

Section 232 National Security Investigation of Steel Imports
Comments by U.S. Producer Metglas, Inc. Requesting the Inclusion of Amorphous Steel

May 31, 2017

The present document is submitted to the Department of Commerce (“Commerce”) pursuant to its April 26, 2017 Notice of request for public comments and public hearing on the Section 232 national security investigation of steel imports (“Investigation”).

It is submitted on behalf of U.S. steel producer Metglas, Inc. of Conway, South Carolina (“Metglas”) to request that amorphous steel, a high-end product with various defense applications, be included within the scope of the Investigation.

Accordingly, each of the criteria of § 705.4 of the National Security Industrial Base Regulations (“NISBR”) enunciated in Commerce’s Notice as being of particular interest in the context of the Investigation is addressed in order below.

1. Background on Metglas and Amorphous Steel

The Company

Metglas is a Delaware corporation with a principal place of business at 440 Allied Drive, Conway, SC 29526. It is a fully owned subsidiary of Hitachi Metals America Ltd., a trading company based in Purchase, NY. The company was founded in 2003 by Hitachi Metals, Ltd. to acquire the amorphous steel business of Honeywell International Inc. (“Honeywell”), formerly AlliedSignal, Inc. (“Allied”). Building upon research originally conducted by scientists at Caltech in the 1960s, Allied invested considerable resources estimated at more than \$[] million since the early 1970s to develop amorphous steel commercially.

Based on this valuable proprietary technology developed in the United States over decades, Metglas has continued since 2003 to refine the process used to create its high-end amorphous steel products. Metglas has invested nearly \$[] million in Research and Development (“R&D”) related to amorphous steel products. Its total amorphous steel casting capacity in the United States is approximately [] metric tons. Metglas thereby accounts for over []% of U.S. capacity. Its South Carolina headquarters consists of a [] square foot facility located on [] acres and employing [] individuals involved in the design, engineering, research, development, manufacture, and testing of amorphous steel.

The Product

Amorphous steel is an alloy steel with advantageous magnetic properties necessary for use in distribution transformers, electric reactors, electric machines and middle and high frequency transformers. Amorphous ribbon (“AR”) is typically rapidly quenched on a rotating quench surface in the form of a ribbon of infinite length, width from 1 inch (25mm) up to 8.5 inches (216 mm), and thickness of nominally one one-thousandths of an inch (0.001” or 25 micrometers), with a maximum thickness of about 0.0012” (30 um). The iron-

based amorphous steel is predominantly iron (Fe) (up to 82%), with boron (B) (8 percent to 15 percent), and silicon (Si)(5 percent to 10 percent) (SA1 and HB1M). AR may also contain carbon (C) alloyed to allow for its amorphous structure. Up to 25% of the iron (Fe) may be replaced with cobalt (Co) to allow for higher induction, to be used in pulse power applications (2605CO alloy). This AR is normally imported in the form of a single-ply coil up to 1000kg in weight, or in a multiple-ply format where 3 to 10 sheets are co-wound onto a single hub.

AR may be incorporated into metal cores that are made by cutting the ribbon to length, stacking to a preferred cross section, and forming them around a rectangular mandrel to form a four-sided shape that has three (3) continuous sides and a fourth that can be laced together closed. The AR may also be slit to a narrower width and wound into a circular or generally rectangular shape, may be co-wound with an insulating layer, and may be cut into multiple sections. Cores formed to size may range from 10kg to over 1000kg. Amorphous metal in coils, cut-to-length, stamped and incorporated into cores comprise a single industry. This amorphous steel industry is distinct and separate from the industry producing other types of electrical steels.

Amorphous steel is normally classified in subheadings 7226190000 and 7226199000 of the Harmonized Tariff Schedule of the United States (HTSUS), but may also enter under HTSUS subheadings 72029999, 72249090, 72269199, 7226990180, and 7325991000. Iron based amorphous alloy cores are normally classified in subheadings 8504900020 and 8504909542 of the HTSUS, but may also enter under HTSUS subheadings 73269010.

