May 30, 2012

To: DDTCResponseTeam@state.gov
Publiccomments@bis.doc.gov

From: Bill Root, waroot23@gmail.com, tel. 301 987 6418

Subject: ITAR Amendments - Category V RIN 1400-AD02
EAR Revisions - Energetic Materials RIN 0694-AF53

On May 17, 2012, the following comments were presented to the Materials Technical Advisory Committee for its consideration.

The State proposed rule asks the public to identify any potential lack of coverage in the proposed State and Commerce rules compared with Wassenaar Munitions List Item 8. It also refers to the "the national security objective of greater interoperability with U.S. allies." The following not only identifies present WML (and MTCR) coverage omitted from the proposed rules but also coverage identified in more than one item in the proposed rules and proposed coverage not now included in WML. Such proposed U.S. unilateral coverage would be more effective if included on the WML.

<u>It is recommended that the United States seek Wassenaar agreement along the lines of the proposed rules before putting them into effect in U.S. regulations.</u>

<u>The two proposed rules would omit the following WML 8 coverage:</u>

8.a.34 Organic explosives not listed elsewhere in ML8.a and having all of the following:
- a. Yielding detonation pressures of 25 Gpa (250 kbar) or more; and
- b. Remaining stable at temperatures of 523K (250^{o}C) or higher, for periods of 5 minutes or longer.

to the extent not covered by 1C608.n

8.b.1 Any United Nations (UN) Class 1.1 solid "propellant" with a theoretical specific impulse (under standard conditions) of more than 250 seconds for non-metallized, or more than 270 seconds for aluminized compositions;

8.b.2 Any UN Class 1.3 solid "propellant" with a theoretical specific impulse (under standard conditions) of more than 230 seconds for non-halogenized, 250 seconds for non-metallized compositions and 266 seconds for metallized compositions

to the extent not covered by proposed

V.b.1 Any solid propellant with a theoretical specific impulse (see paragraph(k)(4) of this category) greater than:
- (i) 240 seconds for non-metallized, non-halogenated propellant;;
- (ii) 250 seconds for non-metallized, halogenated propellant; or
- (iii) 260 seconds for metallized propellant

8.b.6 Any “propellant” containing substances specified by ML8.a
to the extent not covered by 1C608.h or k

8.e.6 Energetic monomers, plasticizers or polymers, specially formulated for military use and containing any of the following:
a. Nitro groups;
b. Azido groups;
c. Nitrate groups;
d. Nitraza groups; or
e. Difluoramino groups
to the extent not covered by 1C608.n

8.f.4.e Other adducted polymer ferrocene derivatives
to the extent not covered by proposed V.f.4.v - xv

<u>The proposed rules include duplicative coverage of the following:</u>

IRFNA V.d.10 and 1C111.a.3.e

HTPB V.e.7 is a subset of 1C111.b.2 (The objectives of both are the same, to control a missile binder. V.e.7 does so with technical precision.)
<u>It is recommended that MTCR revise 4.C.5.b to be identical to V.e.7, which is identical to WML 8.e.12, and that then 1C111.b.2 be deleted.</u>

chlorine trifluoride 1C111.a.3.f and 1C238

Spherical aluminum powder 1C111.a.1.b is a subset of 1C111.a.1.a

<u>The proposed rules include the following not now covered by WML 8:</u>

V.a.11 DNAN

V.a.13.I, iii, iv DAAF, DAAFox, ANF, ANAzF

V.a.14 GUDN

V.a.23.iii difluorinated derivatives of RDX

V.a.27.ii LAX

V.a.37 ionic materials

V.b.1 to the extent not included in WML 8.b.1 or 2 (see above for reverse)

V.c.5		fuel, pyrotechnic, or energetic mixtures having any nanosized aluminum, beryllium, boron, zirconium, magnesium, or titanium, as follows: particle size less than 200 nm in any direction; and 60% or higher purity
V.c.6.ii	MTV	
V.e.8		DAMTR
V.e.9.iii, iv, v		NENAS N-Propyl, N-Butyl, N-Pentyl
V.e.11		PNO
V.f.4.v-xv		specified ferrocene derivatives to the extent not adducted polymer
V.f.16.i		HX
V.f.21		TEPB
V.g.2		DADN
V.h		classified
V.i.		developmental
1C608.a		propellants having nitrocellulose with nitrogen content greater than 12.6%
1C608.b-g, j		shock tubes, cartridge power devices, detonators, igniters, oil well cartridges, boosters, commercial pyrotechnic devices

