

EMERALD



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EMERALD

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**GOVERNMENT OF INDIA
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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 is the other gemstone variety 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 and Afghanistan. Africa, Nigeria, Mozambique, Madagascar and Zimbabwe are other important emerald producing countries.

Madagascar was a globally significant producer of gem stone that included emerald, ruby and sapphire. Emerald was produced near Mananjary. 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.

Aquamarines: A few aquamarine gems are found in gravels at Magok in Myanmar. Aquamarine is also produced in Namibia, Sri Lanka, Mozambique, Madagascar, Nigeria, South Africa and Brazil.

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FOREIGN TRADE**Exports**

In 2011-12, exports value of emerald (cut & uncut) increased to ₹544.75 crore from ₹ 363.49 crore in the previous year. The share of cut emerald was about 98% and that of uncut emerald was merely 2% in 2011-12. Exports were mainly to Hong Kong (33%), USA (20%), UAE (15%) and Thailand (8%). (Tables - 1 to 3).

Imports

In 2011-12, imports value of emerald (cut and uncut) increased to ₹ 1062.73 crore from ₹ 495.70 crore in the previous year. The share of uncut emerald in total value was 56% and that of cut emerald was 44% in 2011-12. Imports were mainly from Hong Kong (38%), Thailand (18%), UAE (13%) and USA (8%) (Tables - 4 to 6).

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

(Value in ₹ '000)

Country	2010-11	2011-12
All Countries	3634975	5447525
Hong Kong	1163733	1785762
USA	951517	1109858
UAE	96322	797834
Thailand	394161	437879
Japan	117722	211244
Switzerland	102742	165611
Germany	126453	151889
Italy	64307	137336
UK	54404	98575
Singapore	352414	96176
Other countries	211200	455361

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

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

Country	2010-11		2011-12	
	Qty (‘000 Crt)	Value (₹‘000)	Qty (‘000 Crt)	Value (₹‘000)
All Countries	14930	3582664	24898	5347252
Hong Kong	2326	1129482	5250	1716900
USA	4573	951092	7809	1105135
UAE	102	96322	316	772090
Thailand	3422	393366	3744	436935
Japan	1492	117722	2751	211244
Switzerland	132	102742	325	165611
Germany	570	125950	1527	151889
Italy	424	60076	1242	137336
UK	38	49281	828	98575
Singapore	1242	352414	51	96176
Other countries	609	204217	1055	455361

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹‘000)	Qty (t)	Value (₹‘000)
All Countries	4	52311	3	100273
Hong Kong	4	34251	2	68862
UAE	-	-	1	25744
USA	++	425	++	4723
Thailand	++	795	++	944
Other countries	++	16840	-	-

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

(Value in ₹ '000)

Country	2010-11	2011-12
All Countries	4957091	10627382
Hong Kong	1618235	4022953
Thailand	828235	1904667
UAE	74298	1382683
USA	442244	825719
Zambia	660394	715834
Singapore	-	712739
Brazil	431627	673076
UK	138683	45057
Unspecified	263609	43325
South Africa	280220	678
Other countries	219546	300651

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

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

Country	2010-11		2011-12	
	Qty (^{'000} Crt)	Value (₹ ^{'000})	Qty (^{'000} Crt)	Value (₹ ^{'000})
All Countries	3945	2562232	7906	7590145
Hong Kong	1242	1058550	3534	3531999
Thailand	1949	736390	2683	1853623
UAE	12	22824	611	1140551
USA	352	299049	744	717570
Sri Lanka	67	69978	16	46593
Unspecified	166	263193	22	43244
UK	56	22453	108	42967
Italy	1	5922	52	41937
Japan	43	8909	55	39615
Germany	14	26416	24	24480
Other countries	43	48548	57	107566

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	51	2394859	78	3037237
Singapore	-	-	++	708299
Zambia	17	655689	18	695720
Brazil	11	430469	49	670735
Hong Kong	3	559685	3	490954
UAE	1	51474	++	242132
USA	3	143195	4	108149
Thailand	4	91845	4	51044
Colombia	++	7883	++	19903
China	-	-	++	15304
Israel	++	20911	++	7811
Other countries	12	433708	++	27186