June 18, 2012

Regulatory Policy Division,
Bureau of Industry and Security
U.S. Department of Commerce,
Room 2099B
14th Street and Pennsylvania Avenue NW
Washington, D.C. 20230.

publiccomments@bis.docs.gov

Re: RIN 0694–AF53: Revisions to the Export Administration Regulations (EAR): Control of Energetic Materials and Related Articles That the President Determines No Longer Warrant Control under the United States Munitions List (USML)

Dear Sir or Madam,

Valimet, Inc. (DDTC Code M-4063) submits this letter in response to the call for public comments by the Department of Commerce, Bureau of Industry and Security (BIS) on the proposed revisions to the Export Administration Regulations (EAR) concerning the means by which articles that the President determines no longer warrant control under Category V of the U.S. Munitions List (USML) would be controlled under the Commerce Control List (CCL). See 77 Fed. Reg. 25932 (May 2, 2012). Located in Stockton, California, Valimet, Inc. is a small business specializing in the production of spherical aluminum and aluminum alloy powders for nearly 50 years. Valimet spherical aluminum powders are used in a wide range of predominately commercial and civil applications, including the production of conductive inks for photovoltaic applications, automotive pigments, thermal spray applications, the manufacture of refractory materials and heat management devices. Spherical aluminum powders may also be used as a component in the manufacture of commercial and military propellants and explosives.

Valimet supports, in principle, the proposal of the U.S. Department of State to move certain energetic materials, including spherical aluminum powders, from Category V of the USML to the Commerce Control List (CCL), shifting control of these materials from the International Traffic in Arms Regulations (ITAR), administered by the U.S. Department of State, to control under the Export Administration Regulations (EAR), administered by the U.S. Commerce Department (see 77 Fed. Reg. 25944 (May 2, 2012)). In the context of the proposed rule, Valimet agrees that, of the proposed ECCN numbers and categories, including spherical aluminum powder in ECCN 1C111 on the CCL would be appropriate (see BIS Proposed Rule, 77 Fed. Reg. 25932 (May 2, 2012)). Valimet is providing additional comments, below, on some of the details of the proposed 1C111 definitions and descriptions as they relate to spherical aluminum powders.

As proposed, the list of items to be controlled under ECCN 1C111 appears to combine the description of spherical aluminum powders which currently appears in the Commerce Control List ECCN 1C111 and the current description of spherical aluminum powders as it appears on the USML, Category V (c)(5). Specifically, proposed ECCN 1C111a.1.a would control spherical aluminum powders, with particle size of less than 200 micrometer (particle size being defined as the mean particle diameter, on a weight basis), with an aluminum content of 97% or more, if greater than 10% of the particles are less than 63 micrometers in diameter. Proposed ECCN 1C111 a.1.b would control aluminum powders with greater than 99% purity, if greater than 50% of the particles are spheroidal in shape or are produced by an inert gas atomization process and with a particle size of less than 60 microns. It is not at all clear from these descriptions what is or is not being controlled. Specifically, a.1.a appears to control all spherical aluminum powders with a weight mean diameter of 200 micrometers or less, which would encompass essentially all spherical aluminum powders being produced. Valimet is of the opinion that this description is overly broad and controls essentially all sizes of spherical aluminum powders currently produced, even though the vast majority of spherical aluminum powder production (greater than 90%) has no missile propellant application. We would suggest a narrowing of the particle sizes to be controlled to a range more in keeping with those particular particle sizes that may have application in propellant manufacture, excluding those particle size ranges which have solely commercial applications and are not currently used in the manufacture of propellants. It is also not clear as to what is meant by "spheroidal" in the context of the description in a.1.b.2, or by what means the percentage of "spheroidal" particles is to be measured. In addition, the particle size of 60 micrometers in a.1.b.2 appears to be redundant in relation to the 200 micrometer particles size indicated in a.1.a. Valimet also feels that the 60 micrometer or less particle size in a.1.b.2 is still overly broad, in that it encompasses finer particle sizes, which also have no use in propellant applications. Once again, we suggest a revision in the particle size description that would streamline parts a.1.a. and a.1.b. in the proposed ECCN 1C111 by incorporating a single particle size description with an upper and lower boundary. Such a revision would more accurately reflect the size of spherical aluminum powders which may have specific application in the manufacture of propellants and better serve the

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missile technology control and non-proliferation purposes of the control category, while not unnecessarily limiting the wholly commercial end uses of other types of spherical aluminum powder.