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Dear DDTC,

In an effort to assist the Department with its assessment on Category V of the US Munitions List and in support of the President's export reform initiative, Restek Corporation has the following comments to offer. These comments are based on our extensive industry experience as manufacturer and seller of three mixtures and compounds that are currently designated in USML Category V:

Restek Corporation is a supplier of chromatography consumables. These consumables are used in commercial labs to assist companies monitor the quality of air, water, soil, foods, pharmaceuticals, chemical and petroleum products. Specifically, our organic chemical reference standards are used for calibrating chromatography instruments employed in analyzing samples for/from markets such as Foods, Flavors and Beverages, Clinical, Forensic and Toxicology, Petroleum and Petrochemical, Pharmaceutical, and Environmental. Restek sells and distributes these compounds both domestically and internationally. The ITAR has a direct impact on our international business because three of the chemicals listed on the USML are used in very small amounts in chromatography consumables we manufacture primarily for environmental analysis of waste water, drinking water, soil, and solid waste,– as required by the U.S. Environmental Protection Agency (EPA) and other regulatory organizations charged with environmental and public health monitoring world-wide. As an example, the U.S. EPA methods 8095 and 8330 contain several items currently listed on the US Munitions List, including the following USML-designated chemicals which Restek manufactures and sells domestically:

RDX and its derivatives (CAS 121-82-4) [Category V(a)(20)]
HMX and its derivatives (CAS 2691-41-0) [Category V(a)(12)]
Tetryl (CAS 479-45-8) [Category V(a)(25)]
1,3,5-trichlorobenzene (CAS 108-70-3) [Category V(g)(7)]

There is an extensive industry record of the above mentioned chemicals being included in reference standards which are manufactured and sold on the international market for the commercial sectors listed above, with extensive application in environmental sector.

A typical reference standard produced and sold by Restek contains one or more organic compounds diluted in a liquid solvent, at a known concentration and packed in a 1 mL flame sealed ampul. The typical concentrations for the compounds are 0.001 ng/mL – 100,000 µg/mL. With the concentration and package size in mind – this means each 1 mL ampul contains less than 100 mg of each targeted compound. With this in mind, Restek respectfully requests the USG reviewers of Category V consider the benefit of establishing a "bright line" of controls for the four chemical listed above by quantifying what level of concentration of these chemicals would justify continued controls as munitions items of Category V. We would be pleased to discuss further with you what levels of concentration would reasonably distinguish commercial application, such as with chromatography consumables versus concentrations that would have some utility for military application.

As you examine those applications well-established in the commercial marketplace for these chemicals, and devise a "di minimus" level, as is currently done for other chemicals and compounds within the current USML Category V, the Department can in a meaningful way advance its objective of establishing "bright lines" that convert the USML into a positive list of export controls and enable the U.S. industrial base in such products to expand as international markets are more readily accessible to U.S. companies such as Restek Corporation.

Thank you for considering our suggestions and comments, and we look forward to working further with you as you continue your critical work in export controls reform. Should you have additional questions please don't hesitate to contact us.

Best Regards,

Mark Williams
Export Compliance Manager
Restek Corporation
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June 18, 2012

PM/DDTC, SA-1
12th Floor
Directorate of Defense Trade Controls
Office of Defense Trade Controls Policy

Attention: USML — Positive List
Bureau of Political Military Affairs
U.S. Department of State
Washington, D.C. 20522-0112

DDTCResponseTeam@state.gov

Re: RIN 1400-AD02: Amendment to the International Traffic In Arms Regulations: Revision of U.S. Munitions List Category V

Dear Sir of Madam,

Valimet, Inc. submits this letter in response to the call for public comments by the Directorate of Defense Trade Controls (DDTC) on the proposed amendment to the International Traffic in Arms Regulations (ITAR: Revision of the U.S. Munitions List (USML) Category V. See 77 Fed. Reg. 25944 (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, DDTC's proposal 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 agrees that the movement of spherical aluminum powder from the USML Category V to the CCL, ECCN 1C111, assists in achieving the stated goal of the rulemaking, which is to ensure the USML and the CCL together control all the items that meet Wassenar Arrangement commitments embodied in Munitions List Category 8 (WA-ML8).

