3. *Substrate temperature;*
4. *Time-temperature-pressure cycles;*
5. *Gas control and part manipulation*

b. *For Thermal Evaporation - Physical Vapour Deposition:*
1. *Ingot or coating material source composition;*
2. *Substrate temperature;*
3. *Reactive gas composition;*
4. *Ingot feed rate or material vaporisation rate;*
5. *Time-temperature-pressure cycles;*
6. *Beam and part manipulation;*
7. *"Laser" parameters, as follows:*
   a) *Wave length;*
   b) *Power density;*
   c) *Pulse length;*
   d) *Repetition ratio;*
   e) *Source;*
   f) *Substrate orientation;*

c. *For Pack Cementation:*
1. *Pack composition and formulation;*
2. *Carrier gas composition;*
3. *Time-temperature-pressure cycles;*

d. *For Plasma Spraying:*
1. *Powder composition, preparation and size distributions;*
2. *Feed gas composition and parameters;*
3. *Substrate temperature;*
4. *Gun power parameters;*
5. *Spray distance;*
6. *Spray angle;*
7. *Cover gas composition, pressure and flow rates;*
8. *Gun control and part manipulation;*

e. *For Sputter Deposition:*
1. *Target composition and fabrication;*
2. *Geometrical positioning of part and target;*
3. *Reactive gas composition;*
4. *Electrical bias;*
5. *Time-temperature-pressure cycles;*
6. *Triode power;*
7. *Part manipulation;*

f. *For ion Implantation:*
1. *Beam control and part manipulation;*
2. *Ion source design details;*
3. *Control techniques for ion beam and deposition rate parameters;*
4. *Time-temperature-pressure cycles.*

g. *For Ion Plating:*
1. *Beam control and part manipulation;*
2. *Ion source design details;*
3. *Control techniques for ion beam and deposition rate parameters;*
4. *Time-temperature-pressure cycles;*
5. *Coating material feed rate and vaporisation rate;*
6. *Substrate temperature;*
7. *Substrate bias parameters.*

Category 1030: Electronics

1031. Systems, Equipment and Components

Notes:
1. *The control status of equipment and components described in 1031., other than those described in 1031.1.a.3. to 1031.1.a.10. or 1031.1.a.12., which are specially designed for or which have the same functional characteristics as other equipment is determined by the control status of the other equipment.*
2. *The control status of integrated circuits described in 1031.1.a.3. to 1031.1.a.9. or 1031.1.a.12. which are unalterably programmed or designed for a specific function for another equipment is determined by the control status of the other equipment.*

   N.B.:
   When the manufacturer or applicant cannot determine the control status of the other equipment, the control status of the integrated circuits is determined in 1031.1.a.3. to 1031.1.a.9. or 1031.1.a.12.
   If the integrated circuit is a silicon-based "microcomputer microcircuit" or microcontroller microcircuit described in 1031.1.a.3. having an operand (data) word length of 8 bit or less, the control status of the integrated circuit is determined in 1031.1.a.3.

1. Electronic components, as follows:

a. General purpose integrated circuits, as follows:

Notes:
1. *The control status of wafers (finished or unfinished), in which the function has been determined, is to be evaluated against the parameters of 1031.1.a.*
2. *Integrated circuits include the following types:*
   "Monolithic integrated circuits";
   "Hybrid integrated circuits";
   "Multichip integrated circuits";
   "Film type integrated circuits", including silicon-on-sapphire integrated circuits;
   "Optical integrated circuits".

1. Integrated circuits, designed or rated as radiation hardened to withstand any of the following:
   a) A total dose of 5×10^3 Gy (Si) or higher; **or**
   b) A dose rate upset of 5×10^6 Gy (Si)/s or higher;
2. Integrated circuits described in 1031.1.a.3 to 1031.1.a.10. or 1031.1.a.12., EEPROMs, flash memories and SRAMs, having any of the following:
   a) Rated for operation at an ambient temperature above 398 K (+125°C);
   b) Rated for operation at an ambient temperature below 218 K (-55°C); **or**
   c) Rated for operation over the entire ambient temperature range from 218 K (-55°C) to 398 K (+125°C);

   Note:
   1031.1.a.2. does not apply to integrated circuits for civil automobile or railway train applications.

1. a. 3. "Microprocessor microcircuits", "microcomputer microcircuits" and microcontroller microcircuits, having any of the following:

   Note:
   1031.1.a.3. includes digital signal processors, digital array processors and digital coprocessors.

   a) A "composite theoretical performance ("CTP") of 260 million theoretical operations per second (Mtops) or more and an arithmetic logic unit with an access width of 32 bit or more;
   b) Manufactured from a compound semiconductor and operating at a clock frequency exceeding 40 MHz; **or**
   c) More than one data or instruction bus or serial communication port for external interconnection in a parallel processor with a transfer rate exceeding 2.5 Mbyte/s;
4. Storage integrated circuits manufactured from a compound semiconductor;
5. Analogue-to-digital and digital-to-analogue converter integrated circuits, as follows:
   a) Analogue-to-digital converters having any of the following: