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Highlight

Qualification rate of Zhejiang aluminum alloy profile reaches 97.7%

Zhejiang Bureau of Quality and Technical Supervision randomly checked the product quality of aluminum alloy profile in 44 companies in Hangzhou, Ningbo, Wenzhou, Jiaxing, Huzhou, Shaoxing, Jinhua, etc, and qualification rate reached 97.7%.

Focus on end user market

Projects of auto body sheet

Part 3

ABS market forecast

Global auto manufacturers all raise their aluminum proportion used in auto body driven by the pressure to reduce the emission of green-house gas and environmental protection measures, and it is rational to adopt aluminum ABS under the current technology level. To satisfy the demand for ABS, aluminum fabricating companies have high enthusiasm to build new and expand old ABS projects, of which developed nations have all expanded projects while China has new projects. All these construction are based on market demand, and the current capacity can meet market demand before 2025. ABS is a high performance product requiring high level automation, and the designated capacity of a new production line should be larger than 50ktpy.

Global ABS consumption amounted to 400kt in 2011, of which Europe was 200kt, America 100kt, Japan 50kt, China 28kt (all import), the rest of world 22kt.

Novelis predicts that Europe demand will reach 780kt in 2016, doubled compared with 4 years ago, and global demand will increase from 400kt in 2011 to 1.20Mt in 2016, 1.80Mt in 2020 and 5.00Mt in 2025, with compound annual growth rate of nearly 20%.

Alcoa believes that the company will gain \$580mln of sales revenue from auto aluminum plate (mainly used to manufacture auto body) in 2015, more than 3 times compared with the \$160mln in 2012, and aluminum consumed by auto body in North America region will grow by 2 times to 420kt in 2015, and consumption by other auto components will grow by 15% to 2.66Mt. Aluminum has been successfully applied into auto and is widely used in engine, heat exchanger, transmission and wheel, but

its usage at auto door, engine hood and trunk lid is limited. Just some high quality auto manufacturers, like Audi, Jaguar Land Rover, use aluminum as the door material.

According to EAA, aluminum used in car was just 50kg/car in 1990 and reached 140kt/car in 2012 and might reach 180kt/car in 2020 because their lightweight process is moving forward strongly. To meet the increasingly strict environmental protection standard, the proportion of lightweight auto components must rise from the current 30% to 70% in 2030, which will mainly come from sheet metal and forgings.

Some auto manufacturers claim that aluminum used in auto will be double by 2025 and aluminum has become the second largest material in auto making sector. Aluminum auto body will increase 3 times in North America region in 2015 and 9 times in 2025 compared with 2012.

United Aluminum Co. of Japan (UACJ) set up an ABS production and sales company in America with Constellium (Europe), of which Constellium occupied 51% shares and UACJ 49%, with ABS capacity of 100ktpy and investment of \$150mln. Tri-Arrows Aluminum Inc., the full subsidiary of UACJ in America, would be responsible for related works. UACJ predicts US demand for ABS will reach 1Mt in 2020, while it is less than 100kt in 2012.

Kobe Steel announced to sign a technology cooperation agreement about auto aluminum panels with Hydro Aluminum Rolled Products GmbH in 2013, and the cooperation covered information, talent, know-how of ABS auto components. Kobe Steel aimed to keep its leading position at Japanese ABS market and also got into European and America auto markets.

Novelis expressed that it has signed a 2-year supply contract with Jaguar Land Rover in 2012 and would become the only aluminum plate supplier to Jaguar Land Rover. The two sides had a cooperation history of 20 years. Novelis' aluminum rolling products will be broadly applied to the various auto types of Jaguar Land Rover so as to reduce auto self weight and carbon emission, and in the meanwhile help it keep the leading position in auto manufacturing sector. The agreement also suggested that Novelis would recycle all the scrap aluminum during the auto manufacturing procedure and build a closed management for recycling. Aluminum plate will be used to produce new type auto like Range Rover, which is the first lightweight SUV with full aluminum body.

On 22 May of 2013, Novelis signed a cooperation agreement with Thyssenkrupp, the inventor and the largest and earliest manufacturer of tailored blanks, to develop aluminum tailored blanks. The new

technology allows aluminum tailored blanks to be produced through welding aluminum plate of different types, thickness and coating and auto producers will use this technology to produce lightweight auto body, door, engine hood, etc. The advantage of aluminum material and the new technology of lightweight will combine to promote the development of lightweight vehicle.

