



Regulations of the People's Republic of China on Export Control of Missiles and Missile-related Items and Technologies

Article 1 These Regulations are formulated for the purposes of strengthening export control of missiles and missile-related items and technologies, and safeguarding the State security and social and public interests.

Article 2 The export of missiles and missile-related items and technologies referred to in these Regulations means the export for trade of missiles and missile-related equipment, materials and technologies listed in "The Missiles and Missile-related Items and Technologies Export Control List" (hereinafter referred to as the Control List) attached to these Regulations, and the gift to, exhibition in, scientific and technological cooperation with, assistance to, provision of service for as such and other forms of technological transfer thereof to foreign countries and regions.

Article 3 The State shall exercise strict control on the export of missiles and missile-related items and technologies so as to prevent the proliferation of missiles and other delivering systems listed in the Control List that can be used to deliver weapons of mass destruction.

Article 4 The State shall practice a licensing system for the export of missiles and missile-related items and technologies. Without being licensed, no unit or individual shall export missiles and missile-related items and technologies.

Article 5 The export of items and technologies listed in Part I of the Control List shall be subject to the Regulations of the People's Republic of China on Administration of Arms Export and other relevant provisions.

To export items and technologies listed in Part II of the Control List (hereinafter referred to as missile-related items and technologies), the exporter shall follow the examination and approval procedures provided for in Articles 7 to 13 of these Regulations; however, the export of missile-related items and technologies for military purpose shall be subject to the provisions of the preceding paragraph.

Article 6 The receiving party of missile-related items and technologies shall guarantee not to use missile-related items and technologies supplied by China for purposes other than the declared end-use, nor to transfer missile-related items and technologies supplied by China to any third party other than the declared end-user without the consent of the Chinese Government.

Article 7 Exporters of missile-related items and technologies shall register themselves with the competent department in charge of foreign economic relations and trade of the State Council (hereinafter referred to as the competent foreign economic and trade department of the State Council). Without such registration, no unit or individual shall export missile-related items and technologies. The specific measures for such registration shall be formulated by the competent foreign economic and trade department of the State Council.

Article 8 Anyone who intends to export missile-related items and technologies shall apply to the competent foreign economic and trade department of the State Council, fill in the export application

form for missile-related items and technologies (hereinafter referred to as the export application form), and submit the following documents:

- (1) identification of the applicant's legal representative, chief managers and the persons handling the deal;
- (2) duplicates of the contract or agreement;
- (3) technical specifications of the missile-related items and technologies;
- (4) certificates of the end-user and end-use;
- (5) documents of guarantee as defined in Article 6;
- (6) other documents as may be required by the competent foreign economic and trade department of the State Council.

Article 9 An applicant shall truthfully fill in the export application form.

Export application forms shall be uniformly produced by the competent foreign economic and trade department of the State Council.

Article 10 The competent foreign economic and trade department of the State Council shall, from the date of receiving the export application form and the documents set forth in Article 8 of these Regulations, examine the application, or examine the application jointly with other relevant departments of the State Council and relevant departments of the Central Military Commission, and make a decision of approval or denial within 45 working days.

Article 11 Where the export of missile-related items and technologies entails significant impact on the State security, social and public interests, the competent foreign economic and trade department of the State Council shall, jointly with relevant departments, submit the case to the State Council and the Central Military Commission for approval.

Where the export of missile-related items and technologies is submitted to the State Council and the Central Military Commission for approval, the timing restriction set forth in Article 10 of these Regulations shall not be applied.

Article 12 Where an application for the export of missile-related items and technologies is examined and approved, the competent foreign economic and trade department of the State Council shall issue a licence for the export of missile-related items and technologies (hereinafter referred to as an export licence), and notify the Customs in writing.

Article 13 An export licence holder who intends to change the missile-related items and technologies originally applied for export shall return the original export licence and file a new application to obtain a new export licence according to relevant provisions of these Regulations.

Article 14 While exporting missile-related items and technologies, the exporter shall present the export licence to the Customs, complete the customs procedures and accept supervision and control of the Customs in accordance with the provisions of the Customs Law.