Concerning the definition of particle size and the means used to measure it, in the Related Definitions section under ECCN 1C111, particle size is to be determined "through the use of best industrial practices." However, in proposed a.1.a, the methods to be used to determine particle size are limited to ISO 2591:1988 (sieving techniques) or JIS Z8820 (sedimentation). While the sedimentation method is most appropriate in the determination of particle size for soils and other sediments, it is not widely used for characterization of particle size distributions in the production of aluminum or other metal powders, or, in particular, the specification of particle size distributions in propellants. The use of the Light Scattering method for determining particle size distributions in metal powders, as described in ASTM standard B 822-02 is widely used in the metal powder industry and in the manufacture of propellants and would be more appropriate than the two methodologies indicated in the proposed rule. Valimet requests that, at a minimum, the ASTM standard identified here be listed in the Related Definitions section of ECCN 1C111.

With that said, Valimet asserts that even the proposed Commerce Control List control for spherical aluminum powder is too stringent. The technology required for the production of atomized, spherical aluminum powder is well known and is readily available in the public domain. Papers highlighting specific details of the production of atomized spherical powders have been publically presented at international metallurgical conferences and published in various metallurgical journals for many years (an internet search, using keywords such as "atomization of aluminum powder" will produce literally dozens of examples. Some sample references are attached as annex material) . Spherical aluminum powder has been and is currently being produced in many foreign countries, including Brazil, China, France, Germany, India, Iran, Japan, Russia and the United Kingdom. Samples of spherical aluminum powder from non-U.S. sources have been evaluated and found to be essentially identical to spherical aluminum powder produced in the United States. Because of this, and the fact that there are no significant differences between the spherical aluminum powders used in propellant applications and the same spherical aluminum powders used in commercial applications, Valimet believes that the imposition of the very restrictive export licensing controls on spherical aluminum powder described in the proposed rule making does nothing to enhance the security of the United States. In fact, these controls have a distinctly chilling effect on the ability of domestic producers of spherical aluminum powder to compete in the international marketplace.

In conclusion, while Valimet supports the proposed movement of spherical aluminum powders from the USML to the Commerce Control List, we suggest that the most appropriate classification for spherical aluminum powder would be EAR 99. Such a classification would help to facilitate the ability of domestic producers of spherical aluminum powder to compete in the international marketplace and would be unlikely to harm the national security interests of the United States. If spherical aluminum powder is to be classified under ECCN 1C111, we have also identified several problem areas with the proposed description of the types of spherical aluminum powders to be controlled under ECCN 1C111, particularly as it relates to particle size. Our position is that the proposed description is confusing as to the specific shapes and particle sizes that are subject to control. We also feel that the size range that is proposed to be controlled is overly broad, including many sizes that have no military or propellant applications. In addition, Valimet is suggesting that the methods indicated for determining particle size are inappropriate for metal powders and a more appropriate method (e.g. ASTM B-822-02) should be included in the definitions section of ECCN 1C111.

Valimet is prepared to provide any further information that the Bureau of Industry and Security may require to assist in the final rule making process. We thank you very much for your consideration of these comments.

Sincerely,

David L. Oberholtzer
Director, Corporate Services
Valimet, Inc.

Annex: Samples of Articles on the Production of Atomized Aluminum Powders

1). A. Lawley, "Preparation of Metal Powders", Annual Review of Material Science, August, 1978, pp. 49-71

2). S.E. Klar & J.W. Fesko, "Gas and Water Atomization", ASM Handbook, ASM International, USA, 1984, pp. 25-39

3). A. Unal, "Liquid Breakup in Gas Atomization of Fine Aluminum Powders", Metallurgical and Materials Transactions B, Vol. 20, No. 1 (1989), pp. 61-69.

4). J.J. Dunkley, "Atomization, Powder Metal Technologies and Applications", ASM Handbook, ASM International, Ohio, 1998, pp. 35-52.

5). Hnin Yu Khaing & Tint Tint Kywe, "Production of Fine Aluminum Powder from Metallic Aluminum", First International Conference on Interdisciplinary Research and Development, Thailand, 31 May – 1 June, 2011.