Valimet is prepared to provide any further information that DDTC 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.

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BORON PRODUCTS

NSF Registered to ISO 9001

June 14, 2012

Ms. Candace M. J. Goforth
Acting Director
Office of Defense Trade Controls Policy
Department of State
Telephone (202) 663–2792
Email DDTCResponseTeam@state.gov

ATTN: Regulatory Change, USML Category V

RIN 1400–AD02

RE: 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 Ms. Goforth:

Boron Products, LLC (Boron) welcomes and appreciates the opportunity to provide comments in response to the proposed rule amendment of the International Traffic in Arms Regulations (ITAR) to revise Category V (explosives and energetic materials, propellants, incendiary agents, and their constituents) of the U.S. Munitions List (USML) to describe more precisely the articles warranting control on the USML.

Specifically, Boron would like to take the opportunity to provide feedback the following verbiage in paragraph (k) (3) in the proposed rule:

"(k) The following interpretations explain and amplify the terms used in this category and elsewhere in this subchapter:

> …(3) Paragraph (c)(4)(ii)(A) of this category does not control boron and boron carbide enriched with boron-10 (20% or more of total boron-10 content)."
>
> *For reference, Paragraph (c)(4)(ii)(A) reads as*
> *"(A) Boron (CAS 7440–42–8) or boron carbide (CAS 12069–32–8) fuels of 85% purity or higher and particle sizes of less than 60 micrometers;"*

The interpretation verbiage addresses the specific application of Commerce Control List (CCL) jurisdiction to products enriched with boron-10, which are included in ECCN# 1C225 of the Export Administration Regulation (EAR).

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For reference, ECCN# 1C225 reads as follows:
"Boron enriched in the boron-10 (10B) isotope to greater than its natural isotopic abundance, as follows: elemental boron, compounds, mixtures containing boron, manufactures thereof, waste or scrap of any of the foregoing."

Boron concurs with the application of CCL jurisdiction to boron-10 enriched boron and boron compounds, as boron-10 enriched products have well-established commercial markets and applications. The proposed written interpretation is reflective of past practices, and is supported by a commodity classification request (Case Number Z986698, dated May 4, 2005) which classifies fine particle size, high purity boron carbide powder enriched in boron-10 isotope as ECCN# 1C225.

Boron proposes that the scope of application of the proposed interpretation should be expanded to include other boron compounds specifically listed in Paragraph (c) (2). In addition, Boron proposes that the proposed interpretation should also include boron and boron compounds enriched in the boron-11 isotope. Boron-11 enriched boron and boron compounds are subject to CCL jurisdiction in the EAR99 catch-all classification. Like boron-10 enriched products, boron-11 enriched products have well-established commercial markets and applications.

Boron proposes amended verbiage for paragraph (k) (3) in the proposed rule, as follows:

(k) The following interpretations explain and amplify the terms used in this category and elsewhere in this subchapter:

…(3) Paragraph (c)(2) and Paragraph (c)(4)(ii)(A) of this category do not control boron and boron compounds enriched to greater than natural abundance of boron-10 or boron-11 (natural abundance is 20% total boron-10 content and 80% total boron-11 content).

We welcome feedback on our comments. If you would like further information, or would like to contact me directly regarding these comments, please contact me at scook@ceradyne.com or by phone at (918) 673-2201 x.2211.

Regards,

Sonja Cook
Sr. Compliance Manager
Boron Products, LLC

AUECO
ASSOCIATION OF UNIVERSITY EXPORT CONTROL OFFICERS

18 June 2012

Directorate of Defense Trade Controls
Attn: Category V Revision
Bureau of Political Military Affairs, U.S Department of State
Office of Defense Trade Controls Policy
PM/DDTC, SA-1, 12th Floor
Washington, D.C. 20522-0112

RE: Revision of U.S. Munitions List Category V (77 CFR 25944, May 2, 2012, Public Notice 7861)

To Whom It May Concern:

I am writing on behalf of the Association of University Export Control Officers (AUECO), a group of senior export practitioners at twenty-six accredited institutions of higher learning in the United States. AUECO members monitor proposed changes in laws and regulations affecting academic activities, and advocate policies and procedures that advance effective university compliance with applicable US export/import and trade sanctions regulations.