Article 15 Where the receiving party contravenes the guarantees made according to the provisions of Article 6 of these Regulations or there is a risk of proliferation of missiles and other delivering systems listed in the Control List that can be used to deliver weapons of mass destruction, the competent foreign economic and trade department of the State Council shall suspend or revoke the export licence granted and notify the Customs in writing.

Article 16 Where the exporter knows or should know that the missile-related items and technologies to be exported will be used by the receiving party directly in its program for developing missiles and other delivering systems listed in the Control List that can be used to deliver weapons of mass destruction, the export shall be subject to the provisions of these Regulations even if the items or technologies are not listed in the Control List.

Article 17 Upon approval by the State Council and the Central Military Commission, the competent foreign economic and trade department of the State Council may, jointly with relevant departments, temporarily decide to exercise export control on specific items and technologies other than those listed in the Control List in accordance with the provisions of these Regulations.

Article 18 Those who export missile-related items and technologies without being licensed, or export missile-related items and technologies beyond the scope of the export licence without authorization, shall be investigated for criminal liability in accordance with the provisions of the criminal law on the crime of smuggling, the crime of illegal business operations, the crime of divulging State secrets or other crimes; if such acts are not serious enough for criminal punishment, by distinguishing different circumstances, they shall be punished in accordance with relevant provisions of the Customs Law, or be given a warning, confiscated of their illegal income, and fined not less than one time but not more than five times the illegal income by the competent foreign economic and trade department of the State Council; the competent foreign economic and trade department of the State Council may concurrently suspend or even revoke the licensing for their foreign trade operations.

Article 19 Those who forge, alter, buy or sell the licence for the export of missile-related items and technologies shall be investigated for criminal liability in accordance with the provisions of the criminal law on the crime of illegal business operations or the crime of forging, altering, buying or selling official documents, certificates or seals of a State organ; if such acts are not serious enough for criminal punishment, they shall be punished in accordance with relevant provisions of the Customs Law, and the competent foreign economic and trade department of the State Council may concurrently revoke the licensing for their foreign trade operations.

Article 20 Where a license for the export of missile-related items and technologies is obtained by fraud or other illegal means, the competent foreign economic and trade department of the State Council shall revoke such an export license, confiscate the illegal income, impose a fine of not more than the illegal income, and suspend or even revoke the licensing for their foreign trade operations.

Article 21 Where, in violation of Article 7 of these Regulations, the export of missile-related items and technologies is operated without registration, the competent foreign economic and trade department of the State Council shall ban such illegal activities according to law, and relevant competent departments of the State shall impose punishment thereon in accordance with relevant laws and administrative regulations.

Article 22 Where the State functionaries in charge of control on the export of missile-related items and technologies abuse their powers, neglect their duties or extort or accept money or properties from others by taking advantage of their positions, they shall be investigated for criminal liability in accordance with the provisions of the criminal law on the crime of abuse of power, the crime of neglect of duties, the crime of accepting bribes and other crimes; if such acts are not serious enough for criminal punishment, they shall be given administrative sanctions according to law.

Article 23 In light of actual situations, the competent foreign economic and trade department of the State Council may, jointly with relevant departments, amend the Control List and submit it to the State Council and the Central Military Commission for approval before implementation.

Article 24 These Regulations shall be effective as of the date of promulgation.

ANNEX

THE MISSILES AND MISSILE-RELATED ITEMS AND TECHNOLOGIES EXPORT CONTROL LIST

1. INTRODUCTION

(1) Part 1 of this List includes missiles and other delivery systems (including ballistic missiles, cruise missiles, rockets and unmanned air vehicles) as well as their specially designed items and technologies. Part 2 includes items and technologies related to Item 1 of Part 1.

(2) If a Part 1 item is included in a system, that system will also be considered as a Part 1 item, except when the incorporated item cannot be separated, removed or duplicated and the system is designed for civilian uses, where the item will be considered as a Part 2 item.

(3) All items listed in this List include their directly related technologies.

2. DEFINITIONS

For the purpose of this List, the following definitions apply:

(1) "Technology" means specific information which is required for the "development", "production" or "use" of a product. The information may take the form of "technical data" or "technical assistance". But "technology" does not include technology "in the public domain" nor "basic scientific research".

(a) "In the public domain" as it applies to this List means technology which has been made available without restrictions upon its further dissemination. (Copyright restrictions do not remove technology from being "in the public domain".)

