United Arab Emirates:
UAE regulation to control hazardous materials in electrical and electronic devices, aka UAE RoHS

Compliance & Risks Webinar
18 July 2017
Disclaimer

❖ We are working from translations
  ➢ We believe they are good translations, but they are translations nevertheless

❖ There are gaps in available information
  ➢ ESMA has not yet responded to inquiries

❖ Do your own research
  ➢ Work with your importers/distributors
UAE RoHS - Defining Items

❖ UAE Cabinet Decision No. 10/2017
❖ The Authority: Emirates Authority for Standardization and Metrology (ESMA)
❖ Emirates Conformity Assessment Scheme (ECAS) is a system of combining assessment of Conformity and Certification of products.
ESMA: Emirates Authority for Standardization & Metrology

- Established by Federal Law No. 28 of 2001
- “Independent legal entity and an independent budget which shall constitute a part of the UAE’s budget”
- Head office in Abu Dhabi City
- Article 4: The Authority shall be the only reference in the UAE for anything related to standards, metrology, and quality and shall exercise all the powers and authorities entrusted to it with a view to:
  1. Providing health, economic and environmental safety and protection by ensuring that the services, consumer commodities and other materials are of quality and in conformity with the approved standards.
  2. Supporting national economy and economic development plans by ensuring that the levels of quality are appropriate for national Industry and local production of commodities and other materials enabling the same to enter the different fields of competition.
  3. Keeping pace with the scientific development in the fields of activities of standards, metrology, quality control and quality management systems.
  4. Spreading awareness of the different standardization activities by all the possible means.
History/Background

❖ August 3 2015 – “Emirates control scheme to restrict the use of hazardous materials in electronic and electrical devices” issued, in English, through WTO TBT Committee (ARE/265)
❖ Comments from European industry associations and even the EU itself!
  ➢ Acknowledged the effort to derive it from EU RoHS (2011/65/EU)
  ➢ Many inconsistencies and fundamental understanding issues identified
  ➢ Second draft provided to EU (only, it appears) in late 2015
  ➢ Still had problems
❖ Regulation promulgated in April 2017
  ➢ Not all of the issues identified in the drafts were adequately addressed
Draft Issues

- In-Force dates were inconsistent with EU dates and generally unclear
- Confusion between whether exemptions apply to substance applications in products or to products
- Temporary vs. permanent nature of exemptions
- No clarity on “Conformity Assessment System”
- Numbering and content of exemptions are not consistent with EU numbering
Similar to EU RoHS:

“Product” = “EEE”: Dependent on electricity or EM field, Voltage rating not exceeding 1KV DC and 1.5KV AC

- Note that EU RoHS is OPPOSITE: 1KV AC and 1.5KV DC!!

Annex 1 defines the same RoHS product categories, in English!

- Expanded list of example products in English taken directly from Annex II of the WEEE Directive (2012/19/EU)!
Annex 2

- Annex 2 lists the same ten restricted substances (including the 4 phthalates) and their concentration limits.

<table>
<thead>
<tr>
<th>نوع المواد الخطرة</th>
<th>نسبة المواد الخطرة (%)</th>
<th>رقم (م)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (Pb)</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>0.1</td>
<td>2</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>0.01</td>
<td>3</td>
</tr>
<tr>
<td>Hexavalent chromium (VI)</td>
<td>0.1</td>
<td>4</td>
</tr>
<tr>
<td>Polybrominated biphenyls (PBB)</td>
<td>0.1</td>
<td>5</td>
</tr>
<tr>
<td>Polybrominated biphenyl ethers (PBDE)</td>
<td>0.1</td>
<td>6</td>
</tr>
<tr>
<td>Bis(2-ethylhexyl) phthalate (DEHP)</td>
<td>0.1</td>
<td>7</td>
</tr>
<tr>
<td>Butyl benzyl phthalate (BBP)</td>
<td>0.1</td>
<td>8</td>
</tr>
<tr>
<td>Dibutyl phthalate (DBP)</td>
<td>0.1</td>
<td>9</td>
</tr>
<tr>
<td>Diisobutyl phthalate (DIBP)</td>
<td>0.1</td>
<td>10</td>
</tr>
</tbody>
</table>
Annex 3 Sample

EU RoHS Annex 3 Exemptions:

- Mercury in metal halide lamps (MH).
- Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex.
- Lead in glass of cathode ray tubes.