Rio Tinto Alcan and National Research Council of Canada (NRC) signed a 5-year cooperation agreement to jointly develop aluminum usage in lightweight auto and train in Feb 2014. Rio Tinto Alcan claimed that aluminum demand in auto industry will increase significantly in the next few years, and they are exploring new methods to produce aluminum products in hope to help auto industry produce lighter vehicle. The two sides cooperated on aluminum extrusion project to raise the profitability of aluminum products and in the meanwhile enlarge capacity to satisfy the industrial demand. Light trucks and cars increase their usage of lighter materials because they hope to improve fuel efficiency, and the stricter regulation on emission also enables them to reduce auto self weight so as to reduce the emission of green house gas. Auto producers are encouraged to use more aluminum.

Steel sheet used in auto body reached around 20.50Mt globally in 2013, if aluminum rate can rise to 80% in 2025, then aluminum alloy ABS will be 5Mt. Global ABS capacity will amount to 2.70Mtpy in 2016, and it is rational that capacity is in surplus because firstly capacity should be higher than market demand and secondly ABS project must have a certain scale, but it is in deficit if compared with the 2025 forecasted demand, so there will be new projects.

The development of ABS

After decades' development, there are around 50 types of aluminum alloy sheet used in passenger cars, such as 2xxx, 5xxx, 6xxx and 7xxx. Different nations have their own preference of materials, for example, Japan's auto industry adopts more 5xxx, America 2xxx and 7xxx and Europe 6xxx.

China uses 6xxx aluminum alloy, including 6016, 6022 and 6111 as auto aluminum plate, and their characteristics are:

Table 1 Main contents of the three auto aluminum alloy plate (%)

Alloy	Si	Fe	Cu	Mn	Mg
6111	0.6-1.2	1.0	0.50-0.9	0.10-0.45	0.50-1.0
6016	1.0-1.5	0.50	0.20	0.20	0.25-0.6

6022

0.8-1.5

0.05-0.20

0.01-0.11

0.02-0.10

0.45-0.7

Auto plate 6xxx aluminum alloy is good for recycling and circular economy. Besides the above three alloy, China is also studying 6009 and 6010 alloy, which can be used to produce the internal and external sheet. Although their strength is lower than 5182-O and 2036-T4 alloy, its formability is excellent.

Auto aluminum alloy plate has thickness of 0.8mm-1.6mm and the maximum wideness of 2300mm and it is required to have: good formability, low yield ratio, smooth surface and no roping line, good weldability and bake hardening.

Development trend of auto aluminum plate: reduce alloy types, explore new alloy and compound plate, provide deep processed sheet metal to auto producers; aluminum fabricating materials engineers participate in auto design and help them choose the right aluminum material; consider the recycle rate of aluminum for retired auto.

A full aluminum car has over 20 sheet metals, which are produced by various types of alloy, such as 5xxx, 2xxx and 7xxx, but it is difficult to reuse the aluminum scrap from the old auto due to so many different types of alloy, so it will be perfect to reduce alloy type or just use one alloy, the so called mono-alloy, however, it is hard to have such alloy before 2020 and it can only reduce the alloy type gradually.

Conclusion

China has become a large nation of primary aluminum, aluminum semis, aluminum castings and automobile. Auto sector consumes most of the aluminum, of the total 58Mt (including secondary aluminum) consumption in 2013, automobile (including motor car) consumed over 16.53Mt, accounting for 28.5% of the total.

China is developing towards a strong aluminum nation and has become a big aluminum foil nation, besides, its HR and CR equipment are in world advanced level, and PS/CTP and can material industries are on the road to a strong nation. Establishment of Chinalco research center, Nanshan research center, Zhongwang research center are ongoing smoothly. China must overrun the ABS difficulty on its way to become a strong aluminum nation.

To better develop ABS industry, here are some suggestion:

Auto industry is the key industry in national economy. China is a large auto producer and seller nation, and its average annual growth rate of output and sales won't be less than 8.5% before 2020 and will exceed 35 mln units then, therefore aluminum used by auto will grow by around 10.5%. Auto industry will become the second largest aluminum consuming field following property and construction.

There might be some compound material with good structure and characteristics to threaten the position of auto aluminum material in the next 30 years. Growth rate of global demand for ABS will achieve 25% before 2025.

