

Cobalt market summary Jun 5-9

Up to this week, cobalt metal prices in the international markets moved up for three consecutive weeks, and prices in the Chinese market increased accordingly. Prices for cobalt salt products continued to go down since May and prices for some products were lower than production costs; producers refused to lower prices continuously. With rebounding cobalt prices in the international markets, domestic producers for cobalt products were reluctant to sell and held firm on quotations this week; the market saw small transactions for cobalt metal after prices went up. Market participants anticipated that cobalt prices will edge up in the future market as demand from the downstream battery market will picked up gradually in Q3.

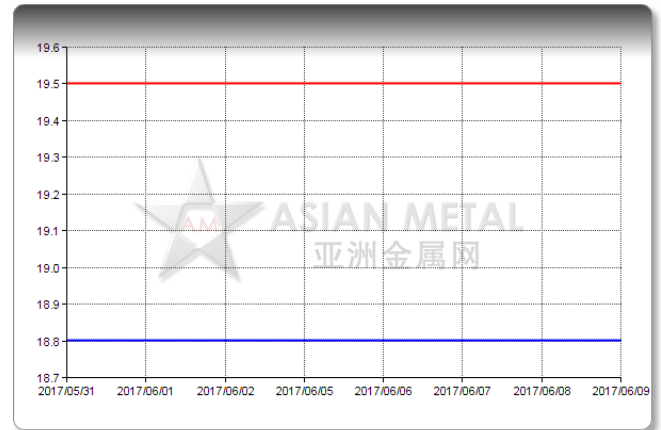
Chinese market review

Cobalt metal prices rebound

Prices for Chinese cobalt metal 99.8%min were RMB365-372/kg (USD53.69-54.72/kg) this Friday, up by RMB7/kg (USD1.03/kg) against those of the previous week. As domestic cobalt metal producers cut the output or shut down or mainly made export business, the market saw gradually decreasing supply coupled with rebounding cobalt prices in the international market, domestic cobalt metal prices moved up. Although downstream consumers were reluctant to accept cobalt metal prices and were cautious about purchasing, domestic cobalt metal prices will rise further in the coming week as domestic prices were lower than international prices. This week, prices for cobalt concentrate 6-8% stood still at USD18.8-19.5/lb in the Chinese market. Affected by child labor and the environmental issues, supply in the African cobalt ore market was limited with relatively sparse transactions.



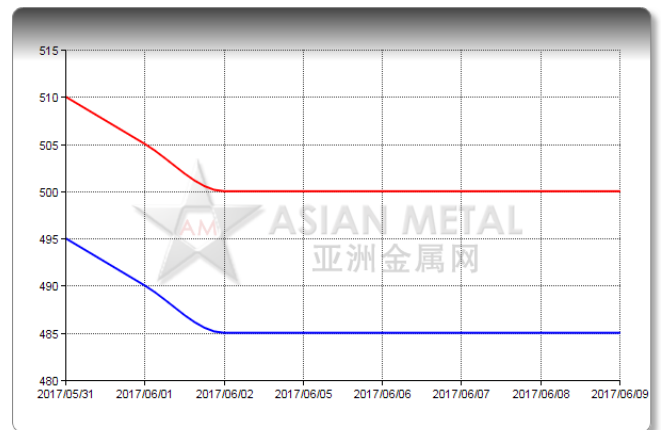
Chinese cobalt metal 99.8%min price trend (RMB/kg)



