

Metals production by Norilsk Nickel Harjavalta

Metal	2014	2015	2016
Seleable nickel, t	42,603	43,479	53,654
including the Company's Russian feedstock	0	424	19,012
Copper in copper cake, t	10,629	13,048	9,598
including the Company's Russian feedstock	0	0	593
Palladium in copper cake, koz	71	78	64
including the Company's Russian feedstock	0	0	8
Platinum in copper cake, koz	31	33	22
including the Company's Russian feedstock	0	0	2

AFRICA

(Norilsk Nickel Nkomati)

Nkomati is a 50/50 unincorporated joint venture of the Norilsk Nickel Group and African Rainbow Minerals. It is located 300 km east of Johannesburg, Mpumalanga Province, South Africa.

Nkomati is the only nickel concentrate producer in South Africa. Apart from nickel, the concentrate produced by Nkomati contains copper, cobalt, chromium and PGM.

Production facilities:

- open pit and underground mines;
- MMZ Concentrator with installed capacity of 375 ktpm (up to 410 ktpm).
- PCMZ Concentrator with installed capacity of 250 ktpm (up to 300 ktpm).

Production technology

Nkomati has a substantial resource base represented by disseminated copper-nickel sulphide ores with several major ore bodies. The Main Mineral Zone is comprised of a solid sulphide ore body with a relatively high nickel content. The field also contains a Peridotite Chromite Mineralization Zone with a lower metal content vs MMZ and a relatively high chromium content.

The feedstock produced by open-pit and underground mining operations is processed at Concentrators using the method of sulphide flotation. The produced concentrate is then further processed at Boliden and Kola MMC.

Mining

In 2016, total ore mined by Nkomati reached 2.8 mln t (attributable to the Group's 50% shareholding) with an average nickel content of 0.37%. The Group accounted for 8.5 kt of nickel concentrate production, down as compared to 2015 due to lower mining volumes and decreased nickel content in processed ore.

Average metal content in ore, %

Metal	2014	2015	2016
Nickel	0.36	0.34	0.37
Copper	0.13	0.14	0.13

Concentration

Metals recovery in concentration, %

Metal	2014	2015	2016
Nickel	75.9	74.1	70.6
Copper	90.8	86.1	89.5

Smelting

Metals production for Norilsk Nickel's internal processing needs

Metal	2014	2015	2016
Nickel, t	11,359	11,350	8,486
Copper, t	4,958	5,301	4,007
Palladium, koz	48	53	40
Platinum, koz	19	20	15