

Title LX Module Recycling and Disposal

Date January 2014 (Revised: March 2016)

Scope This bulletin applies to all Ionpure LX modules (LX-X, LX-Z, LX-HI, LX-MK).

This bulletin does NOT apply to other Ionpure CEDI modules such as VNX, MX, or LabXT. Contact your local service provider for assistance. See **SB-2016_01** for information on VNX module disposal.

Purpose There has been an increasing demand for a way to recycle Ionpure modules that have reached the end of their lives. The following service bulletin details the procedure for safe disassembly of LX modules and the recycling or disposal of the product components.

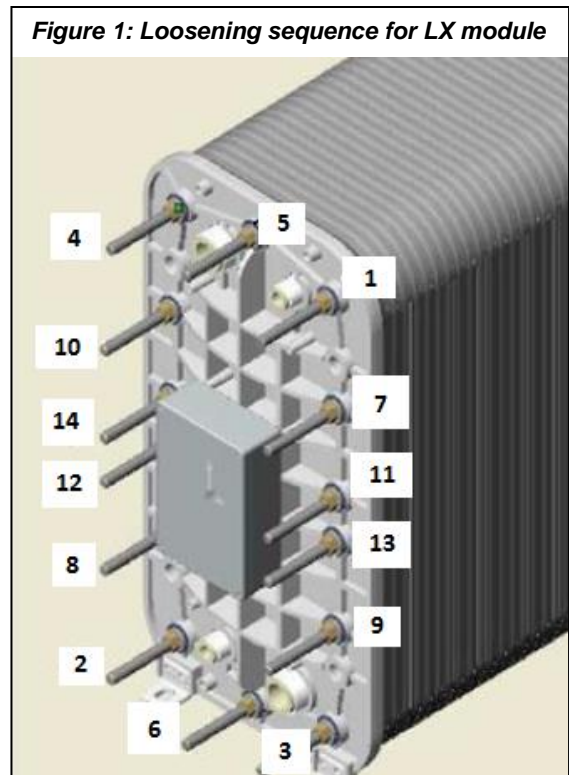
This bulletin also details the materials of construction for the LX-Z, LX-X, LX-HI, and LX-MK product families. Recommendations on which materials can be recycled are included.

Procedure

- 1) Disconnect DC Power to the module.
- 2) Perform a 5 minute flush at minimum to nominal flow with a 5% NaCl solution to exhaust the resin.
- 3) Flush the module with water at minimum flow for 5 minutes.

NOTE: Steps 2 & 3 must be performed even if the module was not in service prior to disposal.

- 4) Remove the module from the system and lay it on its end so that protruding tie bars are facing up.
- 5) Using a wrench, carefully loosen the nuts on the tie bars a few turns at a time. Use the loosening sequence shown in **Figure 1**.



NOTE: Once an LX module is disassembled it cannot be reassembled. DO NOT attempt to rebuild CEDI modules that have been taken apart.

LX Recycling Tables

Tables 1-3 below contain a material list of the components for LX-Z, LX-X, LX-MK, and LX-HI modules. A recommendation on which materials can be recycled is included.

The key for the recycling tables is as follows:

- Yes** - The material can be recycled or scrapped.
- Maybe** - It is unknown if the material can be recycled. Municipal recycling centers may not take these materials. There may be private recycling companies that will accept them.
- No** - The material must be disposed of as normal (non-hazardous) waste and cannot be recycled.

- For additional information on metal recycling visit:
<http://minerals.usgs.gov/minerals/pubs/commodity/recycle/recymyb01.pdf>

Table 1 – Recycling table for LX-Z modules

Component	Material LX-Z	Recyclable
Dilute Spacer	CPVC	Maybe
Concentrate Spacer	CPVC	Maybe
Electrode Gasket	Thermoplastic elastomer	Maybe
Resin Compartment O-Rings	Thermoplastic elastomer	Maybe
Anion Exchange Resin 1	Styrene/divinylbenzene, strong base, Type I	No
Anion Exchange Resin 2	Styrene/divinylbenzene, strong base, Type II	No
Cation Exchange Resin	Styrene/divinylbenzene, strong acid	No
Anion Exchange Membrane	Polyethylene & anion exchange resin	No
Cation Exchange Membrane	Polyethylene & cation exchange resin	No
Anode	Platinized Titanium	Yes
Cathode	316 Stainless Steel	Yes
Tie Bars	316 Stainless Steel	Yes
Wiring	Copper	Yes
End Plate	Aluminum	Yes
Junction Box	Aluminum	Yes
Miscellaneous hardware (nuts, screws, etc.)	316 Stainless Steel or Brass	Yes

Table 2 – Recycling table for LX-X and LX-MK modules

Component	Material LX-X & LX-MK	Recyclable
Dilute Spacer	Polysulfone	Maybe
Concentrate Spacer	Polysulfone	Maybe
Electrode Gasket	Thermoplastic elastomer	Maybe
Resin Compartment O-Rings	Thermoplastic elastomer	Maybe
Anion Exchange Resin 1	Styrene/divinylbenzene, strong base, Type I	No
Anion Exchange Resin 2	Styrene/divinylbenzene, strong base, Type II	No
Cation Exchange Resin	Styrene/divinylbenzene, strong acid	No
Anion Exchange Membrane	Polyethylene & anion exchange resin	No
Cation Exchange Membrane	Polyethylene & cation exchange resin	No
Anode	Platinized Titanium	Yes
Cathode	316 Stainless Steel	Yes
Tie Bars	316 Stainless Steel	Yes
Wiring	Copper	Yes
End Plate	Aluminum	Yes
Junction Box	Aluminum	Yes
Miscellaneous hardware (nuts, screws, etc.)	316 Stainless Steel or Brass	Yes

Table 3 – Recycling table for LX-HI modules

Component	Material LX-HI	Recyclable
Dilute Spacer	Polysulfone	Maybe
Concentrate Spacer	Polysulfone	Maybe
Endblock	Polypropylene	Yes
Endblock O-Rings	Silicone rubber	Maybe
Resin Compartment O-Rings	Silicone rubber	Maybe
Anion Exchange Resin 1	Styrene/divinylbenzene, strong base, Type I	No
Anion Exchange Resin 2	Styrene/divinylbenzene, strong base, Type II	No
Cation Exchange Resin	Styrene/divinylbenzene, strong acid	No
Anion Exchange Membrane	Polyethylene & anion exchange resin	No
Cation Exchange Membrane	Polyethylene & cation exchange resin	No
Anode	Platinized Titanium	Yes
Cathode	316 Stainless Steel	Yes
Tie Bars	316 Stainless Steel	Yes
Wiring	Copper	Yes
End Plate	Aluminum	Yes
Junction Box	Aluminum	Yes
Miscellaneous hardware (nuts, screws, etc.)	316 Stainless Steel or Brass	Yes