

R2

it's **role** in the marketplace
it's **content**

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customers should write RFPs that enable them to identify e-recyclers that are

independently audited and
third-party certified to a set of
EHS standards that reflect the
customer's values

and they should make this a requirement in contracts

this is **R2**'s role in the marketplace

R2

RESPONSIBLE RECYCLING (“R2”) PRACTICES

For Use In

ACCREDITED CERTIFICATION PROGRAMS

For

ELECTRONICS RECYCLERS

R2

actively participated in developing R2: government ([USEPA and States](#)), corporate ([OEMs](#)) customers, [e-recyclers](#) and [e-refurbishers](#), and [NGOs](#)*

focuses on
performance

environmental and public health
worker health and safety
security (data and facility)
the whole recycling chain
final disposition

* The NGOs disagreed with the approach R2 takes regarding exports and have developed an alternative standard that prohibits e-wastes identified as hazardous in the Basel Convention from being exported to non-OECD countries

R2

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E-recyclers need to

R2

develop and adhere to a comprehensive, documented, environmental, health, and safety (EHS) management system

know and comply with applicable legal requirements

undertake a comprehensive set of actions to address EHS

for “Focus Materials”

assure and document that exports, including exports by downstream vendors, are legal under the laws of the importing country

only do business with downstream vendors that conform to key R2 requirements, including this “due diligence” requirement and the “export” requirement

The R2 document and checklist are available at www.decideagree.com

R2

OSHA and EPA helped develop R2's on-site EHS requirements

e-recyclers:

must **identify** and **assess** on ongoing basis occupational hazards and risks* that may arise

must **address** these hazards and risks in accordance with hierarchy of strategies developed by OSHA

must protect **all** workers equally (e.g. prisoners)

* "Risks posed by exposure to substances may arise in a variety of situations – sometimes involving substances that do not under ordinary conditions pose a risk to worker safety or the environment. Such substances may include mercury, lead, beryllium, cadmium, PCBs, some phosphor compounds, certain brominated flame retardants (i.e., polybrominated biphenyls, pentabrominated diphenyl ether, and octabrominated diphenyl ether), silica dust, chlorinated or brominated dibenzodioxins and dibenzofurans, and hexavalent chromium. Special attention should be given to potential lead and cadmium exposures during the creation or handling of broken CRT glass, as well as where lead solder is melted during chip recovery."

“Focus Materials”

FMS

A definition that is broader than US “hazardous waste” though narrower than “Basel waste”

“materials in end-of-life electronic equipment that warrant greater care during recycling, refurbishing, materials recovery, energy recovery, incineration, and/or disposal due to their toxicity or other potential adverse worker health and safety, public health, or environmental effects that can arise if the materials are managed without appropriate safeguards”

the following are R2 Focus Materials:

- (1) items containing polychlorinated biphenyls (PCBs),
- (2) items containing mercury,
- (3) CRTs and CRT glass,
- (4) batteries
- (5) whole and shredded circuit boards*

* except for whole and shredded circuit boards that do not contain lead solder, and have undergone safe and effective mechanical processing, or manual dismantling, to remove mercury and batteries

you need to manage each type of FM properly
to final disposition

FMs and assure your downstream vendors do as well

for example

prior to shredding, materials recovery, energy recovery, incineration, or land disposal of equipment or components, items containing mercury shall be removed using safe and effective mechanical processing or manual dismantling, unless (i) such items are too small to remove safely at reasonable cost, and (ii) workers are protected from the risks posed by the mercury during and subsequent to any processing or manual dismantling of the equipment containing it, and (iii) the equipment and components containing such items are sent to materials recovery facilities that are properly licensed to receive, and that utilize technology designed to safely and effectively manage, equipment or components containing such mercury-containing items

You need to

Reuse

prior to shipping equipment containing FMs for reuse, repair, refurbishment, or remanufacturing, do one of following:

- test to ensure key functions are working properly

- determine recipient is R2 certified vendor

- establish through contract, auditing and records that:

 - equipment meets the specifications of recipient, and
 - the recipient is selling with key functions working, and
 - the recipient manages residual FMs in conformity to R2

there are also labeling and packaging requirements

If you test and ensure key functions are working properly

Reuse

the management of such equipment or components need not conform to the R2 requirements covering export documentation and downstream due diligence

more you need to do

R2

An R2 electronics recycler shall maintain for at least three years commercial contracts, bills of lading, or other commercially-accepted documentation for all transfers of equipment, components, and materials into and out of its facility, as well as for any brokering transactions

An R2 electronics recycler shall sanitize, purge, or destroy data on hard drives and other data storage devices...unless otherwise requested in writing by the customer. The R2 electronics recycler shall adhere to the data sanitization, purging, or destruction practices described in the NIST Guidelines for Media Sanitation: Special Publication 800-88 or another current generally-accepted standard, or be certified by a generally-accepted certification program

there is other stuff too

contacts

if you want to use the RIOS management system, tools, and support for meeting your R2 performance requirements



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for information about getting certified to R2/RIOS or R2 as a standalone standard

WHEN YOU NEED TO BE SURE



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