AUECO is specifically interested in contributing to the export control reform effort in order to ensure that the resulting regulations do not have a disproportionate impact on academic pursuits. As a result, AUECO is providing the following comments in response to the Department of State (DoS) proposal amending the International Traffic in Arms Regulations (ITAR) to revise Category V (Explosives and Energetic Materials, Propellants, Incendiary Agents and their Constituents) of the U.S. Munitions List (USML) to describe more precisely the Category V materials warranting control on the USML.

In the Federal Register notice, the DoS acknowledged that difficulties in interpreting the existing USML arise because the categories "are general and include design intent as an element of causing an item to be controlled." AUECO would like to emphasize that in order to create a "positive list" with a "bright line" between what is controlled on the USML and what is controlled on the Commerce Control List (CCL), it is critical for each entry to contain precise and specific terms as well as all relevant definitions for those terms. Steps should be taken to avoid ambiguous entries and to instead provide qualifying and clear descriptive terms as much as possible. With these considerations in mind, AUECO carefully examined the proposed rule and is providing the following recommendations.

<u>Removal of Catchall Categories</u>

For the most part, Category V of the USML, as currently written, is a positive list that specifies the materials covered by common chemical name and in many cases the specific CAS number.
AUECO would like to commend DDTC for making this Category even more specific by removing the catchall phrases, including but not limited to (a)(35), (b)(6), (b)(7), (c)(12), (e)(19) and (f)(21), found in

the current regulations. We also appreciate DDTC's decision to modify interpretation (i)(3) now located under section k (2) which specifies that the inclusion and/or transformation of a material subject to USML Category V is not in of itself ITAR controlled. Only in cases where the resulting material meets or exceeds the performance parameters of a USML Category V material or in instances when the Category V material can be recovered is it still controlled by the ITAR. That being said there are a few areas in which the proposed rule falls short.

The first problematic issue is the addition and/or retention of several limited 'catchall' categories including, but not limited to, the following proposed sections: (a)(37), (a)(38), (b)(1), (b)(2), (b)(3), (c)(3), (c)(4), (c)(8), (c)(11), and (f)(4)(xv). In keeping with the bright line determination AUECO recommends removing these limited catchall categories and replacing them with specific materials. When new materials are identified in the future, they should be designated as an emerging technology (0Y521) or directly added to the CCL or USML by publication of a new or revised ECCN or USML Category description in the Federal Register.

AUECO's second concern is the modification to USML Category V(a)(38) which previously specified a detonation velocity exceeding 8,700m/s, but has been revised under the proposed rule to read 8,000m/s. This reduction in the threshold value could result in a previously developed material that was determined either through a CJ or a self determination to be subject to the EAR becoming a Category V defense article. As one of the limited catch all subcategories mentioned in the previous paragraph, the preferred method for dealing with USML Category (a)(38) would be its deletion.

If DDTC, elects not to delete these limited catchall categories, AUECO recommends that the regulations be revised to ensure that such materials maintain their EAR control status after implementation of the proposed rule. If DDTC cannot provide for either of these options, then at minimum, it is requested that a phase in period be provided so that the affected community can review their existing inventory of materials to ensure that appropriate controls are implemented for materials that will become defense articles.

<u>Applicability of Category V §121.1(i) to the Products of Fundamental Research</u>

AUECO is concerned about the applicability of §121.1 Category V (i) to the products of US Government funded fundamental research. While it may seem unlikely that developmental explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors would be produced under a US Government funded fundamental research contract, it is possible that this could occur.

There will be a pronounced chilling effect on university fundamental research into all kinds of developmental materials if the mere presence of US Government funding means that the products of such research will be defense articles. Researchers will be unwilling to work on or bring their products of fundamental research (including experimental and research materials) into a US Government-funded project. If resulting materials will be automatically designated as defense articles, regardless of whether or not these items meet any performance criteria of Category V of the USML, the proposed revisions to Category V will act as a significant deterrent to the conduct of such research.

It is important to understand that fundamental research exploring the early stages of new materials is critical for the development of the next generation of explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors for use by US Government and industry. In order to support

the discovery of these next generation materials, it is critical to protect the earliest stages of research from regulation.

AUECO notes that the revised Category VII wisely avoids such a funding-related restriction on developmental ground vehicles. AUECO strongly recommends that DDTC delete USML Category V §121.1 (i) in its entirety or at minimum clarify that it would not, in fact, capture developmental explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors solely based on the fact that the effort was funded under a US Government contract.

