

## Nickel market summary Dec 5-9

Demand for stainless steel continued to be stable in the Chinese market this week. With the USD index going up, LME nickel prices declined slightly affected by the lack of supports. A stainless steel in South China was forced to shut its illegal capacity down, making prices for stainless steel pick up slightly. Market participants noted that the supply for stainless steel will decline in the future and nickel prices will be driven up if the illegal capacity of the company can't be kept. Demand for nickel sulfate was unchanged in the domestic market this week and producers began to prepare for stocks to consume during the Spring Festival as they held an optimistic attitude towards the future market. Market participants expected that prices for nickel sulfate will go up slightly in the coming week.

The shut-down of the capacity of the company will make the demand for ferronickel drop in the near future, but the demand from stainless steel mills will be stable in the long run and nickel prices will gradually pick up. Prices for Chinese ferronickel are still unchanged in the Chinese market this week. Although mines in the Philippines further raised their quotations, transactions for nickel ore continued to be limited in the spot market as downstream customers were cautious in purchasing.

## Company news

With an annual capacity of 2,000t, Zhangjiagang Huayi Chemical Co., Ltd. resumed the production of nickel sulfate in October as they held an optimistic attitude towards the future market. They realized full capacity in late this week.

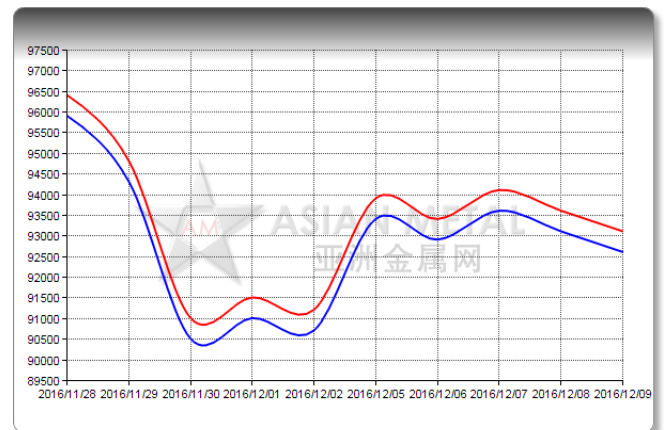
With an annual capacity of 60,000t of ferronickel 10%min, Inner Mongolia Zhongtai Ferronickel Co., Ltd. finished the maintenance for electric furnaces in late November and resumed production.

## Domestic market review

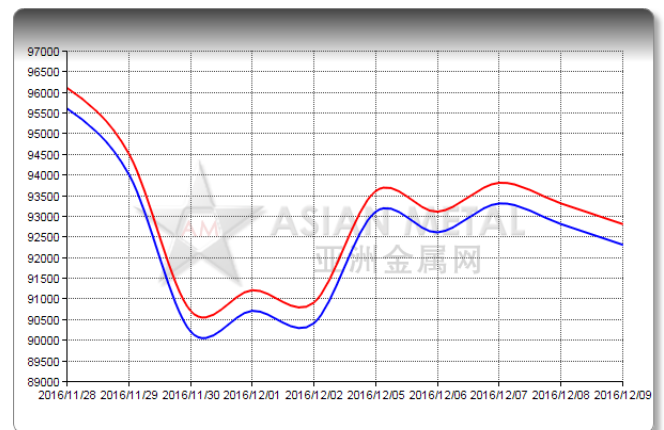
### Nickel cathode prices fluctuate at high levels

Affected by stable demand from stainless steel mills, prices for nickel cathode continued to linger at high levels this week

with no news about increasing or decreasing in prices in the future market. Market participants noted that with the approaching of the year-end, the appreciation of USD and sluggish economy in Europe, LME nickel prices were hard to go up and prices for nickel cathode are expected to continue to be unchanged in the Chinese market in the coming week. Prices for Jinchuan nickel cathode and Norilsk nickel were RMB92,600-93,100/t (USD13,393- 13,466/t) and RMB92,300-92,800/t (USD13,350-13,422/t) in the Chinese market during this week respectively, up by RMB1,900/t (USD275/t) from last week.