It requires high technology to produce ABS, which must have: high mechanical and corrosion resistance properties, good formability and weldability, and in particular stability to keep its properties for long.

There is a huge gap of ABS research and technology between China and developed nations, and China must strive to narrow the gap.

China has 7 ongoing ABS projects, with total capacity of 945ktpy. Actually China doesn't have professional ABS production and management experience, and its main equipment and technology are the same with other high end products, such as aerospace plate, can stock, PS/CTP. The maximum wideness of ABS is 2200mm, and over 95% ABS has wideness less than 2000mm. It needs 3-4 bln yuan investment to build a 120-200ktpy auto sheet company (including upstream products), and 1.2-1.8 bln yuan to build downstream facilities.

China just begins its mass production of ABS and should put more technology research and innovation so as to establish its own unique ABS technology system.

Build professional research institute to support the development of auto aluminum alloy.

Aluminum fabricating will provide more and more aluminum deep processing products to auto manufacturers year after year.

It is better to study the experience of some developed nations and make in-depth market investigation before constructing a new project.

ABS must have surplus capacity and the ratio of designated capacity/actual output can reach 1.5 or higher. It is 3.00 in 2014, 9.60 in 2016, 6.4 in 2018, and 1.02 in 2025. Domestic consumption is

forecasted to grow by 30%, 5 percentage points higher than developed nations. Investors can choose to build new ABS projects in 2020.

Industrial news

Enterprises news

New projects

Huadong Aluminum starts Zhejiang Huadong Aluminum started constructing a 400kt high precision aluminum sheet, strip and foil project.

The project was equipped with international advanced automation controlling system and would mainly produce double zero foil, hydrophilic foil, aluminum alloy plate used in transportation, etc.

The project requires a total investment of 5 bln yuan and will achieve 8.95 bln yuan of sales income. It will be completed by 3 stages in the next 5 years. The 100kt aluminum foil production line will be finished in H1 2016.

Output and profit

Mingtai net profit up by 84.13% during the first 9 months Mingtai Aluminum achieved 101 mln yuan of net profit during the first 9 months, an increase of 84.13% year on year; operating income was 4.763 bln yuan, up by 14.54% year on year.

Higher profit was thanks to the rising sales volume and lower fabricating cost.

Zhongwang Q3 net profit reaches 1.95 bln yuan Zhongwang's revenue increased by 12.6% to 12.31 bln yuan during the first 9 months, and gross margin also rose by 28.6%, and net profit grew by 24.0% to 1.95 bln yuan.

Sales of extrusion products increased by 15.9% year on year to 574kt during Jan-Sept, of which deep processing products were 51kt,

accounting for 9% of the total sales and 11.2% of the total revenue.

The company owned 93 extrusion lines by 30 Sept, with total capacity of over 1 Mtpy, and sales revenue of industrial aluminum profile increased by 11.3% to 10.16 bln yuan; sales revenue of deep processing products rose by 22.7% to 1.38 bln yuan, of which foreign markets grew by 29.8% to 1.7 bln yuan.

Zhongwang's high end aluminum rolling production base was settled in Tianjin, and the first production line would be completed in H2 2015.

Chinalco suffers 5.412 bln yuan loss in Q3

Chinalco achieved 104.8 bln yuan of operating income during Jan-Sept, down by 14.15% year on year, of which net profit was -5.412 bln yuan, with per share earning of -0.4 yuan.

Minfa Aluminum net profit down by 34% during Jan-Sept

Minfa Aluminum achieved 28.36 mln yuan of net profit during the first 3 quarters, down by 34.08% year on year, with per share earning of 0.17 yuan; operating income reached 913 mln yuan, up by 11.48% year on year.

Minfa Aluminum mainly involves in R&D, production and sales of aluminum profile products.

Industrial news

China exports 588,600t of aluminum wheels during Jan-Sept

China exported 71kt of aluminum wheels, up by 13.1% year on year, with total export value of \$350mln, up by 12.9% year on year; total export reached 588,600t during Jan-Sept, up by 12.4% year on year, with total value of \$2.92 bln, rising by 11.8% year on year.

A total 1002 companies were involving in export during the first 9 months, of which the top 40 reached \$2.443bln, accounting for 84.0%

of the total export value, and the top 100 reached \$2.821bln, accounting for 96.6% of the total.

