COMMODITY IDENTIFICATION

Kiev, Spring University, May 20-24, 2019

Classification – How to Proceed

The control and classification of an item (also known as rating) pursuant to Annex I is **based solely on a technical and objective interpretation of the text of the respective item entry**.

Items are considered on their own merits regardless of whether they are delivered as a main item (e.g. a machine tool), as a part of a system or unit (e.g. pump), as a component that is integrated in or added to another item (e.g. an A/D or D/A converter), or as a specific material (e.g. zirconium or a chemical).

An item is controlled if it (or its description) corresponds to an entry in the List.

Challenges to product rating

Control lists can be **huge** and **complex** (e.g. the WA lists)

Information may be imperfect and scarce:

- If the exporter is not the manufacturer, they may not know technical information
- If case has been referred by customs, they might have nothing more than the physical item

In spite of best efforts in their drafting, the **lists can be ambiguous or** otherwise **open to interpretation**.

Different regime controls may have **different specifications** for similar items; hence the **importance of a single consolidated list** (e.g. EU Common List)

Classification – How to Proceed

To determine if an item is controlled, the following assessment should be undertaken:

- Which Category may control this item?
- Which entry could apply?
- Which technical characteristics are used in this entry to describe the item?
- Which technical characteristics does the export item meet?
- Do the characteristics match?

If so, the item is subject to control.

One example EU Dual-use Control List

Technical Categories

- *0 - Nuclear materials, facilities, and equipment*
- *1 – Special materials and related equipment*
- *2 - Materials processing*
- *3 - Electronics*
- *4 - Computers*
- *5 - Telecommunications and information security*
- *6 - Sensors and lasers*
- *7 - Navigation and avionics*
- *8 - Marine*
- *9 – Aerospace and propulsion.*

6 A 007

Multilateral & Unilateral Controls

000 – 099 Wassenaar Arrangement.
100 – 199 Missile Tech Control Reg.
200 – 299 Nuclear Suppliers Group.
300 – 399 Australia Group.
400 – 499 Chemical Weapons Conv.
500 – 899 Reserved.
900 – 999 Unilateral Controls.

Product Groups

- A - Equipment, Assemblies and Components
- B - Production and Test Equipment
- C - Materials
- D - Software
- E - Technology

QUIZ

Many precursors are widely-traded chemicals with a range of legitimate applications, while others trade normally in only small quantities

- Triethanolamine, CAS 102-71-6. Category and product group ?

Many dual-use materials may be subject to strategic trade controls if they meet certain technical specifications.

- Carbon fibres. Category and product group ?

- CCD Sensors. Category and product group ?

Quiz

Equipment with legitimate commercial uses that can also be used in the development, production, or use of WMD, conventional weapons, or delivery systems

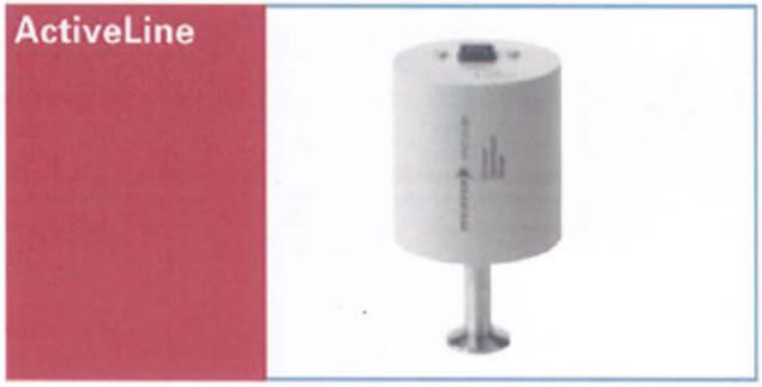
- Valve. Category and product group?

- Unmanned Aerial Vehicle. Category and product group?