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

Cobalt powder prices remain stable

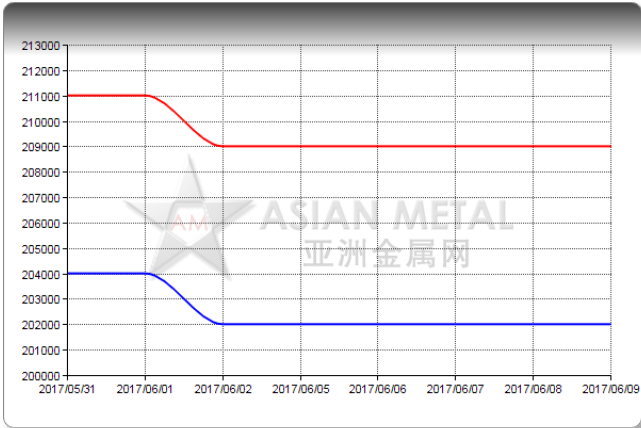
This Friday, prices for cobalt powder 99.5%min in the Chinese market stood at RMB485-500/kg (USD71.34-73.55/kg), unchanged from the previous week. Downstream alloy producers believed that as cobalt powder producers held firm on quotations when prices for other cobalt products declined previously in the Chinese market, the market witnessed limited purchase interest and transactions with sufficient stocks held by consumers. Although cobalt metal prices recovered, market participants anticipated that cobalt powder prices will still see difficulties in rising in the coming week and will stay at the existing level.



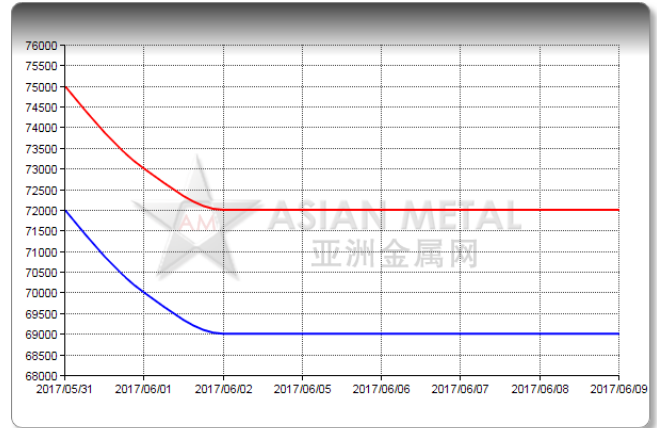
Chinese cobalt powder 99.5%min price trend (RMB/kg)

Cobalt carbonate prices stable

This Friday, prices for cobalt carbonate 46%min in the Chinese market were RMB202,000-209,000/t (USD29,715-30,744/t), unchanged from late the previous week. Despite weak demand from downstream cobalt powder producers, prices for raw material of cobalt carbonate will move up with rising cobalt prices in the international markets and the cobalt carbonate market saw no improvement; market participants predicted that cobalt carbonate prices will edge up in the coming week.



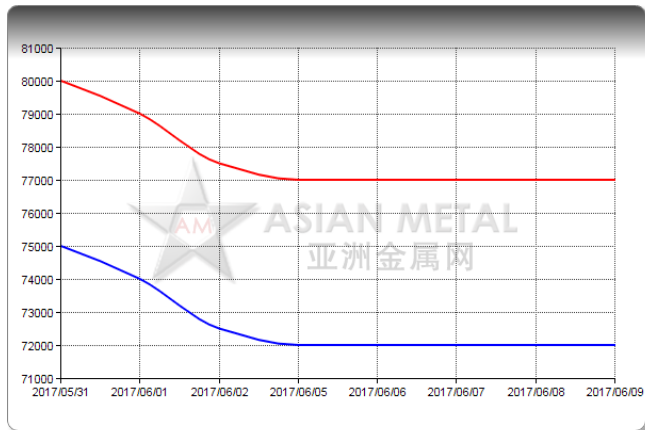
Chinese cobalt carbonate 46%min price trend (RMB/t)



