

WMD-related Dual-Use Items, Materials, Equipment, Goods and Technology

1. Ring Magnets (except those designed for consumer electronics or automobile applications)
2. Hot cells
3. Glove boxes suitable for use with radioactive materials
4. Software for neutronic calculations/modeling;
5. Software for radiation transport calculations/modeling;
6. Software for hydrodynamic calculations/modeling (except those used strictly for civilian purposes, such as but not limited to communal heating utilities);
7. Radiation detection, monitoring and measurement equipment
8. Radiographic detection equipment such as x-ray converters, and storage phosphor image plates (except x-ray equipment specially designed for medical use)
9. Electrolytic cells for fluorine production
10. Particle accelerators
11. Freon and chilled water cooling systems capable of continuous cooling duties of 100,000 BTU/hr (29.3 kW) or greater
12. Hardened steel and tungsten carbide precision ball bearings (3mm or greater diameter)
13. Tributyl phosphate
14. Nitric acid in concentrations of 20 weight percent or greater
15. Fluorine (except those used for strictly civilian purposes, such as refrigerants including freon and fluoride for toothpaste production).
16. Alpha-emitting radionuclides
17. Bellows sealed valves
18. Isostatic presses
19. Bellows manufacturing equipment, including hydraulic forming equipment and bellows forming dies
20. MIG welders (greater than 180 amp-DC)
21. Monel equipment, including valves, piping, tanks and vessels (pipes and valves greater than 8 inch diameter and rated for 500 psi and tanks greater than 500 liters)
22. 304, 316, and austenitic stainless steel plates, valves, piping, tanks and vessels (pipes and valves greater than 8 inch diameter and rated for 500 psi and tanks greater than 500 liters)
23. Electroplating equipment designed for coating parts with nickel or aluminum
24. Vacuum valves, piping, flanges, gaskets and related equipment “specially designed” for use in high-vacuum service (0.1 pascals or lower pressure)
25. Centrifugal multiplane balancing machines
26. Frequency changers capable of operating in the frequency range from 300 up to 600 Hz
27. Mass spectrometers
28. All flash x-ray machines, and “parts” or “components” of pulsed power systems designed thereof, including Marx generators, high power pulse shaping networks, high voltage capacitors, and triggers
29. Electronic equipment of synthesized frequencies within the range of 31,8 GHz or greater and power output 100 milliwatt or greater for time delay generation or time interval measurement, as follows: (1) Digital time delay generators with a resolution of 50 nanoseconds or less over time intervals of 1 microsecond or greater; or (2) Multichannel (three or more) or modular time interval meter and chronometry equipment with resolution of 50 nanoseconds or less over time intervals of 1 microsecond or greater

30. Chromatography and spectrometry analytical instruments
31. Seismic detection equipment or Seismic intrusion detection systems that detect, classify and determine the bearing on the source of a detected signal
32. Radiation hardened TV cameras