Classification – Guided Example

Example 1: Transducer CRM 274

ActiveLine **Active capacitive transmitters**
($1 \cdot 10^{-5}$ - 1100 mbar)
Active capacitive transmitter CMR 271
Active capacitive transmitter CMR 272
Active capacitive transmitter CMR 273
Active capacitive transmitter CMR 274
Active capacitive transmitter CMR 275



- Measurement range from 0.2 mbar to 2200 mbar (1 mbar)
- Pressure measurement independent of type of gas
- Corrosion-resistant

Classification – Guided Example

Technical data	Active capacitive transmitter CMR 271	Active capacitive transmitter CMR 272	Active capacitive transmitter CMR 273	Active capacitive transmitter CMR 274	Active capacitive transmitter CMR 275
Resolution	0.0015 % F.S.	0.0015 % F.S.	0.0015 % F.S.	0.0025 % F.S.	0.0025 % F.S.
Output signal: Sensor error below	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V
Output signal: Pressure range	1.0-9.8 V	1.0-9.8 V	1.0-9.8 V	1.0-9.8 V	1.0-9.8 V
Output signal: Minimum load	10 kOhm	10 kOhm	10 kOhm	10 kOhm	10 kOhm
Bakeout temperature max. at the flange	90 °C	90 °C	90 °C	90 °C	90 °C
Pressure max.	3 bar	2 bar	2 bar	2 bar	2 bar
Accuracy	0.15 % of reading	0.15 % of reading	0.15 % of reading	0.15 % of reading	0.15 % of reading
Membrane and measuring chamber	Al_2O_3, Vacon 70	Al_2O_3, Vacon 70	Al_2O_3, Vacon 70	Al_2O_3, Vacon 70	Al_2O_3, Vacon 70
Measurement range max.	1100 mbar	110 mbar	11 mbar	1.1 mbar	0.11 mbar
Measurement range min.	$1 \cdot 10^{-1}$ mbar	$1 \cdot 10^{-2}$ mbar	$1 \cdot 10^{-3}$ mbar	$1 \cdot 10^{-4}$ mbar	$1 \cdot 10^{-5}$ mbar
Sensor cable length	65 m	65 m	65 m	65 m	65 m
Pipe and flange	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Temperature: Operating	+15 - +40 °C	+15 - +40 °C	+15 - +40 °C	+15 - +40 °C	+15 - +40 °C
Temperature: Storage	-40 - +65 °C	-40 - +65 °C	-40 - +65 °C	-40 - +65 °C	-40 - +65 °C
Temperature effect: on span	0.01 % of reading/°C	0.01 % of reading/°C	0.01 % of reading/°C	0.01 % of reading/°C	0.01 % of reading/°C
Temperature effect: on zero	0.0025 % F.S./°C	0.0025 % F.S./°C	0.0025 % F.S./°C	0.0025 % F.S./°C	0.0065 % F.S./°C
Temperature stabilization	45 °C	45 °C	45 °C	45 °C	45 °C
Supply: Voltage	18-30 V DC	18-30 V DC	18-30 V DC	18-30 V DC	18-30 V DC
Supply: Power consumption max.	7.5 W	7.5 W	7.5 W	7.5 W	7.5 W

Classification – Guided Example

For the classification of this transducer we will proceed along the following steps as explained earlier:

- Which Category may control this item?
- Which entry could apply?
- Which technical characteristics are used in this entry to describe the item?
- Which technical characteristics does the export item meet?
- Do the characteristics match?

Classification – Guided Example

2B230

All types of 'pressure transducers' capable of measuring absolute pressures and having all of the following:

a. Pressure sensing elements made of or protected by aluminium, aluminium alloy, aluminum oxide (alumina or sapphire), nickel, nickel alloy with more than 60 % nickel by weight, or fully fluorinated hydrocarbon polymers;

b. Seals, if any, essential for sealing the pressure sensing element, and in direct contact with the process medium, made of or protected by aluminium, aluminium alloy, aluminum oxide (alumina or sapphire), nickel, nickel alloy with more than 60 % nickel by weight, or fully fluorinated hydrocarbon polymers; and

c. Having either of the following characteristics:
   1. A full scale of less than 13 kPa and an 'accuracy' of better than ± 1 % of full-scale; or
   2. A full scale of 13 kPa or greater and an 'accuracy' of better than ± 130 Pa when measured at 13 kPa.