There were a total 154 exporting nations and regions, of which the top 40 nations and regions reached \$2.849bln, accounting for 97.6% of the total, of which export to US ranked the top 1 in terms of export volume and value, which were 276kt and \$1.44bln respectively.

Comprehensive per tonne Energy consumption of above scale industries in Guangdong
energy consumption of province reached 109 Mt of standard coal during the first three
aluminum semis down by 8.6% quarters, an increase of 0.8% year on year, and industrial output value
in Guangdong increased by 10.0% during the same period.

Comprehensive per tonne energy consumption of aluminum semis was 287.83kg standard coal, down by 8.6%.

Xinhe Aluminum's 100ktpy Guangdong Xinhe Aluminum's 100ktpy high precision aluminum
high precision aluminum alloy alloy profile project is ongoing smoothly, which requires investment of
profile project is ongoing 1.07bln yuan (a total of 1.5 bln yuan).
smoothly

No. 1 and 2 extrusion workshops and equipment had already been completed and took trial production; spraying workshop, No.1 workshop for finished products, molten and casting workshop, oxidation workshop all completed equipment installation.

Guangxi Jingxi achieves 16.2 Guangxi Jingxi County aluminum industrial park achieved 16.19 bln
bln yuan of aluminum yuan of output value during the first 9 months, an increase of 25.95%
industrial output value during year on year, accounting for 92.16% of the total output value in the
Jan-Sept county.

Aluminum semis output up by Output of 10 base metals reached 497kt during the first 9 months in

19% during Jan-Sept in Sichuan province, down by 9.61% year on year, of which primary aluminum output reached 330kt, down by 23.43% year on year, aluminum semis output was 561,900t, up by 19.08% year on year.

Industrial output value of above scale non ferrous metals enterprises reached 71.8bln yuan, up by 1.69% year on year; pre-tax profit was 3.6bln yuan, down by 16.03% year on year; profit was 1.904 bln yuan, down by 20.41% year on year.

There were three problems faced by non ferrous industry in Sichuan province: gloomy demand and slim transaction; low price for major products; lack of big projects.

Sigma Group secondary aluminum capacity reaches 1.47 Mtpy

Sigma Group will operate 360ktpy of secondary aluminum capacity in 2015, boosting its total capacity to 1.47 Mtpy.

The Sigma Group, founded in 1978, primarily focuses on secondary aluminum smelting and metal scrap trading. Sigma has sizeable plants in Taiwan (Kaohsiung) and China (Shanghai, Zhangzhou, Chongqing, Rizhao, and Changchun), with over 1600 employees and annual turnover of 8.2 billion RMB. The Sigma Group plays a vital role in the global aluminum recycling ecosystem, processing scrap metal from sources such as shredded autos to produce specification aluminum alloys.

Zhongli Sci-Tech Group operates an aluminum alloy wire and electric cable project

Zhongli Sci-Tech Group operated a 30kt aluminum alloy wire and electric cable project in its Liaoning branch.

Completion of the project will help improve Liaoning branch's market proportion at domestic and international market and in the meanwhile optimize operating structure and improve its overall competitiveness.

Zhongli Sci-Tech Group aims to build its aluminum alloy wire and electric cable production technology as the leading technology at domestic market as well as international market.

China produces 2.04 mln units of auto in Oct

China produced 2.04 mln units of auto in Oct, an increase of 6.69% year on year, sales reached 1.99 mln units, up by 2.82% year on year, of which output and sales of passenger cars were 1.76 mln units and 1.71 mln units, up by 10.43% and 6.43% respectively year on year, commercial cars were 286,400 units and 278,300 units, down by 11.69% and 14.89% respectively year on year.

Total auto output and sales reached 19.27 mln units and 18.99 mln units during the first 10 months, up by 7.93% and 6.58% year on year, of which passenger cars were 16.14 mln units and 15.86 mln units, up by 11.20% and 9.76% year on year; commercial cars were 3.13 mln units and 3.12 mln units, down by 6.30% and 7.08% on a yearly basis.

