

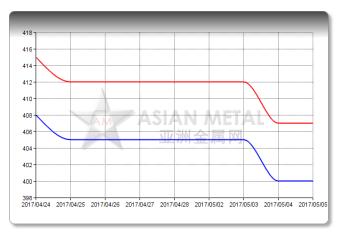
## Cobalt market summary May 2 - 5

This week, as prices in the Chinese cobalt metal market lacked upward momentum while prices in the international market lingered at a low level, prices for cobalt salts in China edged down to various extents. Though demand from downstream cathodes material industry was picking up, consumers were cautious in their purchases, not restocking cobalt products in large volumes, and the spot market saw few transactions. With selling prices for cobalt products in the Chinese market almost on a par with their production costs, Chinese producers were reluctant to sell their materials, making market players believe that in the following week cobalt prices in China will remain stable.

#### International market review

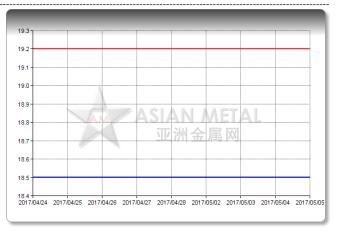
# Cobalt metal prices down

In the previous week, prices in the international market had moved down. This week in the Chinese market, as downstream consumers for cobalt metal held sufficient stocks, part of cobalt metal producers were forced, out of financial pressure, to sell their materials at low prices, making transaction prices for the material go down again. This week, prices for cobalt metal 99.8%min held at RMB400-407/kg, down by RMB5/kg from the previous week. Some producers even sold it at as low as RMB380/kg, while some traders sold the material of un-standardized cobalt contents at below RMB360/kg.



Chinese cobalt metal 99.8%min price trend (RMB/kg)

This week, purchasing prices for cobalt concentrate 6-8% remained stable at USD18.5-19.2/lb. Imports of cobalt ores were still of small volumes, and cobalt salt producers, as their orders signed before on cobalt ores had not been delivered to port yet, showed no interest in making more purchases. As a result, there were no changes seen in prices for cobalt ores this week.



Cobalt concentrate 6-8% price trend (USD/lb)

## Cobalt powder prices down

This week, as cobalt metal prices moved down again, cobalt powder prices bore downward pressure. Though producers still stuck to a quotation of RMB550/kg, this Friday, prices for Chinese cobalt powder 99.5%min nevertheless edged down again by RMB5/kg from the previous week to RMB5520-534/kg. Despite this, downstream consumers were still cautious in making purchases, not restocking large volumes of cobalt powder, and therefore transactions in the market were stable this week.



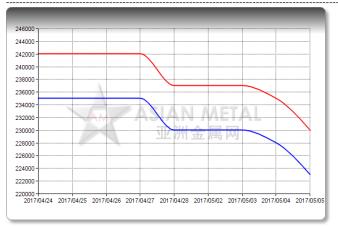
Chinese cobalt powder 99.5%min price trend (RMB/kg)

## Cobalt carbonate prices down

This week, cobalt powder priced edged down, and prices for cobalt ores and intermediate products by hydrometallurgical technique did not change, but prices for cobalt carbonate also bore downward pressure as demand for the material weakened. By this Friday, prices for Chinese cobalt carbonate 46%min held at RMB223,000-230,000/t, down by RMB7,000/t from the previous week.

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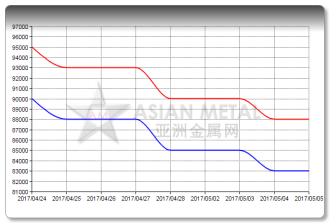




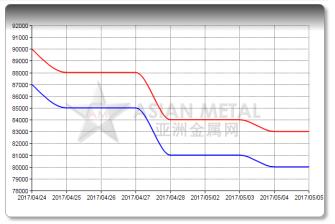
Chinese cobalt carbonate 46%min price trend (RMB/t)

## Cobalt sulfate prices down slightly

This week, prices for Chinese battery grade cobalt sulfate 20.5%min held at RMB83,000-88,000/t, down by RMB2,000/t from the previous week, and those for industrial grade cobalt sulfate 20%min at RMB80,000-83,000/t, down by RMB1,000/t from the previous week. Chinese producers claimed that, as their selling prices had kept falling, almost close to their production costs now, they may choose to stop selling or even cut their outputs if downstream consumers continued to cut their purchasing prices. It was reported that in the Chinese cobalt sulfate market there were transactions concluded at RMB80,000/t this week, most of which were stocks sold by traders who purchased them at an earlier time. Market players anticipated that in the following week prices for Chinese cobalt sulfate may remain stable.



Chinese cobalt sulfate 20.5%min price trend (RMB/t)



Chinese cobalt sulfate 20%min price trend (RMB/t)

#### Cobalt chloride prices stable

This week, though prices for Chinese cobalt metal and several cobalt salts moved down to various extents, prices for cobalt chloride remained unchanged at RMB104,000-106,000/t from the previous week. This week, supply and downstream demand kept stable, while traders did not dump their stocks and producers held back from selling, thus enabling prices for the material to remain stable.



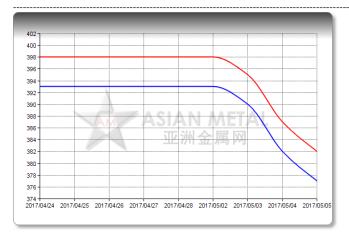
Chinese cobalt chloride 24%min price trend (RMB/t)

## Cobalt tetroxide prices down

This week, as prices for downstream ordinary lithium cobalt oxide dipped and some producers bore capital pressure, prices for Chinese cobalt tetroxide 73.5%min held at RMB377-382/kg, down by RMB16/kg from the previous week. And some small-sized producers sold the material at as low as RMB360/kg, as banks pressed them to repay loans. Despite this, it was still profitable to produce cobalt tetroxide with cobalt sulfate, and market players anticipated that in the following week prices for Chinese cobalt tetroxide may still face downward pressure.