Price movement for Jinchuan nickel cathode (RMB/t)

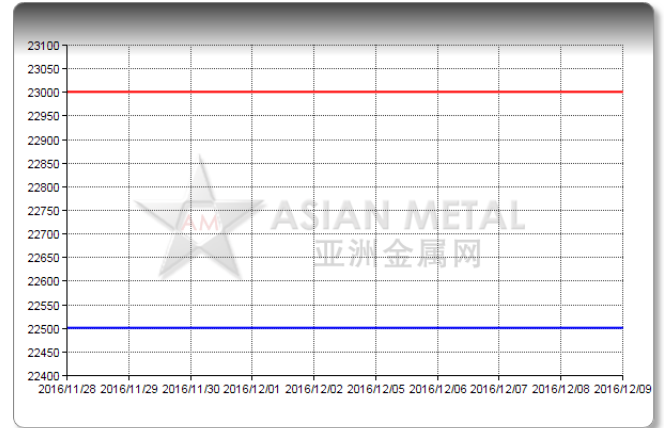


Price movement for Norilsk nickel cathode (RMB/t)

### Nickel sulfate prices stable further

With the approaching of the year-end, downstream demand for nickel sulfate from electroplating, surface treatment and battery was stable in China and downstream consumers had gradually made sufficient stocks to consume before the Spring Festival. Thus, prices for nickel sulfate continued to be stable this week. But some consumers began to make storages to consume during the Spring Festival as they held

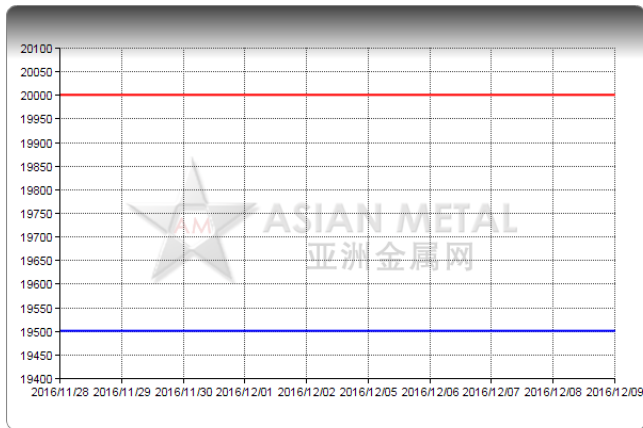
an optimistic attitude towards the future market of lithium battery and nickel sulfate. It is expected that prices for battery grade nickel sulfate will go up slightly in the Chinese market in the coming week. Prices for electroplating grade nickel sulfate (Ni > 22%; Co < 0.05%) and battery grade nickel sulfate (Ni > 22%; Co < 0.4%) were stable at RMB22,500-23,000/t (USD3,254-3,327/t) and RMB19,500-20,000/t (USD2,820-2,893/t) this week respectively. And prices for ternary precursor were still RMB71,000-74,000/t (USD10,269-10,703/t) late this week.



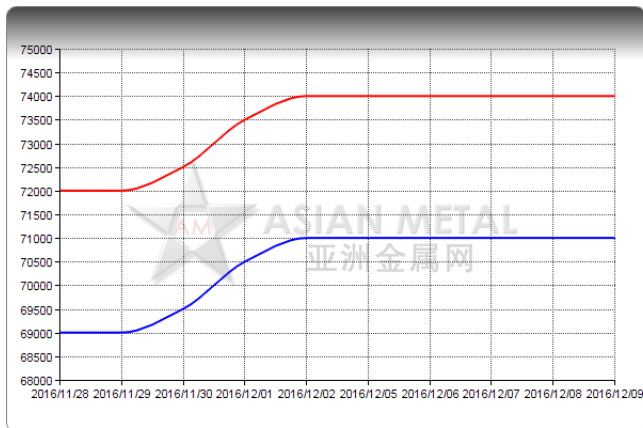
Price movement for electroplating grade nickel sulfate (RMB/t)

