



Webinar “Implementing the Global Framework on Chemicals (GFC) through Safe and Sustainable Innovation: Global Perspectives and Practice”



Circular Electronics in Kazakhstan and Central Asia:

Safety requirements, standards, and regional collaboration

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Electronics Design: Restriction of Hazardous Substances

EAEU TECHNICAL REGULATION

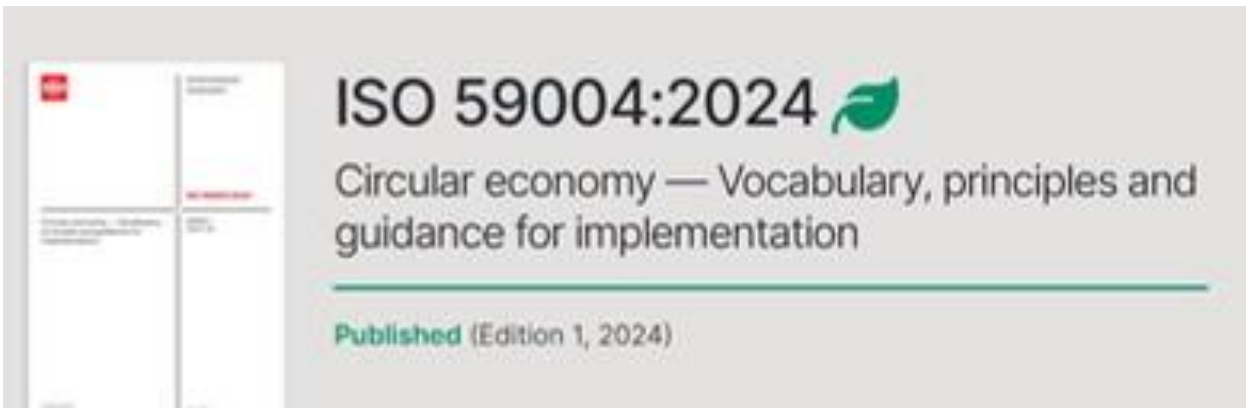
- Technical Regulation of the Eurasian Economic Union (EAEU TR 037/2016) entered into force on March 1, 2018
- Limits hazardous substances in electrical and electronic equipment (12 groups, including household appliances, computers, telecommunications equipment, etc.)
- Covers key substances (e.g. lead, mercury, cadmium)
- Aligns with global approaches (e.g. EU RoHS)
- Applies across multiple countries in the region (Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan)

Permissible concentration

Lead (Pb)	
Mercury (Hg)	
Hexavalent chromium (Cr ⁶⁺)	0,1%
PBB (polybrominated biphenyls)	
PBDE (polybrominated diphenyl ethers)	
Cadmium (Cd)	0,01%



Standards as a Tool for Circular Design



- Adoption of ISO 59000 series as national standards in Kazakhstan as modified standarts
- Provide a common framework for implementing circular economy principles
- Design principles:
 - Design for circularity (use secondary resources)
 - Lifecycle-oriented design
 - Design for closed-loop systems Efficient
 - use of materials, energy, water
- Practical guidance for industry

NEXT STEPS

- Translating standards into industry practice
- Supporting companies in applying circular design principles
- Building capacity and awareness
- Testing practical approaches through pilot initiatives



Central Asian Circular Electronics Alliance

- Regional platform established in 2024 with support of UNEP
- Brings together:
 - producers & importers
 - recyclers stakeholders
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- Focus on practical implementation of circular economy
- Key benefits:
 - Connecting recyclers and producers to integrate recyclability and feedback into product design
 - Promoting safer products by reducing hazardous components for better recycling outcomes
 - Networking as a tool for circular economy implementation (ISO/DTR 59032)



QAZAQTECHNOLOGY

LOCAL COMPUTER HARDWARE MANUFACTURER IN KAZAKHSTAN SINCE 2014



Challenges:

- Defective plastic casings generated during production
- Dependence on virgin materials
- Limited reuse practices in manufacturing
- Cost and waste management pressures



Solution:

- Reuse of defective casings as secondary raw material
- Production of new casings from recycled material (improving resource efficiency)
- Reduction of material waste and resource use



Local manufacturing creates opportunities for circularity, but requires measurement and system-level implementation (ISO 59020)

Moving Towards Safer and More Circular Electronics



- Circular electronics in the region is still developing
- Some key elements already exist:
 - regulation on hazardous substances
 - emerging standards
 - extending product lifecycle through repair and refurbishment
 - increasing reuse of components and materials
- *But* practical implementation remains limited
- Companies are only starting to:
 - reduce hazardous substances
 - explore safer materials and design
- There is a strong need for:
 - practical tools
 - industry engagement
 - examples of good practice

Contact us



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