Statistics

Chinese aluminum semis output in top 10 provinces in 2014

Unit:tonne			
Region	Oct	Jan-Oct	Jan-Oct Chng 14/13
Chinese total	4,328,878	39,464,028	18.58
Guangdong	512,701	4,816,209	12.61
Henan	834,236	7,321,226	14.16
Shandong	939,559	8,576,894	16.54
Jiangsu	262,046	2,478,689	6.75
Zhejiang	204,786	1,881,125	17.70
Chongqing	133,691	1,063,068	20.59
Liaoning	83,746	1,086,320	6.69

Fujian	126,867	1,196,872	18.25
Hubei	93,810	860,015	19.64
Hunan	160,144	1,410,083	28.23

Note: All the figures listed above are from China Nonferrous Metals Industry Association (CNIA).

Import and export of aluminum semis in 2014

Unit: tonne and USD

Import						
Commodity	Oct	Jan-Oct	Y-o-Y	Value in Oct	Value in Jan-Oct	Y-o-Y
Al semis	40,210	412,952	2.77	249,676,820	2,486,389,764	-2.03
Powder	115	1,435	-20.75	1,637,913	15,948,944	-5.11
Bar, rod, section	4,992	53,192	4.85	27,580,860	285,929,370	5.24
Wire	620	7,238	21.27	3,584,525	46,209,788	20.24
Sheet & strip	28,665	289,052	1.54	115,927,519	1,156,006,549	-5.60
Foil	4,807	49,595	5.65	90,211,227	868,089,308	-1.13
Tube	1,011	12,441	6.23	10,734,776	114,205,805	5.52
Other products(window, door, etc)	3,310	34,825	2.39	63,116,438	684,708,214	16.44
Export						
Al semis	318,417	2,841,887	10.94	1,027,991,200	9,272,213,517	6.44
Powder	674	8,514	27.23	3,625,874	42,934,664	27.27
Bar, rod, section	65,424	606,202	19.63	223,773,847	2,064,900,311	17.09
Wire	1,960	17,625	20.68	9,722,472	79,450,446	29.74
Sheet & strip	155,170	1,367,644	4.34	427,744,506	3,865,915,014	-3.76
Foil	77,250	715,964	13.95	284,227,956	2,627,185,946	10.52
Tube	17,939	125,939	33.09	78,896,545	591,827,136	29.12
Other products(window, door, etc)	162,361	1,499,958	9.59	806,871,123	7,509,187,657	9.92

Note: 1. Figures are provided by the General Administration of Customs of P. R. China

2. All Imports/exports of commodity are in physical weight.

Import and export of aluminum end products in 2014

Unit: tonne and USD

Import						
Commodity	Oct	Jan-Oct	Y-o-Y	Value in Oct	Value in Jan-Oct	Y-o-Y
Aluminum tube or pipe fittings (for example, couplings, elbows, sleeves)	128	1,532	-7.47	3,710,277	36,116,663	11.55

Aluminum doors, windows and their frames and thresholds for doors	101	1,051	54.44	1,329,551	13,844,236	35.10
Other aluminum structure	363	3,686	-33.70	6,812,203	62,758,403	38.02
Aluminum reservoirs, tanks, vats and similar containers, capacity exceeding 300 l	2	542	-46.86	26,178	2,043,283	-71.89
Aluminum collapsible tubular containers	4	149	11.37	52,355	2,260,131	-14.20
Aluminum tear tab ends and bodies thereof	7	1,140	276.82	44,569	6,060,038	191.84
Other Aluminum reservoirs, tanks, vats and similar containers, capacity not exceeding 300 l	112	1,272	21.45	1,511,292	22,863,629	18.47
Aluminum containers for compressed or liquefied gas, for retail packing	3	27	-52.71	162,178	1,271,132	-24.30
Other aluminum containers for compressed or liquefied gas	7	159	3.53	324,912	5,630,492	17.12
Aluminum stranded wire, cables, plaited bands and the like, not electrically insulated, with steel core	2	6	-97.04	13,555	43,088	-97.01
Other Aluminum stranded wire, cables, plaited bands and the like, not electrically insulated	0	46	-70.80	18,527	694,034	-71.93
Pot scourers and scouring or polishing pads, gloves and the like	0	0	123.33	4,852	12,566	68.92
Other Aluminum table, kitchen or other household articles and parts thereof	420	3,768	3.14	4,583,451	37,571,684	18.49
Sanitary ware and parts thereof	2	17	-22.75	45,465	550,840	-17.75
Nails, tacks, staples, screws, bolts, nuts and similar articles	138	1,391	13.97	7,128,561	78,815,226	-4.17
Cloth, grill, netting and fencing, of aluminum wire	13	240	9.40	516,772	6,308,806	10.86
Other aluminum products, for industrial use	1,445	14,355	13.32	27,561,902	304,147,486	29.95
Other aluminum products, non-industrial use	688	6,976	0.81	12,980,115	139,833,140	2.60