The Need for Harmonized Definitions

AUECO would like to once again recommend that the proposed harmonized definitions be released prior to the next Federal Register notice requesting comments on export reform. Use of the pertinent definitions is critical to the interpretation of the regulations, assessment of the likely impact of the proposed changes, and would greatly enhance the quality and relevance of public comments.

We would further ask that the export community be offered the opportunity to comment not only on the proposed definitions once released, but also be afforded the opportunity to provide comments on previously closed proposed regulations when the proposed definition affects the interpretation and/or implementation of the proposed or final rule.

The Need for Reciprocal Licensing Exemptions/Exceptions

As previously expressed in our comments submitted to the Bureau of Industry and Security on September 13, 2011, AUECO is concerned that in some instances transferring items to the Commerce Control List (CCL) could result in technologies being regulated in a more restrictive manner than if they were controlled under the ITAR. Under the ITAR, important general exemptions (e.g. 22 CFR §§ 125.4(b)9, 125.4(b)(10) and 125.4(b)(7)) exist that can provide relief from licensing requirements; such exemptions are not currently available under the EAR.

AUECO strongly recommends that DDTC and BIS ensure that reciprocal exemptions or similar relief to licensing requirements be provided under the EAR. In the absence of reciprocal provisions under the EAR, moving items and technologies from the USML to the CCL will increase the licensing burden at academic institutions.

Closing

In closing, AUECO would like to express its appreciation for the opportunity to provide comments on these proposed changes. AUECO supports converting the USML into a “positive list”, and hopes that this step will reduce jurisdictional disputes and uncertainty.

AUECO also supports the elimination of catchall controls, but as noted above has concerns about the proposed revisions. We strongly recommend that DDTC regulate new materials through designation as an emerging technology (0Y521) or by directly adding the material to the CCL or USML by publication of a new or revised ECCN or USML Category in the Federal Register. The retention of catchall controls is antithetical to the stated goals of the export control reform effort.

Additionally, as currently written, the proposed revisions to Category V appear to create confusion and uncertainty in regards to the limited catchall phrases and the inclusion of US Government funding as a determinant of ITAR status. Absent the names and/or CAS numbers of the specific explosives, propellants, pyrotechnics, fuels, oxidizers, binders, additives, or precursors and the deletion of the subsection (i) of USML Category V, exporters may be forced to treat items and technologies that do not appear to provide a critical, substantial or significant military advantage as being ITAR controlled.

AUECO is concerned that without a lack of reciprocal licensing exemptions under the EAR, moving items and technologies from the USML to the CCL may create an increased licensing burden for universities. Additionally, a lack of harmonized definitions makes assessing the impact of the proposed revisions to Category V problematic. Harmonized definitions for key terms such as “fundamental research”, “technology”, “public domain”, etc., are absolutely necessary to analyzing the proposed rewrite.

AUECO remains committed to contributing to the export control reform effort, and welcomes any request for further clarification of the comments above. Again, thank you for the opportunity to provide input on this very important topic.

Sincerely,

Gretta N. Rowold
Chair

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June 18, 2012

Via Electronic Mail

Ms. Candace Goforth
ATTN: Regulatory Changes: ITAR Amendment – USML Category V
Office of Defense Trade Controls Policy
Directorate of Defense Trade Controls
Bureau of Political Military Affairs
U.S. Department of State SA-1, 12th Floor
Washington, D.C. 20522-0112

RE: Amendment to the International Traffic in Arms Regulations ("ITAR"): Revision of U.S. Munitions List Category V

Dear Ms. Goforth:

Sigma-Aldrich Corporation ("SIAL") appreciates the opportunity to comment upon the Proposed Rule concerning the Amendment to the International Traffic in Arms Regulations: Revision of U.S. Munitions List Category V, published in the Federal Register (77 Fed. Reg. 25944) on May 2, 2012 (the "Proposed Rule"). This Proposed Rule has been published in conjunction with a proposed rule from the Department of Commerce, Bureau of Industry and Security, which would amend several Export Control Classification Numbers ("ECCNs") within the Commerce Control List ("CCL").

SIAL is a leading life science and high technology company. Our chemical and biochemical products and kits are used in scientific research, including genomic and proteomic research, biotechnology, pharmaceutical development, the diagnosis of disease and as key components in pharmaceutical, diagnostic and other high technology manufacturing.