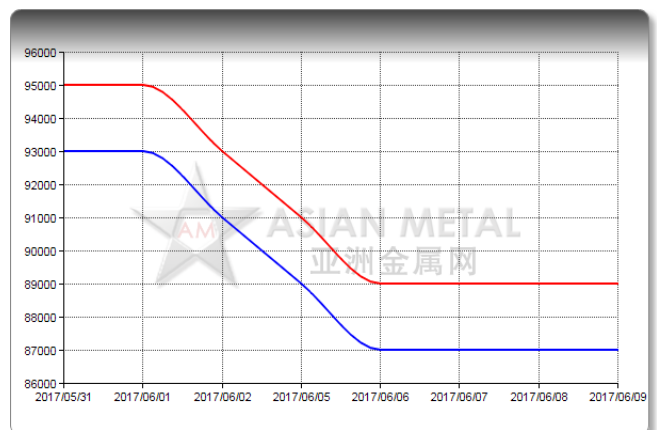
Chinese cobalt sulfate 20%min price trend (RMB/t)

Cobalt sulfate prices down further

This week, transaction prices for battery grade cobalt sulfate 20.5%min edged down by RMB500/t (USD73.55/t) from the previous week to RMB72,000-77,000/t (USD10,591-11,327/t) while those for industrial grade 20%min material remained stable at RMB69,000-72,000/t (USD10,150-10,591/t), unchanged from the previous week. As some cobalt oxide producers and cobalt metal producers shifted to produce cobalt sulfate with increasing supply while the downstream battery market seeing no rises in orders in the slack season pushed prices down, cobalt sulfate prices dropped. With increasing cobalt metal prices in the international markets, domestic cobalt sulfate producers refused to lower selling prices, and it was expected that domestic cobalt sulfate prices will stop dipping to remain stable in the coming week.



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

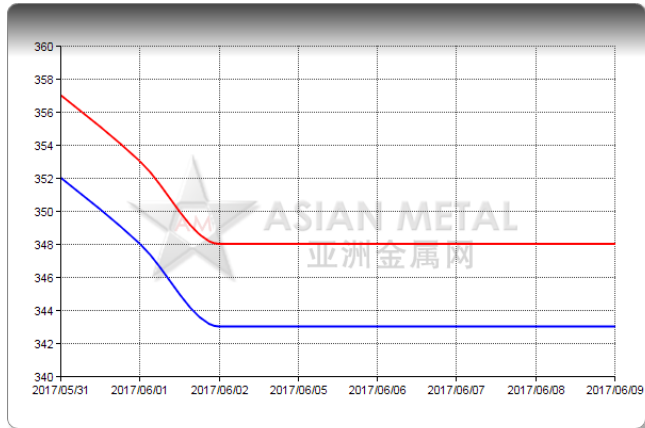


Chinese cobalt chloride 24%min price trend (RMB/t)

Cobalt tetroxide prices stable

This Friday, prices for cobalt tetroxide 73.5%min in the Chinese market stayed at RMB343-348/kg (USD50.46-51.19/kg), unchanged from the previous week. As downstream lithium cobalt oxide demand and cobalt tetroxide supply were relatively stable, cobalt tetroxide prices remained unchanged. Consumers all purchased from hand to

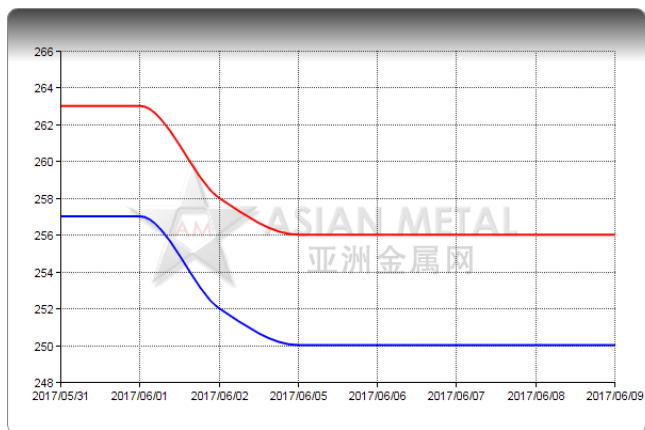
mouth and the market saw stable transactions. Although cobalt prices started to recover gradually, cobalt tetroxide prices were at high level compared with prices for other cobalt products and it was predicted that cobalt tetroxide prices will remain unchanged in the coming week.