The benefits of amorphous steel over traditional alternatives are significant and include extremely low core loss, and high squareness ratio – low coercive force. It differs from traditional alternatives because its non-crystalline structure and unique physical and magnetic properties combine high permeability, strength, and hardness with flexibility and toughness. Amorphous steel helps companies reduce operating costs, reinforce energy conservation efforts, and increase application efficiency.

Amorphous steel's properties also make it highly desirable for use in defense and military applications, stealth vehicle manufacture and magnetic sensing. It may also have the potential for use in medical applications in place of titanium. All of these advantages depend on the particular alloy and manufacturing technique used, both of which have been developed and refined exclusively in the United States over the course of decades and after enormous investment, first by Allied and since 2003 by Metglas.

Extensive additional information on Metglas' amorphous steel production activities, as well as the development of new applications and defense/military uses, is provided in the eight different parts of **Annex 1**.

2. Quantity of steel or other circumstances related to the importation of steel

To the best of Metglas' knowledge, imports of amorphous steel from China have increased in recent years from virtually zero to capture 15% of the U.S. domestic market. Chinese production capacity has been increasing rapidly from a range of 6,800-15,807 metric tons in 2012 to 10,540-24,600 metric tons in 2014, with an additional capacity increase of

83.9% reported in the first six months of 2015 over the same period the previous year. As a result, Chinese producers’ capacity exceeds domestic demand in China.

The resulting sales below actual cost by foreign companies of not only amorphous steel, but also silicon steel (grain oriented electrical steel or “GOES”), in the U.S. domestic market have caused severe injury to Metglas. Although the amorphous steel industry is distinct and separate from the industry producing other types of electrical steels, imports of other electrical steels have negatively impacted the U.S. amorphous steel industry. For example, while GOES and amorphous steel are indirect competitors, the crash in the overall electrical steel market has damaged amorphous steel as well.

Evidence gathered through market experience and contacts confirms that state-supported Chinese producers of amorphous steel intend to undercut prices in the U.S. domestic market by 20% or more. A comparison of U.S. market prices for a typical amorphous steel product and the cost of production estimated for Chinese producers in relation to that product suggests that Chinese producers may be selling at a dumping margin in excess of 30%. Data supporting this estimate are presented in a table attached as **Annex 2** to the present document.

Due to severe competition from these unfairly traded imports of both amorphous steel and amorphous metal from China, Metglas’ production has been falling steadily from [] metric tons in fiscal 2013 to [] metric tons in fiscal 2016. Revenues have dropped correspondingly from \$[] million in fiscal 2013 to \$[] million in fiscal 2016. The reduction in volume also affects Metglas’ cost efficiency, adding a penalty cost of another \$[] to the material that is sold domestically, which would otherwise be profit. These developments are reflected in the table below:

Metglas – Reduced Domestic Production and Revenues due to Foreign Imports

Period	Countries (Regions)	Domestic Production (ton)	Quantity Percent	Quantity Change	Value (\$000 USD)
Fiscal 13 (Yr Ending 3/31/14)	Total Domestic				
	Metglas, Inc.				
Fiscal 14 (Yr Ending 3/31/15)	Total Domestic				
	Metglas, Inc.				
Fiscal 15 (Yr Ending 3/31/16)	Total Domestic				
	Metglas, Inc.				
Fiscal 16 (Yr Ending 3/31/17)	Total Domestic				
	Metglas, Inc.				

