

# 68 Salt (Rock)

Occurrences of salt (rock) in India are scanty. The only producer which obtains salt (rock) in meagre quantities, is the Hindustan Salt Ltd, Jaipur from its mines located in Mandi district of Himachal Pradesh (Table - 1). The main source of common salt is sea water. It is being obtained from water of salt lakes, seas, or sub soil brines after evaporation due to solar heat.

When pure, the common salt is the mineral halite, which is being an essential need of human beings, and it is being produced from the beginning of human history. Halite is colourless or white but may contain various tints.

## RESOURCES

As per UNFC system, the total resources of salt (rock) as on 1.4.2010 are provisionally estimated at 16.03 million tonnes in Mandi district of Himachal Pradesh only. Out of the total resources, about 10.04 million tonnes are proved reserves and 5.99 million tonnes are probable reserves.

## PRODUCTION, STOCKS AND PRICES

The production of salt (rock) in 2009-10 at 1,837 tonnes decreased by 9% as compared to that in the previous one year due to lack of market demand (Table - 2). There was only one reporting mine of salt (rock) which was in the public sector and located in Mandi district of Himachal Pradesh in both the years (Table - 3).

Mine-head stocks of salt (rock) at the end of 2009-10 was 73 tonnes as against 27 tonnes at the beginning of the year, entirely in Himachal Pradesh (Table-4).

The average daily employment of labours in 2009-10 was 30 as against 27 in the preceding year. Prices of salt (rock) are furnished in the General Review on 'Prices'.

**Table – 1 : Producer of Salt (Rock), 2009-10**

Name and address of producer	Location of mine	
	State	District
Hindustan Salts Ltd, B-427, Pradhan Marg, Malviya Nagar, Jaipur - 302 017, Rajasthan.	Himachal Pradesh	Mandi

**Table – 2 : Production of Salt (Rock)  
2007-08 to 2009-10  
(By State)**

(Quantity in tonnes; value in Rs. '000)

State	2007-08		2008-09		2009-10(P)	
	Qty	Value	Qty	Value	Qty	Value
<b>India</b>	<b>1216</b>	<b>2518</b>	<b>2011</b>	<b>3630</b>	<b>1837</b>	<b>4926</b>
Himachal Pradesh	1216	2518	2011	3630	1837	4926

**Table – 3 : Production of Salt (Rock)  
2008-09 and 2009-10  
(By Sector/State/District)**

(Quantity in tonnes; value in Rs. '000)

State / District	2008-09			2009-10(P)		
	No.of mines	Qty	Value	No.of mines	Qty	Value
<b>India</b>	<b>1</b>	<b>2011</b>	<b>3630</b>	<b>1</b>	<b>1837</b>	<b>4926</b>
Public sector	1	2011	3630	1	1837	4926
<b>Himachal Pradesh</b>	<b>1</b>	<b>2011</b>	<b>3630</b>	<b>1</b>	<b>1837</b>	<b>4926</b>
Mandi	1	2011	3630	1	1837	4926

## SALT (ROCK)

**Table – 4 : Mine-head Stocks of Salt (Rock) , 2009-10 (P)  
(By State)**

(In tonnes)

State	At the beginning of the year	At the end of the year
<b>India</b>	<b>27</b>	<b>73</b>
Himachal Pradesh	27	73

### MINING

The board-and-pillar underground method of mining was adopted in Guma rock salt mine of Hindustan Salts Ltd when it was in operation. Mining is presently carried out only in Mandi mines. The salt deposit in Drang & Mandi mountain ranges along with Joginder Nagar-Mandi Road can be exploited commercially through 'Solution Mining' process and fed directly to the industry producing caustic soda besides other plants. Hindustan Salts Ltd, is in the process of appointing consultant for the said Solution Mining Project. The project involves two stages, namely, financial evaluation of the project based on the techno-feasibility report prepared earlier for feeding a 60,000 tpy caustic soda plant with required quality of brine at Mandi. The second phase will involve formation of a new joint venture, etc. This project, if implemented, is likely to be highly profitable. There is a proposal to convert Drang salt mines to health resort by Hindustan Salts Ltd as these 225 m deep mines are free from viruses and bacteria. The proposal is subject to economic viability and approval from DGMS and other departments concerned.

### USES

Salt, in addition to its culinary and domestic uses, is employed in meat packing, fish curing and its preservation, dairying, preservation & processing of hides, manufacturing of soaps and dyestuff, dyeing and finishing of fabrics, refrigeration, glazing earthenware, explosives, bakery products, for soil stabilisation, in manufacture of artificial rubber

and as a wood preservative. In agriculture, salt is used for treating hay and as a fertilizer for certain crops. In countries with cold weather conditions, salt is used in controlling ice and snow on streets and highways.

