

MOBILE EXPLOSIVES DETECTOR



For cargo and large vehicles

Based on tagged neutron method



Application

A mobile detector DNT is designed to detect explosives in large cargo (wagons, sea containers) using the tagged neutron method.

- The method of tagged neutrons was tested on the detection of 33 explosives hidden in various objects.
- Identification of the type of explosives is possible.

Certification



Government Decree №969 Certificate №.00076.

Operating principle

- Irradiation of the object of inspection with a flux of fast tagged neutrons with an energy of 14.1 MeV and registration of gamma rays from inelastic scattering reactions.
- Each chemical element has its own characteristic spectrum of gamma radiation, which allows the detection of hazardous substances.
- The method of tagged neutrons allows you to determine the concentration of 25 different chemical elements.
- The source of fast neutrons is a portable neutron generator. Gamma rays are detected by BGO scintillation counters.



Specification

DNT comprises of a neutron inspection module placed on a forklift.



Maximum altitude – 6 m



Technical characteristics

Neutron source	ING-27 portable neutron generator with alpha detector
Neutron Energy	14,1 MeV
Neutron beam intensity	8×10^7 n/s
Number of tagged neutron beams	9
Weight of the neutron module	1300 kg
Dimensions of the neutron module	1380 x 1360 x 1590 mm
Tilt angle of neutron module	45°
Power supply	from a network of 220 V or from the built-in electric generator
Power consumption	no more than 3 kV · A