-Nitrotoluene	2-NT	88-72-2
3-Nitrotoluene	3-NT	99-08-1
4-Nitrotoluene	4-NT	99-99-0
2,4-Dinitrotoluene	2,4-DNT	121-14-2
2,6-Dinitrotoluene	2,6-DNT	606-20-2
3,4-Dinitrotoluene	3,4-DNT	610-39-9
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7
4-Amino-2,6-dinitrotoluene	4-A-2,6-DNT	1946-51-0
2-Amino-4,6-dinitrotoluene	2-A-4,6-DNT	35572-78-2
a CAS-RN: Chemical Abstract Service-Registry Number.		
b 1,3,5-TNB gave poor interlaboratory trial results and its analysis courses	ld be problematic.	

Table 1 — Selected explosive and related compounds (nitroaromatics and nitroamines) for analysis

Reference: http://www.iso.org/iso/catalogue_detail.htm?csnumber=53532