As mentioned above, the repercussions of the crash in the overall electrical steel market on the amorphous steel market have also forced Metglas to lower its amorphous steel prices as a result of foreign imports’ aggressive move into the U.S. market for high-quality

electrical steel. Details relating to GOES prices in the United States are provided in Annex 3. For example, between 2015 and 2016, Metglas had to reduce prices to its U.S. client [] from \$[]/kg to \$[]/kg for [] and from \$[]/kg to \$[]/kg for []. This represents a drop of approximately []% and []% respectively for two of Metglas’ key products to one of its main clients. Metglas was also forced to reduce its prices comparably for its other main U.S. customer, []. These developments are reflected in the table below:

Metglas – Reduced Prices for Key Products to Major U.S. Customer due to Foreign Imports

Product	2015 Price	2016 Price	Price Difference
[]	\$[]/kg	\$[]/kg	-[]%
[]	\$[]/kg	\$[]/kg	-[]%

3. Domestic production and productive capacity needed for steel to meet projected national defense requirements

With its total amorphous steel casting capacity in the United States of approximately [] metric tons, Metglas accounts for over []% of the U.S. capacity and, until recently, was meeting U.S. demand without operating at full production capacity. Therefore, Metglas is well positioned to meet future demand in the United States, including projected national defense requirements in a full range of defense and military applications, but only if it is afforded protection from foreign imports.

In the face of increased unfair competition from Chinese (amorphous and silicon steel) and other foreign (silicon steel) imports, Metglas has been forced to reduce production leading to lost revenue. These losses necessarily affect Metglas’ ability to continue investing in its leading technology and production facilities. Investment has been at the heart of Metglas’ business approach and success. Without sustained investment, Metglas’ capacity to meet national defense requirements will be impaired and may ultimately disappear.

Currently in 2017, despite Metglas’ factory capacity of approximately [] MT/M, current production is expected to be only [] MT/M due to increased unfair competition from Chinese and other foreign imports. This represents significantly reduced and alarmingly low capacity utilization of only []%. In fact, Metglas has had to [] as a direct result of the competition from Chinese and other foreign imports.

4. Existing and anticipated availability of human resources, products, raw materials, production equipment, and facilities to produce steel

Metglas has already suffered significant losses, reduced production, and cut employment as a direct result of the rapid penetration of the U.S. market by unfairly traded imports from China. Specifically, Metglas has stopped production []

], as reported above. As a result, Metglas' workforce has decreased from [] to [] employees between 2013 and 2017.

If Metglas' condition is allowed to worsen any further, the company may no longer be able to maintain the minimum human resources, production equipment and facilities required to produce its high-end amorphous steel products critical to so many applications in key downstream industries and in defense and military applications. A check on unfairly traded imports has become critical at this stage to allow Metglas to safeguard its remaining assets and proceed on a path to recovery.

5. Growth requirements of the steel industry to meet national defense requirements and/or requirements to assure such growth

Until recently, Metglas was able to meet demand for amorphous steel in the United States, including existing and projected national defense requirements in a full range of defense and military applications. Metglas has significant business ties to the U.S. Government and its affiliates. It is registered with the Office of Defense Trade Controls Compliance of the United States Department of State (registration code M24588 expiring 03/31/2018, under its parent company Hitachi Metals America Ltd.). It also has many projects that are regulated under the International Traffic in Arms Regulations ("ITAR") for multiple customers likely complying with the requirement under the Defense Federal Acquisition Regulations ("DFARS") Clause 252.225-7014: Preference for Domestic Specialty Metals. A table attached as **Annex 4** to the present document lists the ITAR projects on which Metglas has worked in recent years. Its customers include major U.S. entities including [

]. Though the project was not considered ITAR, inductor cores made for [] were for an essential national security project to scan the contents of incoming shipping containers. However, the reductions in Metglas' production and workforce caused by unfair competition from foreign imports threaten the company's ability not only to continue meeting these existing national defense requirements but also to grow in response to any increased demand in the context of defense and military applications.

Metglas is also currently working on [

]. In addition, Metglas is working with [] to supply [

]. The company is also working on [

[]]. It may also re-enter the [] market with [] in the next several years. [

], both significant customers of Metglas' [] alloy, routinely quote ITAR projects with [] alloys, and supply to the U.S. Government and Military, including []]. Currently, Metglas is the sole global supplier for the []].