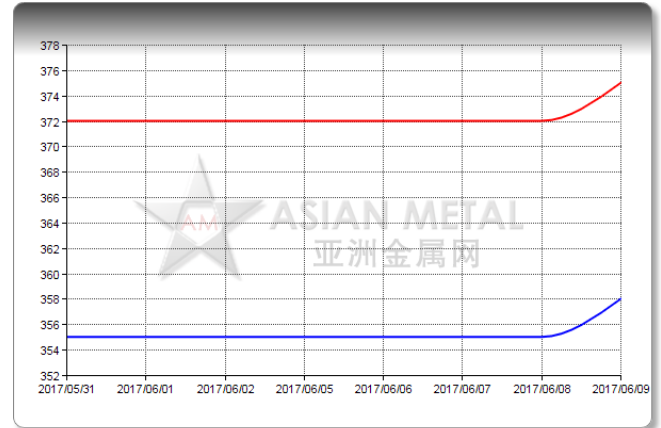
Chinese cobalt tetroxide 73.5%min price trend (RMB/kg)

Cobalt oxide prices stop dropping

Although prices for Chinese cobalt oxide 72%min moved down by RMB2/kg (USD0.29/kg) again from the previous week to RMB250-256/kg (USD36.78-37.66/kg) this Friday, the downstream market of cobalt oxide tended to stabilize after the market reshuffle for up to half a year and the overcapacity also shifted to produce other products or shut down; with recovering prices for cobalt products, cobalt oxide prices will stop dipping continuously as well. This Friday, prices for cobalt monoxide 78%min in the Chinese market increased by RMB3/kg (USD0.44/kg) from the previous week to RMB358-375/kg (USD52.66-55.16/kg).



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

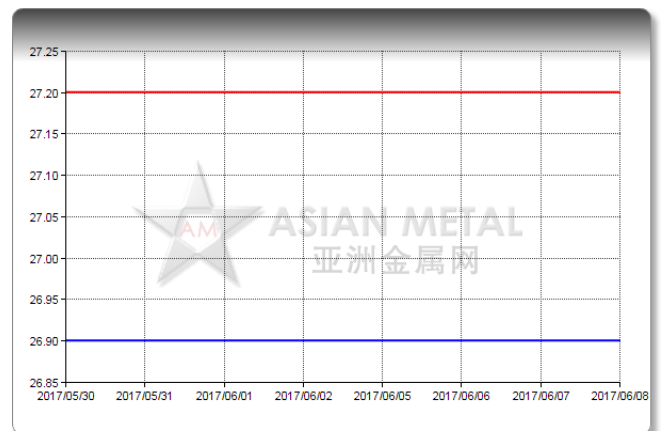


Chinese cobalt monoxide 78%min price trend (RMB/kg)

International market review

European cobalt metal prices unchanged

Cobalt metal prices in the international markets recovered while demand in the European market was relatively stable and rises in cobalt metal exports in the international markets also relieved tight supply; therefore, cobalt metal prices in the European market remained stable. This Friday, prices for cobalt metal 99.8%min and 99.3%min were USD26.9-27.2/lb and USD24.8-25.1/lb.



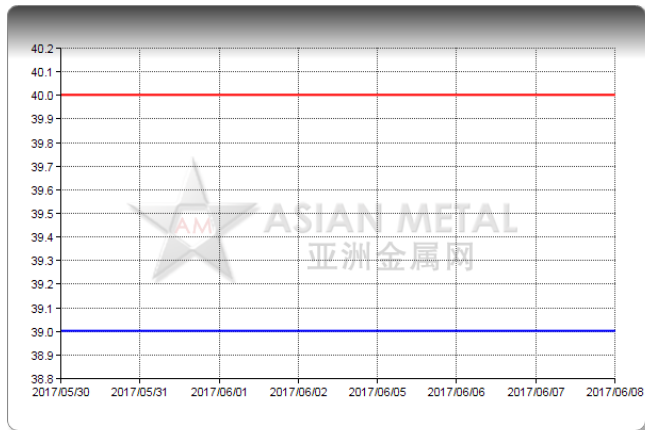
European cobalt metal 99.8%min price trend (USD/lb)