1. Lead in glass of fluorescent tubes not exceeding 0.2 % by weight.
2. Lead as an alloying element in steel for machining purposes and in galvanised steel, containing up to 0.35 % lead by weight.
3. Lead as an alloying element in aluminium containing up to 0.4 % lead by weight.
4. Copper alloy containing up to 4 % lead by weight.
5. Lead in high melting temperature type solders (i.e. lead– based alloys containing 85 % by weight or more lead).
6. Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications.
7. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

Generally consistent with Current EU Exemptions (except those which have recently expired)
Annex 4 Issues

26. Lead acetate marker for use in stereotactic head frames for use with CT (Computed Tomography) and MRI and in positioning systems for gamma beam and particle therapy equipment5.
27. Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionizing radiation6.
28. Lead enabling vacuum tight connections between aluminum and steel in X-ray image intensifiers7.
29. Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below - 20 °C under normal operating and storage conditions8.
30. Lead in:
31. Solders on printed circuit boards,
32. Termination coatings of electrical and electronic components and coatings of printed circuit boards, – Solders for connecting wires and cables, solders connecting transducers and sensors
33. That are used durably at a temperature below - 20 °C under normal operating and storage conditions9.
34. Lead in:
35. Solders,
   – Termination coatings of electrical and electronic components and printed circuit boards,
Annex 5

❖ Article 1 Contains Definitions
❖ But Annex 5 contains additional definitions. NRMM, LSSIT and LSFI are defined but they (and defense equipment, etc.) are not mentioned in the regulation as being out of scope!
➢ i.e., no equivalent language to 2011/65/EU Article 2(4)
**More Scope Issues**

- **Mixes up scope exclusion and substance exemptions:**

  **Article 2**

  **Scope**

  The provisions of this Decision shall apply to all products as listed in Annex (1) attached to this Decision. **Products of any uses** determined in Annexes (3) and (4) attached to this Decision are excluded from scope.

- **Important because EU noted this issue**
  - Twice…
  - Still not corrected

  “Excluded from scope” is probably incorrect; “exempt from substance restriction limits per the specific exemption” is more likely

Annexes 3 and 4 are exemptions, which are substance-application dependent
Concentration Limits

- Same percentages as RoHS
- “Homogeneous material” defined in Annex 5 – same as EU RoHS, but…
- The regulation’s reference in Article 3, Technical Requirements, is curious:
  - The homogeneous materials concentration rates … shall be calculated in ratio to the weight of the materials incorporated in the part where such materials were used.
## Compliance Dates

<table>
<thead>
<tr>
<th>Group</th>
<th>EU RoHS Equivalent Category</th>
<th>Products</th>
<th>Hg, Pb, Cd, Cr (VI), PBB, PBDE, PBB Date of Restriction</th>
<th>DEHP, DBP, DIBP, BBP (Phthalates) Date of Restriction</th>
</tr>
</thead>
</table>
| A     | 8,9                        | • Medical devices  
• Diagnostic medical devices  
• Monitoring and control instruments  
• Industrial monitoring and control instruments | 1-Jan-20                             | 1-Jan-22                                      |
| B     | 8,9                        | • Cables and spare parts of group (A) placed on the market                | 1-Jan-22                             | 1-Jan-22                                      |
| C     | 1-7,10                     | • Products included in this decision (except group A above) and cables, spare parts for repair, the reuse, the updating of functionalities or upgrading of capacity. Products under category (11) of Annex (1) are exempted. | 1-Jan-18                             | 1-Jan-20                                      |
| D     | 11                         | • Products under category (11) of Annex (1) placed on the market          | 1-Jan-20                             | 1-Jan-20                                      |
Supplier Responsibilities

❖ Register per the ECAS requirements
  ➢ ECAS: Emirates Conformity Assessment Scheme
  ➢ On the ESMA (Emirates Authority for Standardization and Metrology) portal
❖ This enables you to apply for services, like ECAS Certification
❖ Complete Compliance Verification Form (A)
  ➢ Presumably on the ESMA portal…
❖ Appears that data submission is all electronic, through the portal
❖ The portal has not been updated to address this regulation yet
Demonstrating Compliance

- Annex 6 Contains a list of standards related to demonstrating compliance
  - IEC 62321 (2008 version – downrev)
  - IEC 62474
  - IEC/TR 62476
  - EN 50581

- The *implication* is that data collected for EU RoHS, whether test per IEC 62321 or risk-based per EN 50581 (which can include test), is acceptable

- Note that IEC 63000:2016 is the internationalization of EN 50581 and therefore is more appropriate to be referenced by non-EU regulations
Conformity Assessment

❖ Provide (presumably via the ECAS portal)
  ➢ A general description of the product
  ➢ A detailed description of the product/product line “including a list of substances and materials used in the manufacturing process”
  ➢ List of standards used
  ➢ “Inspection and testing reports…accepted and approved by the Authority”
  ➢ Documentation of part/material compliance showing the “rates of hazardous materials used in the product” – i.e., show exemptions taken
    ▪ Per Compliance Verification Form (A)
  ➢ Whatever else they ask for

❖ Language requirements are unclear – Is English acceptable? Other languages?
  ➢ Portal and is available in both Arabic and English

❖ Presumably the Authority responds within 8 working days to submissions
Another Mark?

