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EMERALD

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648
E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

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18 Emerald

Emerald has decorative value because of its superb colours. It shows various colours like yellowish-green, bluish-green or blue. However, the unique velvety green colour of fine emerald places it among the most precious stones.

Emerald, a transparent, pale-green to sea-green variety of beryl, is chemically a complex silicate of aluminium and beryllium. Aquamarine, being blue-green to light-blue, pink morganite, are the other gemstone varieties of beryl.

RESOURCES

Occurrences of emerald are reported from Rajasthan, Odisha, Tamil Nadu and Andhra Pradesh. However, reserves have not been estimated so far. In Rajasthan, emerald occurs at a number of places in Udaipur, Rajsamand and Ajmer districts. Emerald-bearing zones are found along 195 km long ultramafic rocks. The bands of vermiculite-actinolite schist with tourmaline are seen occasionally at the contact of pegmatites with emerald-bearing schist. In Ajmer district, emerald-bearing zones are located at Gudas and Bubani. Commercial deposits of emerald are reported from Tikhi, Kalaguman, Kanj-ka-Kheda, etc. areas in Rajsamand district.

In Odisha, occurrences of emerald are reported from Bira-Mohorajpur belt in Bolangir district, which extends into Sambalpur and Dhenkanal districts. Ghuchapada and Barmal prospects in Bolangir district are the potential areas.

In Eastern Ghat belt of Visakhapatnam district, Andhra Pradesh, pegmatite veins containing beryl and aquamarine, besides other gemstones are reported from several places.

PRODUCTION

Production of emerald has not been reported since 1983.

MINING AND MARKETING

In Ajmer-Rajsamand belt of Rajasthan, emerald occurrences are confined to the upper fringes of pegmatites. Emerald was mined manually by opencast method in the past. The pits were worked at shallow depths. The stones collected during mining were sorted out according to size, shape and quality. The stones so collected were deposited with the State Government under the supervision of DMG officials and mine owners. Crude emerald was sold by public auction.

The beauty of rough stone is enhanced by skillful cutting and polishing into faceted or rounded form for use in jewellery. The rough stones are sorted out to determine the angles to which facets can be cut. They may be sawed or polished in any direction according to shape, size and colour to be retained. After the shape and size are determined, the next process of 'pre-shaping' is done. The third and important process called 'calibration' gives the pre-shaped stone a definite proportion and size. The process that follows is 'faceting' and 'polishing'. The aim of this process is to achieve maximum internal reflection enhancing the beauty of stone. Emeralds are generally given a step-cut or cabochon-cut.

Jaipur in Rajasthan is the major centre for processing emeralds. Like diamonds, uncut emerald is imported and part of it is exported after processing. Emerald is next to diamond (uncut) amongst precious and semi-precious stones, being imported and re-exported after cutting and polishing.

WORLD REVIEW

World production of emerald is reported mainly from Colombia, Pakistan, Afghanistan, Africa, Nigeria, Mozambique, United States of America, Madagascar, Brazil, Zambia and Zimbabwe.

Madagascar was a globally significant producer of gem stone that included emerald, ruby and sapphire. Emerald was produced from the Kianjavato emerald mines which are located in the rain-forest region of eastern Madagascar, approximately 60 km west of the coastal city of Mananjary. Madagascar emeralds are also mined at the Ianapera (Sakalava) emerald deposits in the Ianapera (Janapera) area of Tuléar (Toliara) Province, 350 km east of the town Toliara. Societe Orgaco of France mined the emerald (536 kg Heaven's gift) in matrix at the Morafeno mine near Mananjary and exported it to Reunion. In Pakistan, the Fizzagat emerld mine is situated near the district headquarters Mingora.

Brazil emerald mines are located in the states of Bahia, Minas Gerais and Goias. In Colombia, emerald is found in the mountain ranges of the Andes. There are three major mines in this region: Muzo, Chivor and Coscuez. Two of these mines are leased by the government to private companies. The majority of the gems produced in Zambia are found in the Kamakanga and Kagem mines. Both are found in the north-eastern region of the country. Zimbabwe produces rough emeralds from the Sandawana mine, located in the south-west of the country. Emerald production here is not as high as compared to some other countries. In the United States of America, Beaver County, Utah is home to rough emerald production. The mines are located in the eastern slopes of the Wah Wah Mountains.

