

EMERALD



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EMERALD

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18 Emerald

Emerald is a variety of mineral beryl and is chemically a complex silicate of aluminium and beryllium ($\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$). Emeralds are rare & precious gemstones that command immense value on account of their colour, clarity and weight. Emeralds occur in hues varying from yellow-green to blue green. However, emeralds with unique velvety green colour with high degree of transparency are considered as most precious among gemstones.

RESOURCES

Occurrences of emerald are reported from Rajasthan, Odisha, Tamil Nadu and Andhra Pradesh. However, reserves have not been estimated so far. In Rajasthan, emeralds have been found to occur at a number of places in Udaipur, Rajsamand and Ajmer districts. In Ajmer district, emerald-bearing zones are located at Gudas and Bubani. Commercial deposits of emerald are reported mainly from Tikhi, Kalaguman, Kanj-kheda areas in Rajsamand district.

In Odisha, occurrences of emerald are reported from Bira-Mohorajpur belt in Balangir district, which extends into Sambalpur and Dhenkanal districts. Ghuchapada and Barmal prospects in Balangir 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. Mining of emerald was mostly undertaken manually by opencast method. 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 from time to time.

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.

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Madagascar was a globally significant producer of gemstone 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 Re-union. In Pakistan, the Fizzagat emerald mine is situated near the district headquarters Mingora in Swat valley.

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, in Beaver County, Utah rare red emeralds are found in the eastern slopes of the Wah Wah Mountains.

FOREIGN TRADE

Exports

In 2014-15 exports value of emerald (cut & uncut) decreased to ₹1594.54 crore from ₹2157.01 crore in the previous year. Exports were mainly to Hong Kong (50%), USA (18%) & Thailand (6%) (Tables- 1 to 3). The share of uncut emerald in total value was only 5% and that of cut emerald was about 95% during 2014-15.

Imports

In 2014-15 imports value of emerald (cut and uncut) increased to ₹6,306 crore from ₹2,233 crore in the previous year. The share of uncut emerald in total value was only 10% and that of cut emerald was about 90% in 2014-15. Imports were mainly from Hong Kong (75%), UAE (13%), Thailand & Zambia (3% each) (Tables- 4 to 6).

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

(Value in ₹'000)		
Country	2013-14	2014-15 (P)
All Countries	21570148	15945392
Hong Kong	15437906	7964722
USA	2240414	2938080
Thailand	688359	921585
UK	155602	636409
Italy	351742	494869
UAE	657791	441256
Singapore	91859	391703
Japan	337088	324490
Switzerland	469492	312285
Germany	305104	245595
Other countries	834791	1274398

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

Country	2013-14		2014-15 (P)	
	Qty (‘000 carat)	Value (₹'000)	Qty (‘000 carat)	Value (₹'000)
All Countries	93300	21327640	125929	15213538
Hong Kong	32206	15367855	37345	7964722
USA	21312	2230382	28990	2938080
Thailand	6843	682491	11116	921585
UK	10932	136998	27849	636409
Italy	4759	351742	3361	494869
UAE	552	649283	3235	441256
Japan	4156	337088	4121	324490
Switzerland	159	469492	205	312285
Germany	7347	305104	4143	245595
China, Peo, Rep.	497	144540	400	189099
Other countries	4537	652665	5164	745148

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

Country	2013-14		2014-15 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	2	242508	3	731854
Singapore	1	78561	2	391703
Hong Kong	++	70051	++	108533
Macao	-	-	++	103248
Thailand	++	5868	1	66031
UAE	++	8508	++	42139
Israel	1	49592	++	16794
USA	++	10032	++	2856
Estonia	-	-	++	513
Chinese Taipei/ Taiwan	-	-	++	31
UK	++	18605	++	5
Other countries	++	1291	++	1

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

Country	2013-14	2014-15 (P)
	Value (₹'000)	Value (₹'000)
All Countries	22328772	63062394
Hong Kong	15406943	47018351
UAE	1212683	8328642
Thailand	1681973	2162739
Zambia	1429850	2010643
USA	522919	957693
UK	45402	305619
Brazil	734698	286932
Lebanon	5201	207149
Sri Lanka	88838	122525
Singapore	706738	15
Other countries	493527	1662086

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

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

Country	2013-14		2014-15 (P)	
	Qty (‘000 carat)	Value (₹‘000)	Qty (‘000 carat)	Value (₹‘000)
All Countries	8714	17210848	65144	56629469
Hong Kong	5299	13928171	41172	43558519
UAE	755	1000626	6054	8031338
Thailand	2212	1527813	12868	1994471
USA	279	436668	1217	913882
UK	14	45361	4	279128
Lebanon	1	5201	10	207149
Sri Lanka	42	88838	917	122385
Sweden	-	-	51	73634
Italy	6	15944	20	56290
Unspecified	4	11647	900	1151158
Other countries	102	150579	1931	241515

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

Country	2013-14		2014-15	
	Qty (t)	Value (₹‘000)	Qty (t)	Value (₹‘000)
All Countries	85	5117924	32	6432925
Hong Kong	3	1478772	3	3459832
Zambia	39	1427706	7	1988162
UAE	++	212057	++	297304
Brazil	19	734654	9	281714
Thailand	16	154160	10	168268
Tanzania Rep.	5	62399	1	45268
USA	1	86251	++	43811
Mauritius	-	-	1	37300
UK	++	41	++	26491
Unspecified	++	514	1	32324
Other countries	2	961370	++	52451