### Low grade ferronickel prices up slightly

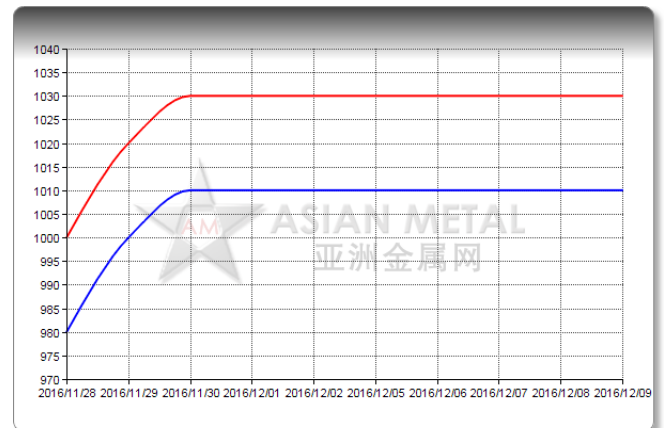
Affected by stricter environmental inspections in China, the production for ferronickel 1.5-2% basically halted in Shandong, Hebei, Henan and other regions of China, resulting in tight supply and slightly increased prices for low-grade ferronickel in the spot market. Producers for ferronickel 10%min kept stable production with prices continuing to be unchanged in the spot market. Thus, prices for ferronickel 1.5-2%min were RMB2,980-3,030/t (USD431-438/t) ex works, up by RMB30/t (USD4.34/t) from last week; prices for ferronickel 10%min and 4-6% continued to be stable at RMB1,010-1,030/mtu (USD146-149/mtu) and RMB1,030-1,050/mtu (USD149-152/mtu) delivered to plants respectively.



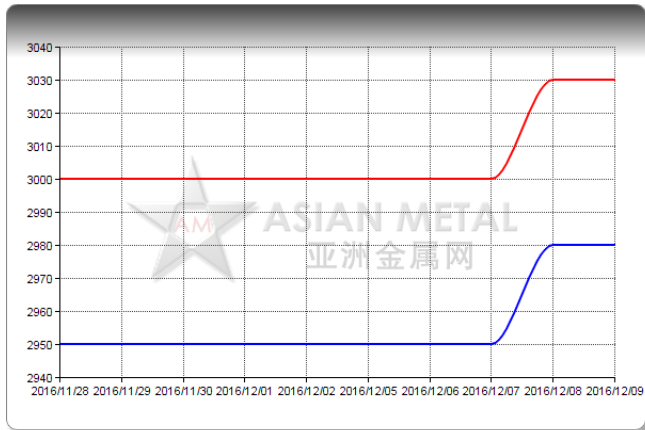
Price movement for battery grade nickel sulfate (RMB/t)



Price movement for ternary precursor (523) (RMB/t)



Price movement for ferronickel 10%min (RMB/mtu)



Price movement for ferronickel 1.5-2%min (RMB/t)

Chinese ferronickel prices by region on Dec 9

Region	Spec.	Price	Up/down	Unit	Basis
Liaoning	10%min	1020-1040	0	RMB/mtu	Delivered to plants
Shandong	1.5%min	2980-3030	+30	RMB/t	Ex works
	4%min	1030-1050	0	RMB/mtu	Delivered to plants
	10%min	1020-1040	0	RMB/mtu	Delivered to plants
Jiangsu	10%min	1020-1040	0	RMB/mtu	Delivered to plants
Inner Mongolia	10%min	1020-1040	0	RMB/mtu	Delivered to plants

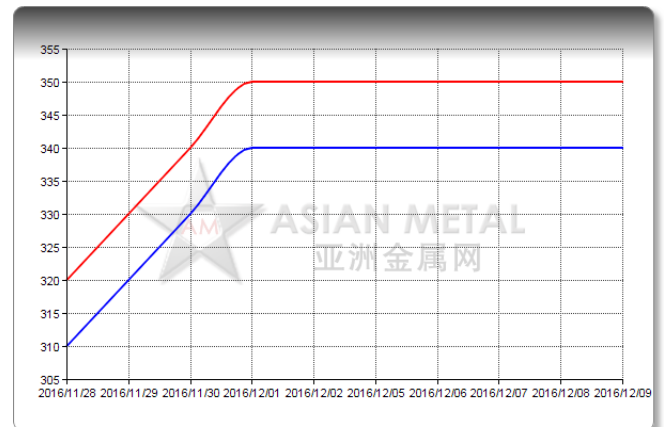
Major stainless steel mills' purchasing prices for ferronickel on Dec 9

Company	Spec.	Price	Up/down	Unit	Basis
Tisco	1.5-2%	-	-	RMB/t	Delivered to plants
	10%min	1000-1020	0	RMB/mtu	Delivered to plants
Posco	4%min	-	-	RMB/mtu	Delivered to plants
	10%min	1000-1020	+20	RMB/mtu	Delivered to plants
Jisco	10%min	1000-1020	+20	RMB/mtu	Delivered to plants