Export

Commodity	Oct	Jan-Oct	Y-o-Y	Value in Oct	Value in Jan-Oct	Y-o-Y
Aluminum tube or pipe fittings (for example, couplings, elbows, sleeves)	1,710	17,338	16.51	16,378,232	162,123,041	16.41
Aluminum doors, windows and their	16,701	152,877	4.93	81,374,394	751,533,577	9.21

frames and thresholds for doors						
Other aluminum structure	40,217	388,537	25.53	176,905,254	1,655,711,138	25.77
Aluminum reservoirs, tanks, vats and similar containers, capacity exceeding 300l	66	1,158	-16.72	439,155	6,664,371	63.65
Aluminum collapsible tubular containers	294	2,584	12.74	2,722,338	24,262,209	12.30
Aluminum tear tab ends and bodies thereof	476	5,106	-17.24	2,470,081	28,642,387	-15.20
Other Aluminum reservoirs, tanks, vats and similar containers, capacity not exceeding 300 l	1,466	13,020	0.21	14,217,030	125,876,514	13.28
Aluminum containers for compressed or liquefied gas, for retail packing	459	4,713	4.44	3,588,637	39,416,066	4.53
Other aluminum containers for compressed or liquefied gas	44	551	-3.73	392,481	4,914,043	10.69
Aluminum stranded wire, cables, plaited bands and the like, not electrically insulated, with steel core	15,503	91,214	30.26	35,506,614	218,636,836	19.78
Other Aluminum stranded wire, cables, plaited bands and the like, not electrically insulated	2,886	22,900	-32.65	8,664,749	69,529,244	-36.78
Pot scourers and scouring or polishing pads, gloves and the like	68	93	9.05	470,774	704,796	48.76
Other Aluminum table, kitchen or other household articles and parts thereof	37,849	340,535	2.28	218,231,488	1,971,745,867	1.06
Sanitary ware and parts thereof	530	7,038	-7.47	4,498,950	52,900,887	-0.78
Nails, tacks, staples, screws, bolts, nuts and similar articles	1,102	11,806	-23.70	6,773,397	68,569,762	-13.50
Cloth, grill, netting and fencing, of aluminum wire	1,059	11,074	24.94	5,952,327	54,760,486	15.45
Other aluminum products, for industrial use	4,597	48,008	15.24	42,986,482	394,889,452	20.85
Other aluminum products, non-industrial use	39,043	398,742	6.35	201,676,972	2,040,430,022	9.50

Source: China Customs

Aluminum products prices in late Nov 2014

Unit: yuan/t

Product	Producer	Price
A356 aluminum alloy	Baotou Aluminum Co., Ltd	14,140

Aluminum alloy ADC12	Shanghai Sigma Metals, Inc	16,100
(On 10 Dec, 2014)		

Aluminum wire drawing rods for electrical purpose (φ9.5)	Fujian Nanping Aluminum Co., Ltd	14,400
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Source: Antaiko

Output of End Users

Unit: thousand units

Items	Oct	Jan-Oct	Change %
Air-conditioner	11,014	133,978	13.3
Washing-machine	6,230	57,221	-3.2
Wire and cable (thousand km)	5,517	45,966	9.0
Bicycle	5,272	51,162	-0.9
Motorcycle	2,328	21,851	1.9

Sources: CAAM and NBS

Macro-economic indices

	CPI	PMI	PPI
2013Nov	3.0%	51.4%	-1.4%
Dec	2.5%	51.0%	-1.4%
2014 Jan	2.5%	50.5%	-1.6%
Feb	2.0%	50.2%	-2.0%
Mar	2.4%	50.3%	-2.3%
Apr	1.8%	50.4%	-2.0%
May	2.5%	50.8%	-1.4%
Jun	2.3%	51.0%	-1.1%
Jul	2.3%	51.7%	-0.9%
Aug	2.0%	51.1%	-1.2%
Sept	1.6%	51.1%	-1.8%
Oct	1.6%	50.8%	-2.2%
Nov	1.4%	50.3%	-2.7%

Source: NBS

Online Information (www.antaiko.com)