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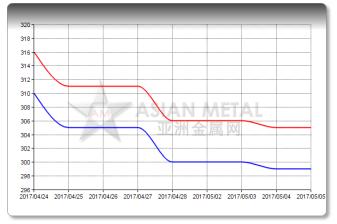




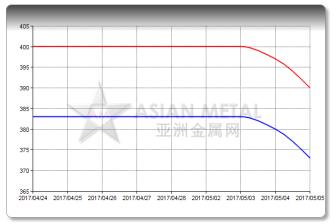
Chinese Cobalt tetroxide 73.5%min prices trend (RMB/kg)

## Cobalt oxide prices down

This week, as demand from downstream industries dwindled, production capacity of major Chinese cobalt oxide producers dipped greatly. This week, prices for Chinese cobalt oxide 72%min held at RMB299-305/kg, down by RMB1/kg from the previous week, and those for cobalt monoxide 78%min at RMB373-390/kg, down by RMB10/kg from the previous week.



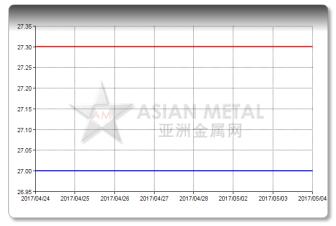
Chinese cobalt oxide 72%min price trend (RMB/kg)



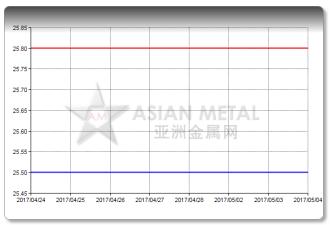
Chinese cobalt monoxide 78%min price trend (RMB/kg)

## European cobalt metal prices stable

As cobalt metal prices in Europe had risen too quickly in the previous time, downstream consumers therefore restocks enough volumes of the material, out of a worry that prices may move up. As a result, this week, downstream purchases were few in the European cobalt metal market and prices were stable. Prices for European cobalt metal 99.8%min held at USD27.7-28.0/lb, and those for 99.3%min material at USD25.5-25.8/lb.



European cobalt metal 99.8%min price trend (USD/lb)



European cobalt metal 99.3%min price trend (USD/lb)

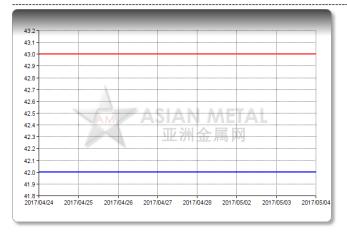
# European cobalt oxide prices stable

This week, cobalt metal prices remained stable, downstream demand for cobalt oxide stood still, and there were no much changes in the supply-demand relation in the European cobalt oxide market. As a result, this week prices for European cobalt oxide 72%min continued to stand still at EUR42.0-43.0/kg. Market players believed that, as the European cobalt market was still under influences from the sluggish Chinese market, its prices will hover at the current level in the short term.

## International market review

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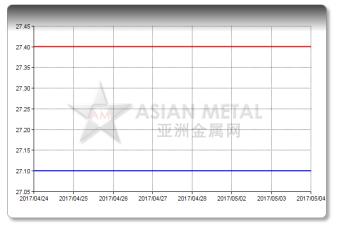




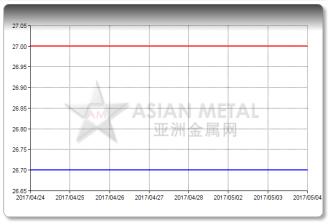
European cobalt oxide 72%min price trend (EUR/kg)

## US cobalt metal prices stable

This week, similar to the European market, prices in the US cobalt metal market was also under fluencies from the stable Chinese remaining sluggish market, USD27.1-27.4/lb for cobalt metal 99.8%min USD26.7-27.0/lb for 99.3%min material, both unchanged from the previous week. As downstream consumers had restocked enough material in the previous time, while there was no notable increase in demand, market players anticipated that prices for US cobalt metal will remain stable in the short term.



US cobalt metal 99.8%min price trend (USD/t)



US cobalt metal 99.3%min price trend (USD/t)

#### Market outlook

Price trend for cobalt metal 99.8%min Trend ↓ Chance 80% Range -2

Price trend for cobalt powder 99.5%min

Trend — Chance 60% Range +/-0

Price trend for cobalt carbonate 46%min

Trend — Chance 80% Range +/-0

Price trend for cobalt sulfate 20.5%min

Trend — Chance 80% Range +/-0

Price trend for cobalt chloride 24%min

Trend — Chance 80% Range +/-0

Price trend for cobalt oxide 72%min

Trend — Chance 80% Range +/-0

This week in the Chinese market, prices for cobalt salts such as cobalt sulfate and cobalt chloride had been moving close to their production costs; though downstream consumers tried to negotiate for lower purchasing prices, their purchase volumes did not dip, and therefore producers refused to cut their selling prices further. Market players anticipated that in the following week prices for Chinese cobalt salts such as cobalt sulfate will remain stable.

But for cobalt tetroxide, though its prices still hovered at a high level, there were producers who tried to sell the material at lower prices, which therefore imposed certain pressure upon those who sold at higher prices. Therefore, market players anticipated that in the following week prices for cobalt tretroxide may go downs slightly, so do prices for cobalt metal, as some producers dumped the material out of capital pressure while downstream consumers were cautious in making purchases.