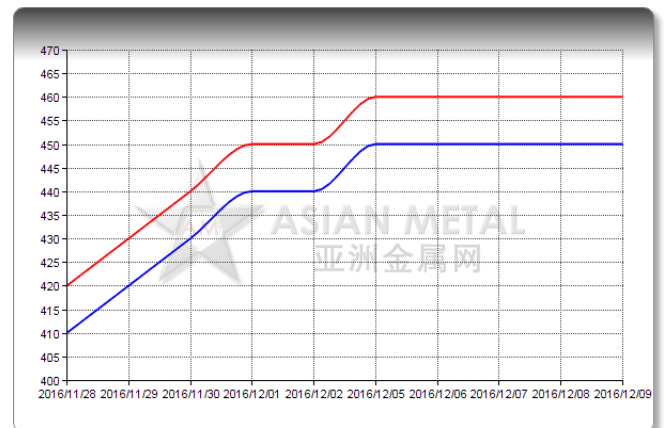
					plants
Fuxin Special Steel	10%min	1000-1020	+20	RMB/mtu	Delivered to plants

#### Lateritic nickel ore prices stable

Chinese producers for ferronickel held limited stocks for nickel ore late this week, but traders for nickel ore were reluctant to sell due to the limited resources and stopped from making quotations. Due to stable prices, producers were reluctant to purchase in large volumes, resulting in limited transactions and stable prices in the spot market. Prices for lateritic nickel ore 1.8%min and 1.5%min were still RMB440-450/t (USD64-65/t) and RMB340-350/t (USD49-51/t) in the Chinese spot market late this week respectively, while those for lateritic nickel ore 0.8-1%min with 49% Fe held were unchanged at RMB180-190/t (USD26-28/t) in the spot market.



Price movement for lateritic nickel ore 1.5% in the ports (RMB/t)



Price movement for lateritic nickel ore 1.8% in the ports (RMB/t)

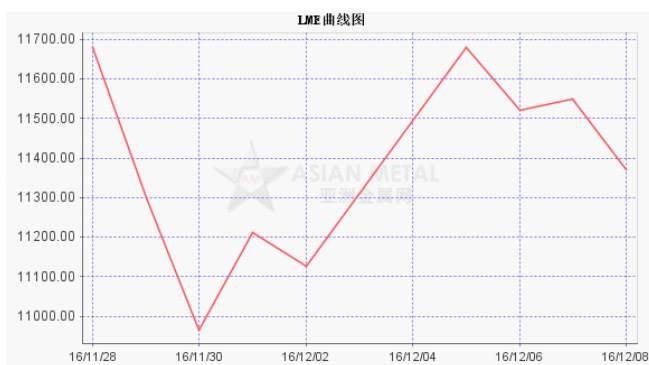
### Chinese Philippine lateritic nickel ore prices by port on Dec 9

Port	Grade	Price	Up/down	Unit	Basis
Tianjin	0.8%min	190-200	+10	RMB/t	FOT
	1.5%min	340-350	0	RMB/t	FOT
	1.8%min	435-445	0	RMB/t	FOT
Lianyungang	0.8%min	185-195	+10	RMB/t	FOT
	1.5%min	330-340	0	RMB/t	FOT
	1.8%min	430-440	0	RMB/t	FOT

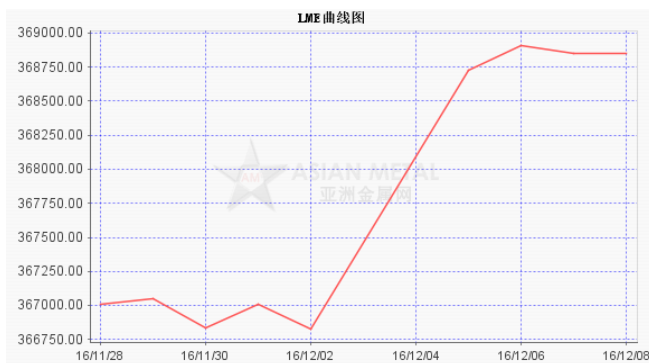
### International market review

#### LME nickel prices linger at high levels

As USD index went up, LME nickel prices fluctuated at high levels this week. Up till Thursday, prices for three-month LME nickel up by USD160/t from last week to USD11,370/t with LME nickel stocks increasing by 2,000t from the previous week to 369,000t. Market participants expected that LME nickel prices will continue to fluctuate in the coming week as demand from downstream customers will weaken further with the approaching of 2017.