(b) "Basic scientific research" means experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena and observable facts, not primarily directed towards a specific practical aim or objective.

(2) "Development" is related to all phases prior to "production" such as:

- (a) Design
- (b) Design research
- (c) Design analysis
- (d) Design concepts
- (e) Assembly and testing of prototypes
- (f) Pilot production schemes
- (g) Design data
- (h) Process of transforming design data into a product
- (i) Configuration design
- (j) Integration system design
- (k) Layouts

(3) "Production" means all production phases such as:

- (a) Production engineering
- (b) Manufacture
- (c) Integration
- (d) Assembly
- (e) Inspection
- (f) Testing
- (g) Quality assurance

(4) "Use" means:

- (a) Operation

(b) Installation (including on-site installation)

(c) Maintenance

(d) Repair

(e) Overhaul

(f) Refurbishing

(5) "Technical data" may take forms such as:

(a) Blueprints

(b) Plans

(c) Diagrams

(d) Models

(e) Formulae

(f) Engineering designs and specifications

(g) Manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories.

(6) "Technical assistance" may take forms such as:

(a) Instruction

(b) Skills

(c) Training

(d) Working knowledge

(e) Consulting services

(7) "Production facilities" means equipment and specially designed software therefor integrated into installations for "development" or for one or more phases of "production".

(8) "Production equipment" means tooling, templates, jigs, mandrels, moulds, dies, fixtures, alignment mechanisms, test equipment, other machinery and components therefor, limited to those specially designed or modified for "development" or for one or more phases of "production".

PART I

1. Complete ballistic missiles, space launch vehicles, sounding rockets, cruise missile and unmanned air vehicles that can be used to deliver at least a 500 kg payload to a range of at least 300 km as well as the specially designed production facilities therefor.

2. The following items usable in the systems in Item 1:

(1) Individual stages of a ballistic missile;

(2) Individual stages of a rocket;

(3) Reentry vehicles of missiles;

(4) Heat shields and components fabricated of ceramic materials used in Subitem (3);

(5) Heat shields and components fabricated of ablative materials used in Subitem (3);

(6) Heat sinks and components fabricated of light-weight, high heat capacity materials used in

Subitem (3);

(7) Electronic equipment specially designed for Subitem (3);

(8) Storable liquid propellant rocket engines, having a thrust force of 90 kN or greater;

(9) Solid propellant rocket engines, having a total impulse capacity of 1100 kN·s or greater;

(10) Guidance sets capable of achieving system accuracy of 10 km or less (CEP) for ballistic missiles with a range of 300 km;

(11) Thrust vector control sub-systems;

(12) Warhead safing, arming, fuzing, and firing mechanisms;

(13) Production facilities and equipments designed for Subitems (1) to (12).

3. Interstage mechanisms for space launch vehicles and the specially designed production equipment therefor.

4. Rocket motor cases and the specially designed production equipment therefor.

5. Hydraulic, mechanical, electro-optical, or electro-mechanical flight control systems specially designed or modified for the systems in Item 1 of Part I.

6. Attitude control equipment specially designed or modified for the systems in Item 1 of Part I.

7. Design technology for integration of air vehicle fuselage, propulsion system and lifting control surfaces to optimize aerodynamic performance throughout the flight regime of an unmanned air vehicle.

8. Design technology for integration of the guidance, flight control, and propulsion data into a flight management system for optimization of trajectory of ballistic missiles or space launch vehicles.

9. Passive interferometer equipment usable in the systems in Item 1.

10. Apparatus and devices designed or modified for the handling, control, activation and launching of the systems in Item 1.

11. Vehicles designed or modified for the transport, handling, control, activation and launching of the systems in Item 1.

12. Gravity meters, gravity gradiometers, and specially designed components therefor, for airborne or marine use, and having a static or operational accuracy of one milligal or better, with a time to steady-state registration of two minutes or less;

13. Precision tracking systems:

(1) Tracking systems which use a translator installed on the rocket system or unmanned air vehicle in conjunction with either surface or airborne references or navigation satellite systems to provide real-time measurements of in-flight position and velocity;

(2) Software which processes post-flight, recorded data, enabling determination of vehicle position throughout its flight path.