Industry Policy	<input type="checkbox"/> US\$600/y
Economic Reports	<input type="checkbox"/> US\$600/y
Base Metals	<input type="checkbox"/> US\$3,000/y, monthly reports of Copper, Nickel&Stainless Steel, Alumina & Aluminum, Lead & Zinc complimentary
Precious Metals	<input type="checkbox"/> US\$1,500/y, monthly report, complimentary
Minor Metals	<input type="checkbox"/> US\$2,500/y, monthly report, complimentary
Rare Earth	<input type="checkbox"/> US\$1,000/y, monthly report, complimentary

Stainless Steel & Raw Materials	<input type="checkbox"/> US\$1,500/y, monthly report, complimentary
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Note:

1. The price is for 1 access to the website. For 2 accesses in the same company, 20% discount is provided; and for 3 accesses, 30% discount is provided.

2. One access can only be used by one user; otherwise it will become invalid.

Reports (PDF) & Data Package (Excel)

➤ Copper & Copper Fabrication

Package of Monthly Report&Monthly Data	<input type="checkbox"/> US\$1500/y
Monthly Report	<input type="checkbox"/> US\$1000/y
Monthly Data	<input type="checkbox"/> US\$1000/y

➤ Lead & Zinc

Package of Monthly Report&Monthly Data	<input type="checkbox"/> US\$1500/y
Monthly Report	<input type="checkbox"/> US\$1000/y
Monthly Data	<input type="checkbox"/> US\$1000/y

➤ Nickel & Stainless Steel

Package of Monthly Report, Weekly Report& Monthly Data	<input type="checkbox"/> US\$2500/y
Monthly Report& Monthly Data Package	<input type="checkbox"/> US\$1500/y
Monthly Report	<input type="checkbox"/> US\$1000/y
Monthly Data	<input type="checkbox"/> US\$1000/y
Weekly Report	<input type="checkbox"/> US\$1200/y

➤ Other Reports

Package of Magnesium Monthly Report & Weekly Data	<input type="checkbox"/> US\$1000/y
Tungsten& Molybdenum Monthly Report & Weekly Review	<input type="checkbox"/> US\$1000/y
Alumina & Aluminum Monthly Report	<input type="checkbox"/> US\$800/y
Aluminum Fabrication Monthly Report	<input type="checkbox"/> US\$800/y
Precious Metals Monthly Report	<input type="checkbox"/> US\$800/y
Minor Metals Monthly Report	<input type="checkbox"/> US\$800/y
Rare Earth Monthly Report	<input type="checkbox"/> US\$800/y

Note:

Data Package includes data in service year. Historical data is available on paid service.

Quarterly Reports (PDF)

Copper	<input type="checkbox"/> US\$3,000/y
Aluminum	<input type="checkbox"/> US\$3,000/y
Lead	<input type="checkbox"/> US\$3,000/y
Zinc	<input type="checkbox"/> US\$3,000/y
Tin	<input type="checkbox"/> US\$3,000/y
Nickel	<input type="checkbox"/> US\$3,000/y

Yearbook (PDF)

Alumina & Gallium	<input type="checkbox"/> US\$2,300/copy	Nickel & Stainless Steel	<input type="checkbox"/> US\$2,000/copy
Primary Aluminum	<input type="checkbox"/> US\$2,300/copy	Tungsten	<input type="checkbox"/> US\$1,200/copy
Aluminum Fabrication	<input type="checkbox"/> US\$2,000/copy	Titanium	<input type="checkbox"/> US\$1,700/copy
Refined Copper & Raw Materials	<input type="checkbox"/> US\$2,000/copy	Molybdenum	<input type="checkbox"/> US\$1,700/copy
Copper Fabrication	<input type="checkbox"/> US\$2,000/copy	Rare Earth	<input type="checkbox"/> US\$1,700/copy
Lead	<input type="checkbox"/> US\$2,000/copy	Silicon	<input type="checkbox"/> US\$1,200/copy
Zinc	<input type="checkbox"/> US\$2,000/copy	Magnesium	<input type="checkbox"/> US\$1,700/copy
Gold	<input type="checkbox"/> US\$1,200/copy	Indium	<input type="checkbox"/> US\$1,200/copy
Silver	<input type="checkbox"/> US\$1,700/copy	Cobalt	<input type="checkbox"/> US\$1,700/copy
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