Metglas thus has a significant impact beyond just the U.S. steel industry. The Brazing alloys are all Nickel based, but the technology of manufacture is essentially the same as the technology developed to cast commercial quantities of amorphous steel. ITAR customers for Braze products include major U.S. entities including [

]. Protecting the U.S. amorphous steel industry

would thus ensure that this vast selection of [] continues to be available in the United States.

6. The impact of foreign competition on the economic welfare of the steel industry

The impact of competition from China and other foreign manufacturers on the economic welfare of Metglas has been dramatic. Absent relief, Metglas will lose a substantial portion of its production capacity and may no longer be able to recover to ensure any supplies of amorphous steel are produced in the United States in the future.

For almost 10 years following the ownership change in 2003, Metglas experienced significant growth in productivity and quality. However, in the last 4 years, growth has been negative due to several main factors. Exports have significantly decreased, and domestic sales have remained stagnant despite extensive efforts to grow the business and increase market share. Unfair trade practices by China are the main cause of these negative trends.

Metglas – Reduced Domestic Production and Revenues due to Reduced Exports

Period	Countries (Regions)	Domestic Production (ton)	Quantity Change	Export Quantity (ton)	Quantity Change	Value (\$000 USD)
Fiscal 13 (Yr Ending 3/31/14)	Total Domestic					
	Metglas, Inc.					
Fiscal 14 (Yr Ending 3/31/15)	Total Domestic					
	Metglas, Inc.					
Fiscal 15 (Yr Ending 3/31/16)	Total Domestic					
	Metglas, Inc.					
Fiscal 16 (Yr Ending 3/31/17)	Total Domestic					
	Metglas, Inc.					

China has an overcapacity of steel production since its infrastructure growth leading to the 2008 Olympic Games stalled after the global financial crisis. Furthermore, through recent trade defense actions, China has closed off its market to imports of both GOES and amorphous steel imports with significant duties. First, China imposed antidumping duties against imports of GOES from Japan and Korea, causing producers from these two countries to find other outlets for their capacity and divert their exports to the United States. The protection thereby afforded Chinese producers Bao Steel and Wuhan Steel on their domestic market has caused these two companies also to export GOES to the United States at very low prices, resulting in depressed prices for high-quality electrical steel in the United States. This is the same steel that is used in high efficiency power transformers, which meet the new 2016

Department of Energy Efficiency Standard for Distribution Transformers, the exact industry in which Metglas competes. As noted above, while GOES and amorphous steel are indirect competitors, the resulting crash in electrical steel prices has damaged amorphous steel as well. Second, within the last year, China imposed antidumping duties against imports of amorphous metal from Japan and the United States – a duty of over 48.5% in the case of U.S. products – thereby effectively shutting out imports from the United States.

In addition, India established a Joint Economic Development Agreement with Japan, whereby exports from Japan were not assessed the same 10% duty that applies to most other imports, including amorphous steel from the United States. This created a strong disincentive for Indian customers to purchase products from the United States. The resulting advantage to Japan forced Hitachi Metals to either cut prices in the United States so that the total cost to India would remain the same, or supply the material out of their factory in Japan and allow its India customers to benefit from the agreement between India and Japan. The closing of the Chinese and Indian markets to imports of amorphous steel from the United States is dramatically reflected in graphs provided in Annex 5. From these graphs, it is clear that export volume to China has disappeared and Metglas has been forced to focus almost exclusively on the American and European markets. These trade actions in China and India are unfair to U.S. producers and have resulted in Metglas losing [] due to decreased exports.