Technical Notes:

In 2B230 'pressure transducer' means *a device* that converts *a pressure* measurement into *a signal*.
For the purposes of 2B230, 'accuracy' includes non-linearity, hysteresis and repeatability at ambient *temperature*.

Classification – Guided Example

2B230 Assessment

Entry number	Technical specifications	Regulation (EC) N 1382 / 2014	Critical specification correlated
2B230	Absolute pressure transducer	All types of 'pressure transducers' capable of measuring absolute pressures	Condition fulfilled
2B230 a.	Material of flange and pipes: Stainless steel	. Pressure sensing elements made of or protected by - nickel, nickel alloy with more than 60 % nickel by weight - or fully fluorinated hydrocarbon polymers	Possible controlled Items but difficult to identify without more information about nickel rate contents or presence of fluoropolymer in sensing elements. XRF metal analysing on the welded (?) flange: Result: 316ss Technical sheet doesn't mention the sensors material. The condition might or might not be fulfilled

Classification – Guided Example

Entry number	Technical specifications	Regulation (EC) N 1382 / 2014	Critical specification correlated
2B230 b.	Material of flange and pipes: Stainless steel	Seals, if any, essential for sealing the pressure sensing element - made of or protected by - nickel, nickel alloy with more than 60 % nickel by weight – or fully fluorinated hydrocarbon polymers	Possible controlled items but difficult to identify without more information about material of seals. XRF metal analysing on the welded flange: Result: 316ss Technical sheet doesn't mention the seals material. The condition might or might not be fulfilled
2B230 c.	Full scale ranges: 1,1 mbar. Accuracy: 0.15% Reading. 1,1 mbar = 0,11 KPa.	1. A full scale of less than 13 kPa and an 'accuracy' of better than ± 1 % of full-scale; or 2. A full scale of 13 kPa or greater and an 'accuracy' of better than ± 130 Pa when measured at 13 kPa.	Full scale < 0,11 KPa < 13 KPa Accuracy = 0, 15% reading. Superior accuracy than 1%. Accuracy within the controlled ranges. Condition is fulfilled

Conclusion:

The transducer is controlled if the sensors and sensor seal are made of the specified corrosion resistant material. SS material for the flange indicates a use in not-so-corrosive environment, but doesn't impact the item classification.

Classification – Guided Example

Example 2: Coordinate Measuring Machine (CMM)

PRODUCT BROCHURE

HEXAGON
METROLOGY

DEA MICRO-HITE

Handy and Cost-Effective CMM

Classification – Guided Example

Micro-Hite, the line of small CMMs featuring excellent performance, is the result of the synergy among Hexagon Metrology companies in research, design and manufacturing.

Micro-Hite is suitable for use in small shops as well as in large operations, as a stand-alone, walk-up station for first part inspection, tool set-up or as a flexible gage. It is available in both the manual and CNC version.

The automatic version, Micro-Hite DCC, features performance and flexibility typical of larger measuring volume CMMs.

HEXAGON METROLOGY

Micro-Hite DCC is characterised by:

- High dynamics. Thanks to an advanced dual reduction belt drive system, the machine can reach high accelerations, typical of medium/large-sized CMMs. Positioning speed up to 350 mm/sec and acceleration up to 1730 mm/sec2.
- Z axis pneumatic counterbalance system.

The powerful capabilities of PC-DMIS™ software allow to address any inspection application requirement. Measuring data is automatically collected and intuitive analysis reports are quickly generated.

Classification – Guided Example

PC-DMIS measuring software by Hexagon Metrology provides the most comprehensive solution to today's metrology applications.