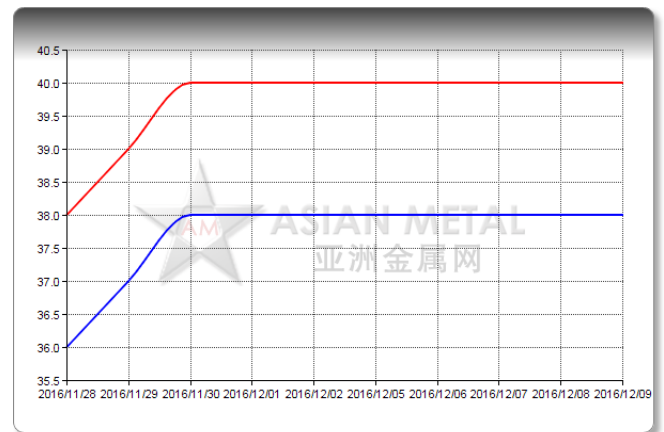
Cash settlement for LME nickel (USD/t)



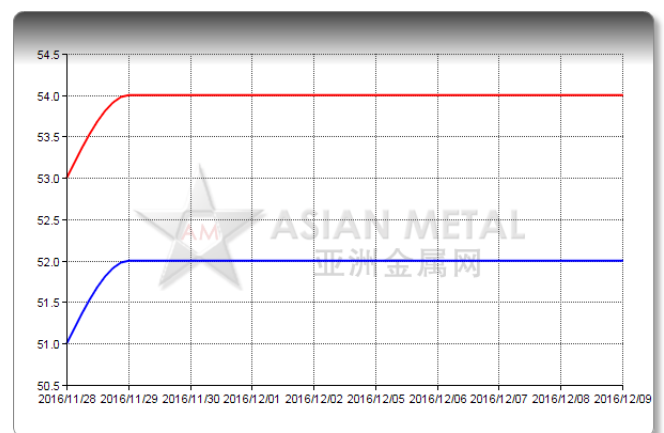
LME nickel spot stocks (t)

#### Philippine lateritic nickel ore transactions limited

The supply for Philippine lateritic nickel ore was tight late this week while demand from Chinese ferronickel producers was still unchanged. In order to make sufficient stocks, some producers began to make enquiries, but transactions were still limited. Due to the shortage in supply, traders made higher quotations and prices were in chaos in the spot market. Market participants noted that prices for ferronickel were hard to go up in the Chinese market and some producers won't purchase the lateritic nickel ore at higher prices with one month of delivery time. Thus, it is expected that transactions for lateritic nickel ore will continue to be limited in the future. This week, prices for Philippine lateritic nickel ore 1.5% and 1.8%min with a 30-day delivery period were still USD38-40/t and USD52-54/t CIF China respectively and those for lateritic nickel ore (Ni 0.8-1%, Fe 49%) were stable at USD18-20/t CIF China.



Price movement for Philippine lateritic nickel ore 1.5% CIF China (USD/t)



Price movement for Philippine lateritic nickel ore 1.8% CIF China (USD/t)

## Philippine lateritic nickel ore prices on FOB basis Dec 9

Grade	Price	Up/down	Unit	Basis
0.8%min	12-14	0	USD/t	FOB
1.5%min	33-35	+4	USD/t	FOB
1.8%min	48-50	+3	USD/t	FOB

Some Chinese producers for ferronickel will continue to make replenishments for nickel ore to keep normal production, which will make supply for nickel ore decline. It is expected that prices for nickel ore will go up slightly in the coming week.

## Market outlook

### Nickel cathode

**Trend Stable Chance 60% Range +/-0**

Downstream demand for stainless steel was stable in late last year and consumers purchased from hand to mouth with stable supply in the spot market. It is expected that prices for nickel cathode will continue to be stable in China in the coming week.

### Nickel sulfate

**Trend Up Chance 80% Range +100**

As downstream customers from battery industry expected that the market condition of nickel sulfate will improve next year, some consumers began to prepare stocks for late January. Nickel prices lingered at high levels and producers for nickel sulfate were reluctant to sell. It is expected that prices for nickel sulfate will go up slightly in the coming week.

### Ferronickel

**Trend Stable Chance 60% Range +/-0**

Affected by decreased capacity for stainless steel, demand for ferronickel declined slightly in the spot market. Domestic stainless steel plants kept their purchase prices for ferronickel at low levels. It is expected that prices for Chinese ferronickel will continue to be unchanged in the coming week.

### Lateritic nickel ore

**Trend Up Chance 60% Range +1**