- Certificates of Compliance are required before selling product in UAE
  - 30 working day service time to obtain an EQM
- EQM appears to generally be voluntary
- No mention of a required mark is in the regulation
7.2 When the results of conformity assessment demonstrate that the relevant requirements are met, ESMA shall issue an ECAS Registration Certificate to the product.

7.3 The ECAS Registration Certificate shall serve as an approval of the product and can be used by the trader in marketing their registered product.

7.4 Registration Certificate is not transferable and is valid only for the product being evaluated and manufactured in a particular facility.

7.5 The Registration Certificate shall be valid for 1 year subject to renewal.

8.1 A registered supplier can extend the Registration to other types or models of products made in the same factory to the same Technical Regulation. In cases like this, ESMA shall decide a product shall undergo Conformity Assessment or is waived for a particular model.
A Sample of Outstanding Questions

❖ Where can we obtain Form (A) and what does it contain?
❖ Is annual submission required since ECAS certificate is only good for 1 year?
❖ Is English (or any other non-Arabic language) acceptable for any aspect of the provided documentation?
❖ Will technical documentation collected for EU RoHS suffice?
❖ Will ESMA be able to handle the application load without undue delay?
❖ Will General Requirements for ECAS, and everything else, be updated for this regulation?
❖ Do spares for pre-regulation product (i.e. non-compliant) have to be compliant?
Other Important Sections of the Regulation

❖ Article 6: Market Surveillance and Control
   ➢ Product for sale or display must comply with the requirements
   ➢ Authority may take samples of products to review for compliance
   ➢ Possible Actions for non-compliant product
     ▪ Withdrawal from the market
     ▪ Cancellation of compliance certificate
     ▪ Other measures…
     Supplier will be liable for costs

❖ Article 7: Penalties

❖ Article 8: Grievance Procedures
   ➢ Regarding Article 7
Resources

❖ ESMA portal (English portal)
  ➢ https://etrans.esma.gov.ae/English/Workspace/Pages/my-requests.aspx

❖ Regulation(s)

❖ ECAS
  ➢ http://www.esma.gov.ae/en-us/Services/Pages/ECAS.aspx

❖ General Requirements for ECAS
    ▪ Not updated to reflect UAE RoHS process
What to do now?

- Contact your importers/distributors/employees in UAE
- Get clarification on requirements
- Register on the ECAS portal, if you can
  - Only US cities listed are New York and Washington, DC!
  - Does not properly send validation code text to US phone # (even preceded with “001”)
- Start the ball rolling for category 1-7 &10 products
  - Apply for Service: ECAS
  - Timeline is short and ESMA approval is likely to be a bottleneck
Thank You For Your Attention
About DCA

❖ Manufacturing Consulting firm
  ➢ Focus on Discrete/Fabricated “Article” Manufacturers
  ➢ Based in San Francisco, CA

❖ Focus 1: Strategies/Tactics for Compliance with Product-Targeted Environmental Regulation & Customer Requirements
  ➢ Substance compliance, Recycling, Green Claims, Energy Use, Conflict Minerals, Carbon/GHG, NGOs
  ➢ Worldwide scope
  ➢ A&D, Industrial and Commercial, Consumer Electronics, Medical, Apparel, Agriculture, Construction, etc.

❖ Focus 2: Supplier/Component/Technology Selection, Management, & Integrity
  ➢ Product development business processes that improve engineering efficiency and mitigate many supply chain problems

❖ See www.DesignChainAssociates.com
Mike’s Background

➢ 20 years in manufacturing companies, in product development and quality/reliability roles:

➢ 17 years in consultancies

❖ Co-Moderator: ANSI Chemicals Network
❖ Initial Member of California EPA DTSC Green Ribbon Science Panel: 2009-2013
❖ Member of American Chemical Society Green Chemistry Institute Governing Board: 2014-current