14. Structure specially designed for reduced radar reflectivity.

15. Structural material specially designed for reduced radar reflectivity.

16. Coatings specially designed for reduced radar reflectivity.

17. Coatings specially designed for reduced optical reflectivity or emissivity.

18. Production equipment, technology and specially designed software usable in Items 14 to 17

above.

19. Technology and specially designed software for reduced radar reflectivity, ultraviolet/infrared signatures or acoustic signatures.

PART II

1. Reentry Vehicle Components and Technology Thereof

- (1) Design and manufacturing technology for ceramic heat shields;
- (2) Design and manufacturing technology for ablative heat shields;
- (3) Design and manufacturing technology for heat sinks and components thereof;
- (4) Structure for protection against electromagnetic pulse (EMP) and X-rays and shock wave and combined blast and thermal effects:
 - (a) Radiation-hardened microcircuits and detectors;
 - (b) Hardened radome structure designed to withstand a combined thermal shock greater than 418 J/cm² accompanied by a peak over pressure of greater than 50 kPa.
- (5) Design technology for radiation hardening;
- (6) Design technology for hardened structure.

2. Propulsion Components and Technology Thereof

- (1) Lightweight turbojet engines that are small and fuel efficient;
- (2) Lightweight turbofan engines that are small and fuel efficient;
- (3) Lightweight turbocompound engines that are small and fuel efficient;
- (4) Ramjet engines;
- (5) Scramjet engines;
- (6) Pulse jet engines;
- (7) Combined cycle engines;
- (8) Devices to regulate combustion for the above Subitems (4) to (7);
- (9) Liquid and slurry propellant control systems, and specially designed components thereof, designed or modified to operate in vibration environments of more than 10 g (RMS) between 20 Hz and 2,000 Hz:
 - (a) Servo valves designed for flow rates of 24 liters per minute or greater, at an absolute pressure of 7,000 kPa or greater, that have an actuator response time of less than 100 microseconds;
 - (b) Pumps, for liquid propellants, with shaft speeds equal to or greater than 8,000 RPM or with discharge pressures equal to or greater than 7,000 kPa.
- (10) Production facilities specially designed for the above Subitems (1) to (9).

3. Liquid Propellants

- (1) Hydrazine with a concentration of more than 70 percent;
- (2) Unsymmetric dimethylhydrazine (UDMH);
- (3) Monomethylhydrazine (MMH);

- (4) Mixed amine;
- (5) Dinitrogen tetroxide;
- (6) Red Fuming Nitric Acid.

4. Solid Propellant and Propellant Constituents

(1) Metal fuels with particle sizes less than 500 μm , whether spherical, atomized, spheroidal, flaked or ground, consisting of 97 percent by weight or greater of any of the following metal and alloys of these:

- (a) Zirconium;
- (b) Boron;
- (c) Magnesium;
- (d) Titanium;
- (e) Uranium;
- (f) Tungsten;
- (g) Zinc;
- (h) Cerium.

(2) Ammonium perchlorate with particle sizes less than 500 μm ;

(3) Spherical aluminum powder meeting the following requirements:

- (a) With particle of uniform diameter;
- (b) With aluminum content of 97 percent or greater;
- (c) With diameter of less than 500 μm .
- (4) Boron Slurry, having an energy density of more than $40 \times 10^6 \text{ J/kg}$;

(5) Nitro-amines:

- (a) Cyclotetramethylene-tetranitramene (HMX);
- (b) Cyclotrimethylene-trinitramine (RDX).

(6) Composite Propellants:

- (a) Molded colloid propellants;
- (b) Propellant including nitrate bonding agents and with an aluminum (particle) content of 5 percent or greater.

(7) Polymeric substances:

- (a) Carboxyl-terminated polybutadiene (CTPB);
- (b) Hydroxy-terminated polybutadiene (HTPB).

(8) Triethylamine as an igniting agent.