China has been trying to cast iron-based amorphous metal ribbon for the past 35 years. Until two years ago, its producers were unsuccessful in producing large commercial quantities of the product. However, Chinese producers Antai and Yunlu succeeded in the last two years and have since ramped up very quickly. According to Metglas' latest intelligence, there are at least five companies, and possibly up to ten, that have now built or are building 15 casting lines in China. As a result, China's current capacity is approximately 70,000 MT per year and fast increasing. Thus, in a short time, Chinese producers have developed significant production capacity at little R&D cost through the misappropriation and extensive dissemination among related companies of Metglas' proprietary technology and know-how accumulated at considerable cost over decades. Consistently relying on unfair trade practices, Chinese producers have also systematically undercut prices in the U.S. market, starting with no presence on the U.S. market to capturing a 15% market share in very short order.

Over time, Metglas has made significant capital investments in the United States in plant, equipment and employment, as well as in engineering, testing, support, and product design of amorphous steel products. It has also invested in the exploitation of its trade secrets, including engineering and R&D. However, all of these investments in various aspects of production and sources of additional revenue stand to be lost if imports of Chinese amorphous steel into the United States continue unchecked under present or worsening injurious conditions.

7. The displacement of any domestic steel causing substantial unemployment, decrease in the revenues of government, loss of investment or specialized skills and productive capacity, or other serious effects

As a direct result of the rapid penetration of the U.S. market by unfairly traded imports from China and other foreign manufacturers, Metglas has reduced production, cut

employment and suffered significant losses. Because Metglas has stopped production [in two of its three furnaces], it has been forced to release approximately [] workers with specialized skills between 2013 and 2017. Metglas today is left with just [] employees. Its revenues also dropped from [] million in 2013 to [] million in 2016.

The reduction in production and resulting decrease in revenue negatively affect Metglas' ability to continue investing in its leading technology and production facilities. Continuous investment in research, design, development, engineering, product support, manufacturing support, testing, customer support services, and government-mandated regulatory efforts has been key to Metglas' success. A lack of investment will severely compromise the company's ability to retain a skilled workforce, maintain its production capacity, and preserve a competitive edge over foreign producers. Also affected are the specialized supply chains of U.S. manufacturers maintained by Metglas to supply custom parts required in the production of amorphous steel. Several of these vendors are significantly dependent on Metglas' business to remain in business themselves. If conditions require Metglas to suspend orders or relationships with these vendors, they may go out of business, and Metglas may never be able to recreate the reliable quality parts required for the specialized technology of casting amorphous steel.

Metglas has invested \$[] million since 2008 in anticipation of increased demand requiring increased capacity. This capital equipment now sits idle, as global demand is being met by product dumped below cost. Multiple capital projects valued at over \$[] million planned over years have been cancelled or placed on indefinite hold. Metglas' reduction in revenue of over []% per year over the last 3 years severely affects income taxes paid to both state and federal governments.

Lost government revenues and many other negative effects are predictable direct results when a world-leading industry born from original research in the United States and nurtured over decades through significant U.S. investment is exposed to the misappropriation of its technology and systematic unfair competition from foreign producers, as Metglas is currently exposed to by unchecked imports from China.

8. Relevant factors that are causing or will cause a weakening of our national economy

The main factor weakening the U.S. national economy in the context of amorphous steel R&D and production is unfair import trade from China and global over capacity of electrical steels (both amorphous and silicon steel.) Metglas is suffering material injury from these unfairly traded imports and faces an imminent threat of even more substantial material injury if Chinese amorphous steel continues to be imported unchecked into the United States. Metglas is fast approaching the point beyond which the damage to its production, capacity utilization, revenues and investment may be irreparable.

The importance of Metglas to our national economy and national security was highlighted at the time of Metglas' acquisition by Hitachi Metals by the intervention of the Committee on Foreign Investment in the United States ("CFIUS") and several other key U.S. government agencies, including the Departments of Commerce, Defense, Energy and Justice. Metglas' technology and assets were deemed to be of significant interest to U.S. national security such that, for Hitachi's acquisition of Metglas to proceed, officials of both

companies signed separate letters to both CFIUS and the Department of Defense committing to protect the supply of Metglas products manufactured with technology of U.S. national security concern. Copies of these letters are provided in **Annex 6**. Given this background and the existential threat Metglas faces today from unfair Chinese competition, protecting Metglas by including its amorphous steel products within the scope of the Investigation is imperative. Metglas' technology and assets are today more significant than ever to the national economy and security of the United States.

