



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

FEB 24 2017

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

NOW THE  
OFFICE OF LAND AND  
EMERGENCY MANAGEMENT

Chris Bryant  
Bergeson & Campbell PC  
2200 Pennsylvania Avenue, N.W. Suite 100W  
Washington, D.C. 20037

Dear Mr. Bryant,

Thank you for your inquiry about whether items consisting of scrap tantalum anodes, wire, pellets, pins, and powders<sup>1</sup> would be considered either processed scrap metal when recycled under 40 CFR 261.4(a)(13), or all other scrap metal when recycled under 40 CFR 261.6(a)(3)(ii) and thus, excluded from RCRA hazardous waste export and import requirements. We applaud the sustainability efforts of your client, Hi-Temp Specialty Metals, Inc., in promoting the environmentally protective recycling of valuable secondary materials like tantalum.

Based on the information provided, the EPA agrees that scrap tantalum anodes, wire, pellets, and pins meet the definition of scrap metal found at 40 CFR 261.1(c)(6)<sup>2</sup> and would not be subject to RCRA solid waste regulation when recycled under the solid waste exclusion found at 40 CFR 261.4(a)(13) (if processed)<sup>3</sup> or under the hazardous waste exemption found at 40 CFR 261.6(a)(3)(ii) (for all other materials). Note that in order to be exempt under either of these provisions the recycling must be legitimate per 40 CFR 260.43. Scrap metal that is not legitimately recycled is not excluded from RCRA solid waste regulation under 40 CFR 261.4(a)(13) or exempt from RCRA hazardous waste regulation under 40 CFR 261.6(a)(3)(ii). Instead, scrap metal that is not legitimately recycled would be a solid waste that is subject to the full set of RCRA hazardous waste regulations rules if it exhibits a characteristic or has become contaminated with a listed waste.

However, "powders" would only meet the definition of scrap metal in 40 CFR 261.1(c)(6) if they have been "agglomerated" in such a way that the agglomerated powders physically resemble other types of

---

<sup>1</sup> Please note that your June 16, 2016 letter requests a regulatory determination regarding "similar associated materials"; we have not been provided sufficient information to determine the status of "similar associated materials."

<sup>2</sup> For more information see 62 FR 25998; 26011; May 12, 1997

<sup>3</sup> Processed scrap metal includes, but is not limited to, scrap metal which has been bailed, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type; and fines, drosses and related materials which have been agglomerated. (40 CFR 261.1(c)(10))



scrap metal (i.e., bits and pieces of metal parts).<sup>4</sup> For example, tantalum powder that has been mixed with a binder and then sintered at a high temperature (typically 1500-2000°C) under a vacuum to cause the powder particles to form a structure of high mechanical strength and density<sup>5</sup> would be considered to meet the definition of “fines, drosses and related materials which have been agglomerated” and would therefore be considered processed scrap metal per 40 CFR 261.1(c)(10).

On the other hand, non-agglomerated tantalum powders would not meet the definition of scrap metal in 40 CFR 261.1(c)(6). Processed scrap metal being recycled was excluded from the definition of solid waste “due to established markets for the material’s utilization, inherent positive economic value of the material, the physical form of the material, and absence of damage incidents attributable to the material.” 62 FR 26011. Powder, conversely, does not have a physical form similar to scrap metal and can be dispersed into the environment during subsequent handling, which can result in damage incidents. Moreover, tantalum powder may ignite spontaneously in air<sup>6</sup> and can therefore pose a risk during recycling. Therefore, powder satisfies neither the definition of scrap metal nor the underlying rationale for the exemption.<sup>7</sup> Thus, if the tantalum powder exhibits a hazardous waste characteristic per 40 CFR part 261 subpart C, it would be considered a hazardous waste even when sent for recycling.

As noted earlier, processed scrap metal when recycled under 40 CFR 261.4(a)(13), and all other scrap metal when recycled under 40 CFR 261.6(a)(3)(ii), are both excluded from RCRA hazardous waste export and import requirements. However, if you propose to import or export non-agglomerated tantalum powder that exhibits a hazardous characteristic, it would be considered a RCRA hazardous waste, and you must comply with RCRA hazardous waste import and export requirements (40 CFR 262, Subparts E, F, and H). You can find information about the RCRA import and export requirements on our website at <https://www.epa.gov/hwgenerators/basic-information-resource-conservation-and-recovery-act-rcra-import-and-export>. In addition to the federal hazardous waste regulations, the U.S. importer and exporter, U.S. transporter, and U.S. treatment, storage and disposal facility must comply with all applicable state regulations.

For exports of hazardous waste, please note that such shipments are subject to not only applicable U.S. requirements for exports but also applicable regulations for imports in the destination country, applicable regulations of transit countries, and any applicable international agreement. You can use a tool available on the website for The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal at [http://ers.basel.int/BC\\_ControlSystem/BC-ControlTool.htm](http://ers.basel.int/BC_ControlSystem/BC-ControlTool.htm) to learn about the import requirements of the more than 180 countries that are Parties to the Convention.

---

<sup>4</sup> Further guidance on agglomerated materials is available in EPA’s 1997 memo regarding the regulatory status of agglomerated drosses (RCRAOnline # 14195).

<sup>5</sup> J. Gill, AVX Ltd. *Basic Tantalum Capacitor Technology*, <http://www.avx.com/docs/techinfo/Tantalum-NiobiumCapacitors/bstcant.pdf>

<sup>6</sup> Material Safety Data Sheet: Tantalum Products. Materion Advanced Materials, Technology and Services, WAMTF-031 <https://wcam.engr.wisc.edu/Public/Safety/MSDS/Tantalum.pdf>

<sup>7</sup> In 1992, EPA made a similar determination about similar fine materials (shredded pieces, sweeps, ash, fluff, and dust) generated from the processing of spent circuit boards, concluding that, unlike the parent spent ‘circuit boards, such fine materials are not scrap metal because they are “inherently different from the more ‘traditional’ scrap metal materials,” they allow for “dispersion of hazardous constituents,” and thus are waste materials subject to regulation. RCRAOnline # 11689, *Regulatory Status of Printed Circuit Boards* (August 26, 1992).

If you have any additional questions about import and export regulations, please contact Lia Yohannes of my staff at 703-308-8413 or [yohannes.lia@epa.gov](mailto:yohannes.lia@epa.gov) and if you have any questions about scrap metal recycling, please contact Tracy Atagi at 703-308-8672 or [atagi.tracy@epa.gov](mailto:atagi.tracy@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Barnes Johnson", with a long horizontal flourish extending to the right.

Barnes Johnson, Director  
Office of Resource Conservation and Recovery