5. Guidance and Control Set, Components and Related Technologies

(1) Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestial bodies or satellites;

- (2) Flight control software and related test software;
- (3) Gyro stability platform;
- (4) Automatic pilots for UAV;
- (5) Gyros with a rated drift rate stability of less than 0.5 degree per hour;
- (6) Test table for inertial platform (including high-accuracy centrifuges and rotating table);
- (7) Inertial Measurement Unit (IMU) tester;
- (8) Inertial Measurement Unit (IMU) stable element handling fixture;
- (9) Inertial Measurement Unit (IMU) platform balance fixture;
- (10) Tester for gyro tuning;
- (11) Tester for gyro dynamic balance;
- (12) Gyro run-in/motor test station;
- (13) Gyro evacuation and filling station;
- (14) Centrifuge fixture for gyro bearings;
- (15) Rectangular scatterometer for ring laser gyro production;
- (16) Polarity scatterometer for ring laser gyro production;
- (17) Reflectometer for ring laser gyro production;
- (18) Surface profilometer for ring laser gyro production;
- (19) Accelerometers with a proportional error of 0.25 percent or less;
- (20) Accelerometer test station;
- (21) Accelerometer axis align station;
- (22) Specially designed test, calibration, and alignment equipment for gyro or accelerometer.

6. Target Detection System and Related Electronics

- (1) Radar systems;
- (2) Altimeters;
- (3) Terrain contour mapping equipment;
- (4) Scene mapping and correlation (both digital and analog) equipment;
- (5) Imaging sensor equipment;
- (6) Processors and software specially designed for processing navigation information;
- (7) Electronic devices and components removed of conductive heat;
- (8) Radiation-hardened electronic devices and components;
- (9) Electronic assemblies and components operating at temperatures in excess of 125 °C for a short period of time;
- (10) Electronic devices and components with specially designed integrated support;
- (11) Telemetry equipment and related technologies;

(12) Telemetry and telecontrol ground equipment;

(13) Analogue computers and digital computers having either of the following characteristics:

(a) Rated for continuous operation at temperatures from below minus 45 °C to above plus 55 °C;

(b) Designed as ruggedized or radiation hardened.

(14) Analogue-to-digital converter having one of the following characteristics:

(a) Rated for operation at temperatures from below minus 54 °C to above plus 125 °C, and

(b) Designed to meet military specifications for ruggedized equipment; or

(c) Designed or modified for military use or designed as radiation hardened, and having one of the following characteristics:

<1> Converting at a rate of over 200000 times (complete conversion) per second under rated accuracy;

<2> With accuracy exceeding 1/10000 of the whole range in the rated temperature scope;

<3> With quality factor of over 1×10^8 (complete conversion times per second divided by accuracy);

<4> The inbuilt microcircuits having the following characteristics:

(A) The maximum converting time is less than 20 microseconds under maximum resolution, and

(B) The rated nonlinearity is better than 0.025 percent of the range in rated temperature scope.

(15) Design technology for protection of avionics and electrical subsystems against electromagnetic pulse and electromagnetic interference hazards from external sources:

(a) Design technology for shielding systems;

(b) Design technology for the configuration of hardened electrical circuits and subsystems;

(c) Determination of hardening criteria for the above.

7. Material

(1) Structural composites, including composite structures, laminates, and manufactures thereof, and resin impregnated fibre prepregs and metal coated fibre preforms therefor, made with either organic matrix or metal matrix utilizing fibrous or filamentary reinforcements having a specific tensile strength greater than 7.62×10^4 m and a specific modulus greater than 3.18×10^6 m:

(a) Polyimide composite;

(b) Polyamide composite;

(c) Polycarbonate composite;

(d) Quartz-fibre-reinforced composite;

(e) Carbon-fibre-reinforced composite;

(f) Boron-fibre-reinforced composite;

(g) Magnesium matrix composite;

(h) Titanium matrix composite.

(2) Ceramic composite materials with dielectric constant less than 6 at frequencies from 100 Hz to 10,000 MHz;

(3) Fine grain bulk artificial graphites having the following features measured at 20 °C:

- (a) With a bulk density of at least 1.72 g/cm³;
- (b) With a tension rupture strain of at least 0.7 percent;
- (c) With a heat expansion coefficient of at least 2.75×10^{-6} (measured at temperatures from 20 °C to 982 °C).