* * *

Given the information provided above, Metglas maintains that a strong basis exists for the inclusion of amorphous steel within both the scope of the Investigation and any remedies that may ultimately be imposed by the President in this context. Metglas represents precisely the type of company the President seeks to protect through the Investigation. As a result of decades of assiduous investment and product development, Metglas has established itself as a global leader in the production and sale of high-end amorphous steel products critical to a broad range of cutting-edge industries and manufacturers in the United States, including in the defense and military sectors. Protection of this valuable U.S. company is key to preserving a vibrant steel industry in the United States with a view to safeguarding national security.

Annex 1
Additional Information on Metglas' Amorphous Steel Production Activities
Including the Development of New Applications and Defense/Military Uses

Not susceptible to meaningful non-confidential summary.

Annex 2
Cost Analysis and Dumping Estimate

The data included in the chart below are drawn from submissions made by Chinese producers of amorphous steel in the context of Chinese trade remedy proceedings. Data shaded in grey have been added by Metglas.

Item/period	2012	2013	2014	Jan.-Jun. 2015
Exchange Rate (\$/RMB)				
Total domestic output (t)				
Change rate				
Subject merchandise's import volume (t)				
Change rate				
Market share of imports				
Change rate (percent)				
Subject merchandise's import price (RMB/t)				
Change rate				
MET Import Price \$/kg (Used for Scenario #2)				
Demand (t)				
Change rate				
Production				

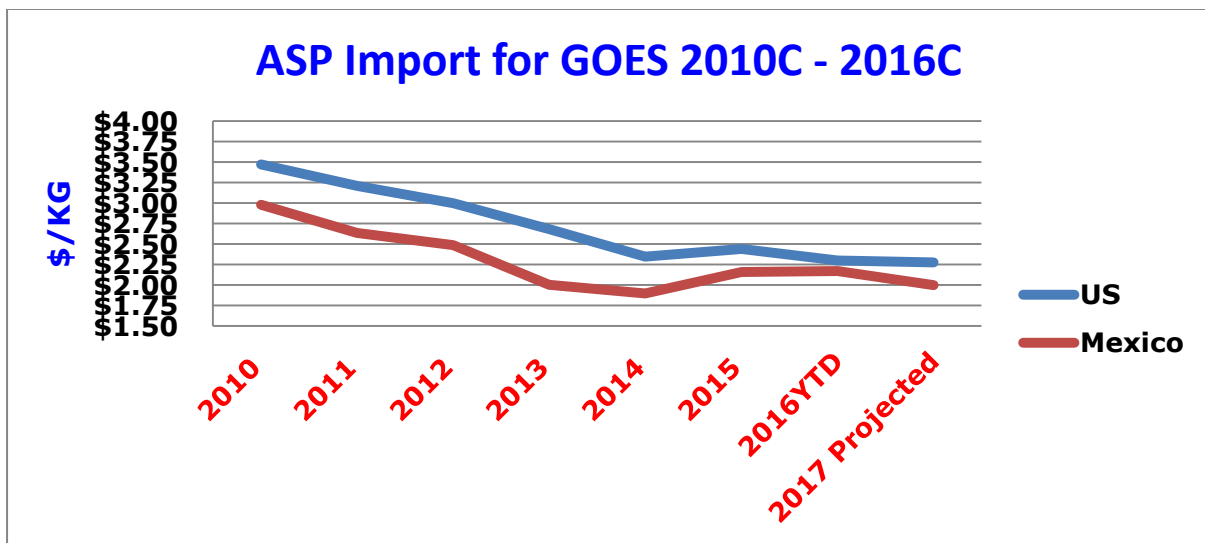
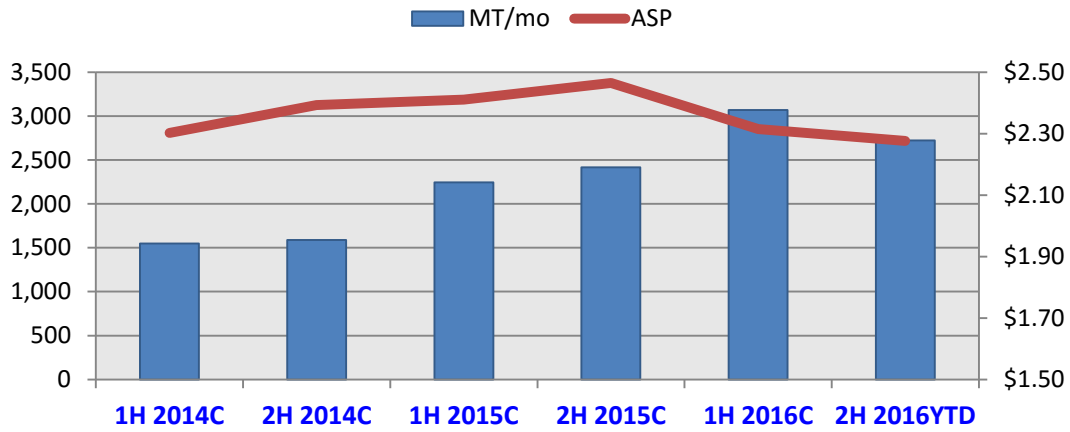
capacity (t)				
Change rate				
Output (t)				
Change rate				
Rate of operation				
Change rate (percent)				
Domestic sales volume (t)				
Change rate				
Middle of Range Sales Vol. (kg)				
Domestic market share				
Change rate (percent)				
Domestic sales revenue (RMB10,000)				
Change rate				
Middle of Range Sales Rev (\$)				
Domestic selling price (RMB/ton)				
Change rate				
Middle of Range Declared Selling Price (\$/kg) (Used for Scenario #1)				