SIAL commends the U.S. Government's efforts to amend the U.S. Munitions List ("USML"), Category V, and its related controls within the Commerce Control List ("CCL"). We agree with the view expressed in the preamble to the Proposed Rule that the goals of the proposed revisions are to establish a "bright line" between the USML and CCL for the control of Category V explosive and energetic materials, propellants, incendiary agents, and their constituents, as well as to remove broad catchalls within Category V.

With these goals in mind, SIAL requests that the Department of State consider addressing and revising two aspects of USML Category V that are not contemplated in the Proposed Rule. First, SIAL recommends that Certified Reference Standards, Certified Reference Materials and Standard Reference Materials (referred to collectively as "CRS" that contain trace amounts of

certain chemicals controlled by USML Category V be removed from USML Category V and controlled under the CCL. Second, SIAL recommends that DDTC clarify what is intended to be covered by proposed USML V(c)(4)(ii)(B) and V(c)(4)(iii) by defining "alloys."

SIAL offers the following comments with respect to these recommended changes that we consider to be most critical:

Proposed Change #1: CRS with Trace Amount of USML Category V Chemicals Should be Controlled by the CCL

CRS that contain less than 0.5 grams total quantity of one or more USML Category V chemicals, when such amount comprises less than or equal to 1% of the total quantity of the CRS, should be specifically excepted from control under the ITAR and instead should be controlled for export under the CCL.

CRS are most often used as reference materials in analytical laboratories. By definition, a CRS covered under this proposed change lacks explosive properties and is not designed or intended to be used as an explosive. CRS do not have any military applications. In essence, the function of a CRS is to test a piece of equipment to ensure that the equipment can detect the known material (here explosives) contained in the CRS, so that when an unknown sample (such as soil or water) is tested on the equipment, the equipment can compare the contents of the unknown sample against known CRS previously used to calibrate the equipment. For this calibration to work, each CRS contains a trace amount of the material that the equipment will be used to detect so as to calibrate the equipment to ensure it is working properly for detection of such materials.

As written currently, USML Category V(i) contains the following interpretation:

> The resulting product of the combination of any controlled or non-controlled substance compounded or mixed with any item controlled by this subchapter is also subject to the controls of this category.

The Proposed Rule modifies this provision in a positive manner, proposing to change this interpretation to the following:

> The resulting product of the combination or conversion of any substance controlled by this category into an item not controlled will no longer be controlled by this category provided the controlled item cannot easily be recovered through dissolution, melting, sieving, etc. For example, beryllium converted to a near net shape using hot isostatic processes will result in an uncontrolled part. A cured thermoset containing beryllium powder is not controlled unless meeting an explosive or propellant control. The mixture of beryllium powder in a cured thermoset shape is not controlled by this category. The mixture of controlled beryllium powder mixed with a typical propellant binder will remain controlled by this category. The addition of dry silica powder to dry beryllium powder will remain controlled.
>
> *See* Proposed USML Cat. V(k)(2).

This proposed change does create a carve out for certain products that are mixtures or compounds of controlled and non-controlled materials, provided the controlled materials "cannot easily be recovered." Although SIAL believes that the CRS meet this criteria, the subjective nature of "cannot easily be recovered" introduces uncertainty. SIAL recommends, rather, that CRS as a group be excepted from the USML so as to remove any uncertainty about whether the standard of "cannot easily be recovered" has been met. Given the nature of CRS, the amount of Category V materials contained in each and the non-explosive nature of the CRS, the removal of these from the USML would not create national security risks. To the contrary, removing CRS from the USML would promote the underlying goal of export control reform of building higher walls around fewer items that truly warrant substantial controls.

For the aforementioned reasons, SIAL suggests revising the proposed text of USML Category V to include the following additional interpretation in a new subsection V(k)(6):

> *Certified Reference Standards, Certified Reference Materials and Standard Reference Materials are not controlled under this Category V where such item is a mixture or compound of non-controlled and controlled items if it contains less than 0.5 grams total quantity of one or more USML Category V chemicals, when such amount comprises less than or equal to 1% of the total quantity of the Certified Reference Standard, Certified Research Material or Standard Reference Material, and where such items lack explosive characteristics.*

SIAL believes that while DDTC would be designating a different threshold for the control of trace amounts of these chemicals within a CRS, the CCL provides a robust regulatory framework to effectively control these trace amounts of chemicals.