### Industrial Applications

Salt is an important raw material for chemical industry. It is used in the production of basic chemicals like sodium carbonate (soda ash), caustic soda, hydrochloric acid, chlorine, bleaching powders, chlorates, sodium sulphate (salt cake) and sodium metal. These basic chemicals, in turn, are used in the preparation of various end products, such as soaps, detergents, chlorinated hydrocarbons like DDT and carbon tetrachloride. Other important uses are in food processing and as freezing-point depressant in refineries and milk supply schemes, for the treatment of industrial wastes, in the manufacture of synthetic indigo, explosives, papers, purification of drinking water, etc.

The rock salt produced from Mandi mines contains 67.81% NaCl and it is not suitable for human consumption as the content of sodium chloride should be 96% NaCl (Min). It is generally used to feed cattle.

The production of salt (other than rock salt) in 2009-10 was at 23.95 million tonnes. Private sector contributes 91.5% of salt production in the country, 6.8% is produced by cooperative sector whereas remaining 1.7% is contributed by public sector. During the recovery of salt from marine sources, a variety of by-products mainly, gypsum, magnesium chloride, magnesium sulphate and liquid bromine are recovered.

## SALT (ROCK)

A portion of salt produced is iodised in order to meet the requirements of goitre-endemic areas in the country. Iodised salt is produced by mixing potassium iodate with salt using spray, drip feed, dry mixing and submersion processes. Iodisation of salt is carried out in plants operated by Sambhar Salts Ltd (a subsidiary of Hindustan Salts Ltd in public sector), Kharagodah, Gujarat. About 836 plants including 68 refineries with an annual capacity of 14.59 million tpy produced 5.82 million tonnes iodised salt. The Hindustan Salts Ltd has also set up an iodisation plant at Ramnagar in Nainital district, Uttarakhand.

## CONSUMPTION

Industrial consumption of salt is steadily increasing and has registered a record high of 10.06 million tonnes in 2009-10. During the same period, human consumption of salt was reported at 5.64 million tonnes. Consumption of rock salt is also reported by a few petroleum refineries of Indian Oil Corporation and Hindustan Petroleum Corporation. The industrial consumption of salt is given in Table -5.

**Table – 5 : Industrial Consumption of Salt  
2007-08 to 2009-10  
(By Industries)**

(In '000 tonne)

Industry	2007-08	2008-09	2009-10
<b>Total</b>	<b>9350.3</b>	<b>9534.1</b>	<b>10058.5</b>
Caustic soda/soda ash	7252.2	7345.7	7440.0
Misc. Industries (Papers/Dye, foods, steel, oil etc.)	2098.1	2288.4	2618.5

*Source: Salt Commissioner, Govt. of India, Jaipur.*

## FOREIGN TRADE

### Exports

Exports of salt (other than common salt) increased to 1.55 million tonnes in 2009-10 from one million tonnes during the preceding year. Exports were mainly to Japan (24%), Qatar (21%), Bangladesh (14%), Indonesia (10%) and Vietnam (9%) (Table-6).

### Imports

In 2009-10, imports of salts (other than common salt) were at 30,838 tonnes as compared to 31,948 tonnes in the previous year. Imports were mainly from Pakistan (97%) (Table-7).

**Table – 6 : Exports of Salt  
(Other than common salt)  
(By Countries)**

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
<b>All Countries</b>	<b>1001498</b>	<b>1487346</b>	<b>1545022</b>	<b>1955033</b>
Japan	462254	275293	366932	434647
Malaysia	22001	166672	35714	284863
Qatar	154455	203599	319078	265568
Bangladesh	26139	28097	215055	186942
Indonesia	64503	55282	149994	157636
Vietnam	59610	102797	138228	120257
China	18552	216421	35393	111999
Korea, Rep. of	42470	66263	119518	103550
Thailand	378	5179	60818	69615
UAE	34739	131259	24848	59861
Other countries	116397	2364	79444	160095

## SALT (ROCK)

**Table – 7 : Imports of Salt (Other than common salt)  
(By Countries)**

Country	2008-09		2009-10	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
<b>All Countries</b>	<b>31948</b>	<b>69337</b>	<b>30838</b>	<b>67124</b>
Pakistan	31389	57915	29994	59619
Thailand	300	2530	361	3083
UK	27	376	74	1148
Germany	86	2260	78	988
Iran	–	–	260	577
Italy	13	117	8	348
USA	35	3409	7	303
China	16	1084	15	176
Israel	9	316	1	77
Netherlands	35	895	5	75
Other countries	38	435	35	730