

Electronics Recycling Standards Compared: R2 and e-Stewards®



Only the e-Stewards standard prohibits export of hazardous e-waste to developing nations.

Why the environmental groups support e-Stewards and not R2

There are now two voluntary certification programs based on performance standards for electronics recyclers: The R2 Guidelines and the e-Stewards Standard. How do they compare?

When you look at how the two standards address the four worst problems plaguing the e-waste recycling industry – particularly the problem with exporting e-waste to developing countries - it is clear that the e-Stewards Standard sets a much higher bar for this industry that is plagued by “fake recyclers” and exporting. This chart explains why.

The 4 worst problems plaguing the recycling industry	R2	e-Stewards
Problem 1: EXPORTING E-WASTE TO DEVELOPING COUNTRIES		
The U.S. exports most of its toxic e-waste to developing nations, where it causes great harm. This is the single biggest problem plaguing this industry, and U.S. laws don't prevent it.		
Does the standard prohibit recyclers from exporting e-waste to developing countries for RECYCLING?	No, exports are allowed.	Yes. The e-Stewards Standard prohibits these exports.
Does the standard prohibit recyclers from exporting non-working hazardous equipment or parts to developing countries for REPAIRS?	No. In fact, this is one of the biggest loopholes in R2. An R2 certified exporter may send non-working hazardous equipment from the U.S. to an R2 certified company in a developing nation. The R2 export language will not	Yes. Only working equipment, which has been tested and is fully functional may be exported to developing nations. If it doesn't work, or hasn't been tested, it can't be exported if it contains hazardous components.

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	prevent this even though the import of this material is likely illegal in the receiving country.	
Does the standard require e-waste exports from the U.S. to developing countries to comply with the importing countries' laws?	<p>No. R2 says imports must go to countries "which legally allow it" but then it allows the recycler to decide what's legal. This is a problem because only the importing countries (not an R2 exporter) have the right to determine what wastes or materials are legal for them to import.</p> <p>R2 claims the exports will be legal, but their auditors are not conducting a legal compliance audit. Therefore, R2 certification provides no legitimate proof that the imports are legal.</p>	<p>Yes, and goes beyond this. The exports of toxic materials for recycling and exports of non-working toxic e-waste are simply not allowed from developed to developing countries. Legal compliance is not an issue because the exports don't take place.</p>
<p>Problem 2: INCINERATION/LANDFILLING E-WASTE</p> <p>U.S. laws allow toxic e-waste to be sent to solid waste landfills and incinerators that are not designed for hazardous waste, resulting in inappropriate management and release of heavy metals and persistent bio-accumulative chemicals.</p>		
Does the standard prohibit incineration or landfilling of toxic e-waste?	<p>No. R2 discourages but still allows R2 certified recyclers to put toxic e-waste in solid waste landfills or incinerators, including waste-to-energy incinerators, if undefined 'circumstances beyond their control' occur.</p>	<p>Yes, this is prohibited. The e-Stewards Standard bans the disposal of hazardous e-waste in solid waste landfills and incinerators, including waste-to-energy incinerators.</p>
<p>Problem 3: WORKER HEALTH & SAFETY</p> <p>The U.S. is doing little to identify potential hazards and to protect its own electronics recycling workers. A common practice in the U.S. is to shred electronics that contain mercury, small batteries lead-tin solders, and brominated flame retardants in the mix, when it is widely known that this disperses toxins directly into the workplace and the shredded materials.</p>		
What chemical hazards does the standard require the recycler to address in protecting workers?	<p>R2 leaves it up to recyclers to identify the toxic chemicals they are dealing with, their potential hazards, and appropriate tests for exposures.</p>	<p>The e-Stewards Standard specifies the hazards which must be tested for (at a minimum) while using certain recycling technologies, such as breaking CRTs, removing mercury-containing devices, shredding, using solvents and thermal processes.</p>

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<p>What kinds of worker health testing or monitoring are required?</p>	<p>R2 has no baseline requirements for what tests should be done to check for exposure to toxic materials common in electronics, or how to minimize exposure. R2 recyclers must develop their own Environmental Health and Safety Management System, but the requirements are very general and allow the recycler to determine what's "appropriate."</p>	<p>The e-Stewards Standard requires recyclers to establish and maintain procedures to minimize exposure, but it goes even further by requiring very specific kinds of worker testing and monitoring, every 6 months, by qualified professionals to detect unsafe exposures. Recyclers must conduct full occupational health and safety evaluations every 3 years.</p>
<p>Mercury is known to be a problem for recyclers, since it's used in lamps, switches, and button cell batteries commonly found in electronics. How does the standard address this very toxic material?</p>	<p>R2 allows mercury and batteries to go into shredders, if it's "too costly" to remove small mercury devices, and the recycler can argue that workers are protected and "appropriate technology" is used, although that's not defined. While shredding mercury in e-waste is currently allowed under OSHA regulations, there are currently no shredders that can capture vaporized mercury.</p>	<p>e-Stewards recyclers must safely remove and separate all mercury-containing devices so they are not recycled or disposed of using potentially hazardous processing technologies (such as shredding). (End processors for mercury are allowed to do this, in fully licensed and permitted mercury retort operations.)</p>
<p>Problem 4: PRISON RECYCLING</p> <p>The federal government sends toxic e-waste to federal prison recycling operations, where inmates lack the same rights and options to redress serious occupational hazards as private sector workers. Because this government prison recycling is subsidized by taxpayers, it competes unfairly with private sector recyclers and therefore undermines private sector recyclers.</p>		
<p>Does the standard prohibit the use of prison recycling?</p>	<p>No. R2 allows the use of prison recycling, and prison recycling operations may be certified.</p>	<p>Yes. The e-Stewards Standard bans the use of prison labor for processing hazardous e-waste.</p>
<p>CERTIFICATION PROGRAM OVERSIGHT</p>		
<p>Certification program ownership and oversight</p>	<p>R2 has no owner, thus multiple R2 programs exist without central oversight on quality control, auditor training, maintenance & interpretation of 'R2 Practices', use of logo, promotion of the program, certification & accreditation.</p>	<p>The e-Stewards program is housed by the Basel Action Network, with full time staff and certification consultants who oversee quality control on all aspects of the standard, auditor training, certification, accreditation, & use of logo.</p>

Learn more about the e-Stewards program: www.e-stewards.org