HEXAGON METROLOGY

PC-DMIS PRO

The perfect balance between power and ease of use. It feat

- Intuitive graphic user interface (without CAD)
- Full programming environment, including high level programming functions
- Customisable menus
- Quick Starts™
- PTB certified algorithms
- Intuitive Probe and Go™ measurement
- Full suite of customisable reporting tools

Using Probe and Go measurement, just touch the feature of the part you want to inspect. PC-DMIS PRO automatically recognizes the feature type and creates an interactive graph representation of the part on the screen.

TESA

High Performance Swiss Made Probes

Micro-Hite is equipped with either of the Hexagon Metrology's high-tech touch trigger probing systems for CMMs that include both manual and motorized probe heads, automatic probe changers, probe extensions and styli.

PC-DMIS CAD

Use the power of 3D CAD data to create part programs, both on line and off line, complete with graphical part models and probe path simulations. PC-DMIS CAD also allows to generate the geometry of unknown parts and computer models for reverse engineering applications.

Classification – Guided Example

TECHNICAL SPECIFICATIONS
DEA MICRO-HITE DCC

HEXAGON METROLOGY

Model	Measuring Strokes (mm) X	Y	Z	Maximum Permissible Error (*) (µm) MPE_E	MPE_P	Max. 3D Speed (mm/s)	Max. 3D Acc. (mm/s^2)	Overall Dimensions (mm) Lx	Ly	Lz	Max. Part Weight (kg)	Machine Weight (kg)
454	460	490	390	2.5+3.9 L/1000	3.0	350	1730	1080	1160	2320	227	223
475	460	690	390	2.5+3.9 L/1000	3.0	350	1730	1080	1280	2320	200	325

(*) according to ISO 10360-2
Probe for performance test: TESASTAR-i, stylus ø 4 mm, L = 21 mm

Environment

Working temperature range	20 °C ± 1 °C
Max. temperature variation/day	1 °C
Operating temperature range	from 10 °C to 35 °C
Relative humidity	< 80 % non-condensing

Utility Requirements

Minimum air supply pressure	0.39 MPa
Air consumption	60 Nl/min
Electrical supply	115 – 230 VAC; 50 – 60 Hz, 15 A
Maximum power consumption	600 VA

Classification – Guided Example

As with the previous case on transducers we will again proceed through the following step for the classification of this CMM:

- Which Category may control this item?
- Which entry could apply?
- Which technical characteristics are used in this entry to describe the item?
- Which technical characteristics does the export item meet?
- Do the characteristics match?

Classification – Guided Example

2B006

Dimensional inspection or measuring systems, equipment and "electronic assemblies", as follows:

a. Computer controlled or "numerically controlled" Coordinate Measuring Machines (CMM), having a three dimensional (volumetric) maximum permissible error of length measurement (E0,MPE) at any point within the operating range of the machine (i.e., within the length of axes) equal to or less (better) than (1,7 + L/1 000) µm (L is the measured length in mm), according to ISO 10360-2 (2009);

Technical Note: The $E_{0,MPE}$ of the most accurate configuration of the CMM specified by the manufacturer (e.g., best of the following: probe, stylus length, motion parameters, environment) and with "all compensations available" shall be compared to the 1,7+L/1 000 µm threshold.

Classification – Guided Example

2B006.a assessment

Entry number	Technical specifications	Regulation (EC) N 1382 / 2014	Critical specification correlated
2B006.a.	Measuring Axis: X, Y,Z axis.	Three dimensional	Condition fulfilled
2B006.a.	Manual model.	Computer or numerically controlled	The same model can be manual or computer controlled. The condition is not fulfilled strictly speaking.
2B006 a.	Best accuracy: $MPE_E = (3 + 4L /1000)\mu m$ According ISO 10360-2	accuracy less (better) than (1,7 + L/1 000) µm. According ISO 10360-2009	(3 + 4L /1000)µm > (1,7 + L/1 000) µm. Accuracy doesn't match with controlled entry requirements. Example: For L = 100 mm 3+ 4*100/1000 = 3,4 µm 1,7 + 100/1000 = 1,8 µm 3,4 µm > 1,8 µm Condition is not fulfilled