FOREIGN TRADE

Exports

In 2013-14, exports value of emerald (cut & uncut) decreased to ₹2157.01 crore from ₹2678.74 crore in the previous year. The share of cut emerald in total value was about 99% and that of uncut emerald was merely 1% in 2013-14. Exports were mainly to Hong Kong (72%), USA (10%) and UAE & Thailand (3% each) (Tables- 1 to 3).

Imports

In 2013-14, imports value of emerald (cut and uncut) also decreased to ₹2232.88 crore from ₹3746.43 crore in the previous year. The share of uncut emerald in total value was 23% and that of cut emerald was 77% in 2013-14. Imports were mainly from Hong Kong (69%), Thailand (8%), Zambia (6%), UAE (5%) and Brazil (3%) (Tables- 4 to 6).

Table – 1 : Exports Value of Emerald (Cut & Uncut) : Total (By Countries)

(Value in ₹'000)

Country	2012-13	2013-14
All Countries	**26787394**	**21570148**
Hong Kong	5939848	15437906
USA	1382369	2240414
Thailand	573048	688359
UAE	17090589	657791
Switzerland	126357	469492
Italy	260398	351742
Japan	260686	337088
Germany	165255	305104
Belgium	105143	192372
Israel	87361	160243
Other countries	796340	729637

Note: *Quantity not given due to partial coverage; value figures, however, have full coverage.*

Table – 2 : Exports of Emerald (Cut) (By Countries)

Country	2012-13		2013-14	
	Qty ('000 ct)	Value (₹'000)	Qty ('000 ct)	Value (₹'000)
All Countries	**13680**	**26505695**	**93300**	**21327640**
Hong Kong	4132	5846029	32206	15367855
USA	2581	1381446	21312	2230382
Thailand	1842	572672	6843	682491
UAE	1114	17087213	552	649283
Switzerland	152	126357	159	469492
Italy	813	260398	4759	351742
Japan	1449	260686	4156	337088
Germany	634	165255	7347	305104
Belgium	43	105143	43	192372
China	61	46815	497	144540
Other countries	859	653681	15426	597291

Table – 3 : Exports of Emerald (Uncut)
(By Countries)

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**3**	**281699**	**2**	**242508**
Singapore	++	3190	1	78561
Hong Kong	1	93819	++	70051
Israel	++	5929	1	49592
UK	++	354	++	18605
USA	++	923	++	10032
UAE	++	3376	++	8508
Thailand	++	376	++	5868
Zambia	2	173707	++	610
Mauritius	-	-	++	508
Lithuania	-	-	++	120
Other countries	++	25	++	53

Table – 4 : Imports of Emerald (Cut & Uncut)
(By Countries)

Country	2012-13	2013-14
	Value (₹'000)	Value (₹'000)
All Countries	**37464291**	**22328772**
Hong Kong	15577401	15406943
Thailand	906008	1681973
UAE	18834845	1212683
USA	449423	522919
Sri Lanka	34221	88838
Japan	19149	14910
Zambia	722634	1429850
Brazil	184891	734698
Israel	1695	16050
Malaysia	16036	53278
Other countries	717988	1166630

Note: *Quantity not given due to partial coverage; value figures, however, have full coverage.*

Table – 5 : Imports of Emerald (Cut) (By Countries)

Country	2012-13		2013-14	
	Qty ('000 ct)	Value (₹'000)	Qty ('000 ct)	Value (₹'000)
All Countries	**9752**	**27369928**	**8714**	**17210848**
Hong Kong	6943	7092547	5299	13928171
Thailand	1323	803778	2212	1527813
UAE	1215	18776947	755	1000626
USA	154	312770	279	436668
Sri Lanka	16	34221	42	88838
Malaysia	2	16036	16	53278
UK	4	17313	14	45361
Germany	8	28185	11	33637
Israel	++	96	16	16050
Italy	6	4842	6	15944
Other countries	81	283193	64	64462

Table – 6 : Imports of Emerald (Uncut) (By Countries)

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**128**	**10094363**	**85**	**5117924**
Hong Kong	93	8484854	3	1478772
Zambia	11	721799	39	1427706
Brazil	12	184305	19	734654
Singapore	1	348349	++	706738
UAE	++	57898	++	212057
Thailand	8	102230	16	154160
Belgium	++	10	++	132890
USA	1	136653	1	86251
Tanzania	2	3625	5	62399
Russia	++	10477	++	38352
Other countries	++	44163	2	83945