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

European cobalt oxide prices stable

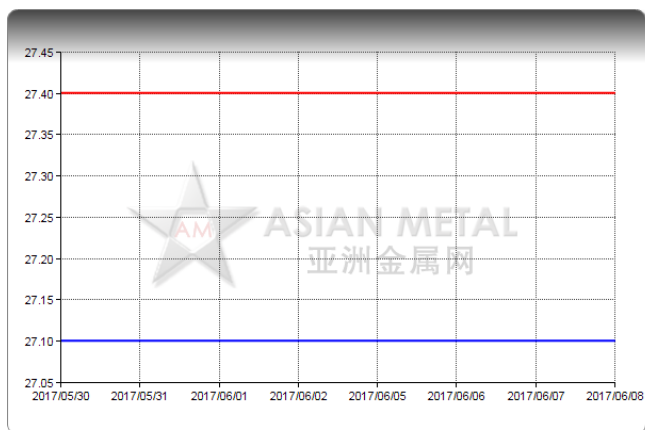
This week, prices for European cobalt oxide 72%min were EUR39.0-40.0/kg, unchanged from the previous week. Supply in the European market was relatively stable and demand also showed no improvement as downstream consumers were cautious about purchasing; it was expected that prices will continue to stabilize in the coming week.



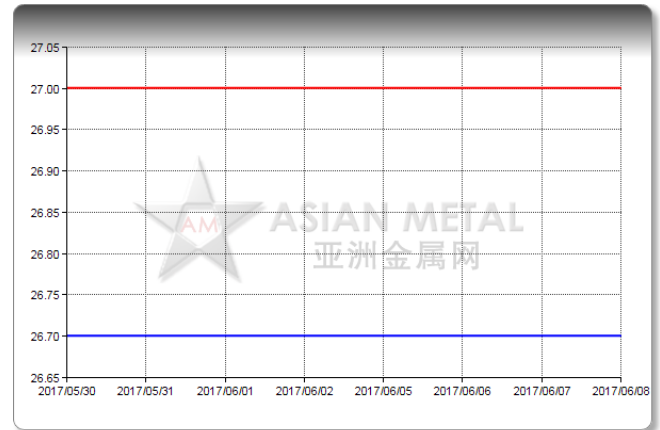
European cobalt oxide 72%min price trend (EUR/kg)

US cobalt metal prices stabilize

This Friday, prices for cobalt metal in the U.S. market remained unchanged with those for cobalt metal 99.8%min and 99.3%min at USD27.1-27.4/lb and USD26.7-27.0/lb respectively. As downstream demand in the U.S. market was stable and tight supply was also eased, prices remained unchanged.



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



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

Market outlook

Cobalt metal 99.8%min

Trend ↑ Chance 60% Range +3

Cobalt powder 99.5%min

Trend — Chance 80% Range +/-0

Cobalt carbonate 46%min

Trend — Chance 80% Range +/-0

Cobalt sulfate 20.5%min

Trend — Chance 80% Range +/-0

Cobalt chloride 24%min

Trend — Chance 80% Range +/-0

Cobalt tetroxide 73.5%min

Trend — Chance 80% Range +/-0

Cobalt oxide 72%min

Trend — Chance 80% Range +/-0

China's anode material demand will increase gradually in Q3 and it is predicted that downstream consumers will start to lift running capacity successively and market demand will recover gradually. Although cobalt prices in the international markets move up consecutively, domestic downstream consumers of cobalt products with no stocks in bulk and market transactions mainly concluded based on hand-to-mouth purchases, still watched the market from sidelines with an extremely cautious attitude. Therefore, market participants anticipated that domestic cobalt metal prices will edge up while prices for cobalt powder and cobalt salt products will remain at existing levels in the coming week instead of increasing immediately.