

## **Concentration and distribution of chromium in drainage catchment sediment and alluvial soil of China**

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Chromium is an important industrial element. As China is deficit of Chromium resources, it is necessary to understand the geochemical baseline and spatial distribution of Chromium in China. The China Geochemical Baselines (CGB) project provides nation-wide catchment sediment/alluvial soil geochemical baseline data for 76 elements including Cr from 3382 top (0–25 cm) and 3380 deep sediment/alluvial soil samples (under a depth of 100 cm) at 3382 sampling sites, corresponding to a sampling density of about 1 site per 3000 km<sup>2</sup>.

As a low background baseline value, the 25th percentile is at 36.59mg/kg and 32.50mg/kg in top and deep sediment/alluvial soil samples. The median Cr value is at 52.74mg/kg and 49.88mg/kg in top and deep sediment/alluvial soil samples, respectively. The median value is close to abundance of surface rock 42mg/kg. As an anomaly baseline, the 85th percentile is at 78.78mg/kg and 79.20mg/kg in top and deep sediment/alluvial soil samples.

The low background baseline zone (<median) located in northwestern China and southeastern China is related to granite and dilution of aeolian sand. The high background baseline zone (median~85th percentile) located in northeastern and central China is related to sedimentary rocks and intermediate-basic rock. The anomaly zone (>85th) located in southwestern China is related to basic rock and ultrabasic rock, such as Emeishan continental floor basalt province and the Bangonghu-Nujiang ophiolite belt.