(4) Resaturated pyrolyzed carbon-carbon materials;

(5) Special Steel:

Titanium-stabilized duplex stainless steel (Ti-DSS) having the following characteristics:

- (a) Containing 17.0 to 26.5 weight percent chromium and 4.5 to 7.0 weight percent nickel;
- (b) Having a ferritic-austenitic microstructure (also referred to as a two-phase microstructure) of which at least 10 percent is austenite by volume;
- (c) Having any of the following forms:

<1> Ingots or bars having a size of 100 mm or more in each dimension;

<2> Sheets having a width of 600 mm or more and a thickness of 3 mm or less;

<3> Tubes having an outer diameter of 600 mm or more and a wall thickness of 3 mm or less.

(6) Ceramic heat shielding material;

(7) Ablative heat shielding material.

8. Design and Test Equipment and Technologies Related to Ballistic Missiles and Rockets

- (1) Specially designed software, or analogue and digital computers thereof, for modeling, simulation, or design integration of the systems;
- (2) Vibration test systems capable of providing a force of 100kN or more and incorporating a digital controller, as well as specially designed vibration test auxiliaries and software;
- (3) Wind-tunnel for supersonic (Mach 1.4 to 5) or hypersonic (Mach 5 to 15) speeds except those specially designed for teaching and those with the test area dimensions smaller than 25 cm (measured internally);
- (4) Test benches which have the capacity to handle solid or liquid propellant rocket motors of more than 90 kN of thrust, or which are capable of simultaneously measuring the three axial thrust components.

9. Production Equipment and Production Technology

(1) Equipment for production of solid propellants listed in Item 4 of Part II:

(a) Batch mixers having:

<1> A total volumetric capacity of 110 litres or more; and

<2> At least one mixing/kneading shaft mounted off centre.

(b) Continuous mixers having:

<1> Two or more mixing/kneading shafts; and

<2> Capability to open the mixing chamber.

(c) Equipment for the production of atomized or spherical metallic powder in a controlled environment;

- (d) Fluid energy mills;
 - (e) Handling equipment for production of solid propellant;
 - (f) Curing equipment for production of solid propellant;
 - (g) Casting equipment for production of solid propellant;
 - (h) Pressing equipment for production of solid propellant;
 - (i) Acceptance testing equipment for production of solid propellant;
 - (j) Machining equipment for production of solid propellant;
 - (k) Extruding equipment for production of solid propellant.
- (2) Equipment for producing liquid propellant in Item 3 of Part II:
- (a) Handling equipment for production of liquid propellant;
 - (b) Production equipment for liquid propellant;
 - (c) Acceptance testing equipment for production of liquid propellant.
- (3) Pyrolytic deposition and densification equipment and technology
- (a) Technology for producing pyrolytically derived materials formed on a mould, mandrel or other substrate from precursor gases which decompose at temperatures from 1,300 °C to 2,900 °C and at pressures of 130 Pa to 20 kPa, including technology for the composition of precursor gases, flow-rates and process control schedules and parameters;
 - (b) Specially designed nozzles for the above processes;
 - (c) Isostatic presses having all of the following characteristics:
 - <1> Maximum working pressure of 69 MPa or greater;
 - <2> Designed to achieve and maintain a controlled thermal environment of 600 °C or greater, and
 - <3> Possessing a chamber cavity with an inside diameter of 254 mm or greater.
 - (d) Chemical vapor deposition furnaces for the densification of carbon-carbon composites;
 - (e) Pyrolytic deposition and densification process controls equipment and specially designed software therefor.
- (4) Equipment and technology for production of composite component:
- (a) Filament winding machines coordinated and programmed in three or more axes, and specially designed computers and software thereof;
 - (b) Tape-laying machines coordinated and programmed in two or more axes, and specially designed software thereof;
 - (c) Adapters and modification kits of weaving machines for fibre structure composites;
 - (d) Technical data and procedures for the regulation of temperature, pressures or atmosphere in autoclaves or hydroclaves;
 - (e) Equipment for converting polymeric fibres (such as polyacrylonitrile, rayon or polycarbosilane) including special provision to strain the fibre during heating;
 - (f) Equipment for the vapor deposition of elements (or compounds) on heated filament substrates;
 - (g) Equipment for the wet-spinning of refractory ceramics (such as aluminium oxide);

- (h) Equipment for special fibre surface treatment;
- (i) Equipment for producing prepregs and preforms;
- (j) Moulds, mandrels, dies, fixtures and tooling for the preform pressing, curing, casting, sintering or bonding of composite structures, laminates and manufactures thereof.

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