The model is manual and is not accurate enough to be controlled under 2B006.a

Classification – Guided Example

2B206

Dimensional inspection machines, instruments or systems, other than those specified in 2B006, as follows:

a. Computer controlled or numerically controlled coordinate measuring machines (CMM) having either of the following characteristics:

1. Having only two axes and having a maximum permissible error of length measurement along any axis (one dimensional), identified as any combination of E0x,MPE, E0y,MPE, or E0z,MPE, equal to or less (better) than (1,25 + L/1 000) µm (where L is the measured length in mm) at any point within the operating range of the machine (i.e., within the length of the axis), according to ISO 10360-2(2009); or

2. Three or more axes and having a three dimensional (volumetric) maximum permissible error of length measurement (E0,MPE) equal to or less (better) than (1,7 + L/800) µm (where L is the measured length in mm) at any point within the operating range of the machine (i.e., within the length of the axis), according to ISO 10360-2(2009);

Technical Note: The E0,MPE of the most accurate configuration of the CMM specified according to ISO 10360-2(2009) by the manufacturer (e.g., best of the following: probe, stylus, length, motion parameters, environments) and with all compensations available shall be compared to the 1,7 + L/800 µm threshold.

Classification – Guided Example

2B206.a assessment

2B206.a.	Manual model	Computer controlled or numerically controlled	Condition not fulfilled
2B206.a.1	3 axis (x, y and z)	Having only two axis	Condition not fulfilled
2B206.a.1	Best accuracy: $MPE_E = (3 + 4L /1000)\mu m$ According ISO 10360-2	accuracy less (better) than (1,25 + L/1 000) µm. According ISO 10360-2009	(3 + 4L /1000)µm > (1.25 + L/1 000) µm. Accuracy doesn't match with controlled entry requirements. Example: For L = 100 mm 3+ 4*100/1000 = 3,4 µm 1,25 + 100/1000 = 1,35 µm 3,4 µm > 1,35 µm Condition is not fulfilled

or

2B206.a.2	3 axis (x, y and z)	Three or more axis	Condition fulfilled
2B206.a.2	Best accuracy: $MPE_E = (3 + 4L/1000)\mu m$ According ISO 10360-2	Accuracy less (better) than (1,7 + L/800) µm. According ISO 10360-2	(3 + 4L /1000)µm > (1,7 + L/ 800) µm. Accuracy doesn't match with controlled entry requirements. Example: For L = 100 mm 3+ 4*100/1000 = 3,4 µm 1,7 + 100/800 = 1,825 µm 3,4 µm > 1,8 µm

The item is not controlled by 2B206.a

Classification – Guided Example

2B206.b

b. .Systems for simultaneous linear-angular inspection of hemishells, having both of the following characteristics:

1, "Measurement uncertainty" along any linear axis equal to or less (better) than 3,5 µm per 5 mm; and

2, "Angular position deviation" equal to or less than 0,02°.

Note 1: Machine tools that can be used as measuring machines are controlled if they meet or exceed the criteria specified for the machine tool function or the measuring machine function.

Note 2: A machine specified in 2B206 is controlled if it exceeds the control threshold anywhere within its operating *range.*

Technical Notes:

All parameters of measurement values in 2B206 represent plus/minus i.e., not total *band.*

Classification – Guided Example

2B206.b assessment

2B206.b	Accuracy for 5mm: 3 + 4*5/1000 = 3,02 µm	"Measurement uncertainty" along any linear equal to or less(better) than 3,5 µm per 5 mm **and** "Angular position deviation" equal to or less than 0, 02°.	3,02<3.5µm Condition on accuracy is fulfilled No informations about angular precision of CMM 544 Condition might not be fulfilled

Conclusion:

The item might be controlled under 2B206.b if angular precision deviation is within control range.