Examples of CRS that would be affected if this suggested change is adopted:

Material name within Solvent Mixture	Regulated component	Quantity of regulated component	% of regulated component	Current USML Category	Proposed revised USML Category
HMX in Acetonitrile	HMX	0.0012 g	0.1%	V(a)(12)(i)	V(a)(15)
RDX in Acetonitrile	RDX	0.0012 g	0.1%	V(a)(20)(i)	V(a)(23)(i)
Tetryl in Acetonitrile	Tetryl	0.0012 g	0.1%	V(a)(25)	V(a)(29)
Butanetriol Trinitrate in Pyridine	Butanetriol	0.00008 g	0.008%	V(b)(e)(3)	V(b)(e)(3)

SIAL sells a variety of each of the listed CRS as both standard catalog offerings and custom-made products.

While it may be possible to isolate the regulated USML Category V chemical from the solvent in these CRS, the process involved would be labor-intensive and not cost-effective, particularly given the amount of USML controlled material that would be yielded from each vial. These types of CRS are typically sold in ampules of approximately 1 to 5 milliliters. For instance, to yield one kilogram of HMX, RMX or Tetryl from any of the first three items listed above, one would have to accumulate 833,000 product ampules. At current prices, this would cost approximately $16,600,000. The materials contained in all of the ampules would need to be combined and then the Acetonitrile would need to be evaporated off. Evaporation at an ambient temperature would take days; evaporation by heating would take only hours; however, this evaporation method requires costly laboratory equipment (prices for rotary evaporators start at approximately $32,000) and great care, as the heat could char the regulated material. Regardless how the Acetonitrile is evaporated, degradation of the regulated material cannot be ruled out. After all of this effort and cost, the process would yield only 1 kilogram of regulated material. Sales are typically in quantities of a few to a few dozen; selling hundreds of thousands of ampules would stand out under any circumstances.

SIAL suggests that these CRS containing trace amounts of USML Category V materials, once removed from the USML, be controlled by a new ECCN Category: 1C994. We recommend that this new ECCN 1C994 have controls parallel to those in ECCN 1C995 and therefore be subject to Anti-Terrorism and targeted Regional Stability controls.

> ***Proposed text of new ECCN created for CRS containing certain trace chemicals under USML Cat V: ECCN 1C994***
>
> 1C994: *Certified Reference Standards, Certified Reference Materials and Standard Reference Materials which item is a mixture or compound that contains less than 0.5 grams total quantity of one or more USML Category V chemicals and such amount comprises less than or equal to 1% of the total quantity of the Certified Reference Standard, Certified Research Material or Standard Reference Material, and where such items lack explosive characteristics.*

In the alternative, if DDTC and BIS believe more stringent controls under the EAR are warranted, SIAL respectfully suggests that the items removed from USML Category V pursuant to proposed new subsection V(k)(6) described above be controlled under a new ECCN 1C608.o as follows:

> ***Proposed text of new ECCN created for CRS containing certain trace chemicals under USML Cat V: ECCN 1C608.o***
>
> 1C608.o: *Certified Reference Standards, Certified Reference Materials and Standard Reference Materials which item is a mixture or compound that contains*

less than 0.5 grams total quantity of one or more USML Category V chemicals and such amount comprises less than or equal to 1% of the total quantity of the Certified Reference Standard, Certified Research Material or Standard Reference Material, and where such items lack explosive characteristics.

Proposed Change #2: Include a definition of Alloys within USML Category V

SIAL suggests that DDTC clarify what is intended to be covered by proposed USML V(c)(4)(ii)(B) and V(c)(4)(iii) by defining "alloys." SIAL suggests revising the proposed text of USML Category V to include the following additional interpretation in a new subsection V(k)(7):

For purposes of this Category V, the term "alloy" means a substance having metallic properties and being comprised of two or more chemical elements of which at least one is a metal.

This definition of alloy is taken from the ASM (American Society for Metals) International's reference definitions. This proposed interpretation provides greater clarity and consistency with international definition standards for material engineering terms.

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We appreciate DDTC's effort to give industry the opportunity to comment on the revisions to USML Category V before it becomes law. Should you have any questions about our proposed comments or if you would like additional information, please do not hesitate to contact Leigh Davidson at (314) 910-2387 or leigh.davidson@sial.com.

Respectfully submitted,

George L. Miller
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Sigma–Aldrich Corporation