Calculated Selling Price Rev/Vol. above (\$/kg) (Used for Scenario #3)				
Pretax profit (RMB10,000)				
Change rate				
Middle of Range Loss of Profit				
ROI				
Change rate (percent)				
Net cash flow (RMB10,000)				
Change rate				
Ending inventory (ton)				
Change rate				
Quantity of employment (person)				
Change rate				
Per capita wage (RMB/year/person)				
Change rate				
Labor productivity (ton/year/person)				
Change rate				
Scenario #1: Calculated Cost from declared price, volume,				

profit loss				
Scenario #2: Calculated Cost from MET Import price, volume, profit loss				
Scenario #3: Calculated Cost from calculated price, volume, profit loss				
Cost Average of above Scenarios				
U.S. Price of Dumping Country	-	-	\$2.15	\$2.15
Duty Required to Normalize Price			42.6%	31.7%

Annex 3
Recent History of GOES Prices in the United States

Imports into the United States



Annex 4
Partial Customer and Product List of ITAR Projects since 2006

Not susceptible to meaningful non-confidential summary.

Annex 5
History of Metglas Power Ribbon Sales 2013-2016

Not susceptible to meaningful non-confidential summary.

Annex 6
Commitment Letters Signed by Metglas and Hitachi Metals Officials
Upon the Acquisition of Metglas by Hitachi Metals

The letters attached on the following two pages were signed by officials of Metglas and Hitachi Metals to both CFIUS and the Department of Defense as a condition for Hitachi's acquisition of Metglas to proceed. They committed the companies to protect the supply of Metglas products manufactured with technology deemed to be of significant interest to U.S. national security. Metglas' technology and assets are today more significant than ever to the national economy and security of the United States.

The attached letters are not susceptible to meaningful non-confidential summary.