

STATUS QUO AND DEVELOPING TREND OF THE DEEP PROCESSING SALT PRODUCTS

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1 GENERAL SITUATION OF THE PRODUCTION AND CONSUMPTION OF SALT PRODUCTS AT HOME AND ABROAD

1.1 Basic situation of salt industry in the world

At present, the salt output in the world increases steadily, and the salt output in 2006 is 240 million tons. In the past ten year, only the salt output in China increases 30%, the salt output in other countries such as America, Canada, Mexico, Chile, India and Germany also have some increase. The trade for the salt is stable, and the annual trade quantity is commonly about 30 million tons, which equals to 15% of the total output in the world. The first five countries for exporting the salt is Australia, Mexico, Canada, Holand and Germany, the export quanlity of these five countries is the 80% of the total trade quantity.

1.2 Production and consumption of the salt products in China

China is one of the biggest countries for salt production and consumption in the world, and the increasing scope of salt production keeps in the level of double figures, and the development of salt industry in China is the fast one in the world. The salt output in Asian area has exceeded 70,000,000 tons, which is

about 30% of the total output in the world, and the trade quantity of international salt industry in Asian area is the most active one, and half of the global salt trade happens in Asian market. In 2007, the salt output in China is 59,750,000 tons, which is 70% of salt output in Asia, and the output in China increases in the speed of 15%, therefore the salt output is expected to approach 70,000,000 tons in 2010. The main reason for the fast development of salt industry in China is the fast development of soda and caustic soda industry and PVC industry. The abundant demand and good market environment of the industries above profitably accelerate the development of the salt industry in China.

2 CONCEPT AND SORTS OF VARIETY SALT

2.1 Concept of variety salt

The variety salt is the salt which takes salt as the carrier, and is processed through adding adequate microelement and accessorial material or through producing it by special process, and the salt possesses special function and use. It is the new concept from the salt industry in 1980s, and it is the new field of the development of salt industry. It can be classified in: edible variety salt and functional variety salt. The concept of variety in China equals to the summation of

“advanced table salt” and “special using salt” in developed countries. The edible variety salt includes: series of nutrition intensified salt, pickle salt, season salt, health protection salt and special edible processing using salt; the functional variety salt mainly includes daily use series, farming using salt, printing and dyeing using salt, fishing salt, special using salt for curry, metallurgy using salt and water treatment salt etc.. According to the international sorts, all of the salt products excluding edible salt and soda and caustic soda industry salt are called variety salt. However only the salt of special function and use is called variety salt in China, and how to scientifically divide the property scope of salt products and ensure the meaning of variety salt will be the problem that the salt industry has to define in further research.

2.2 Quality and character of variety salt

Edible salt is mostly in white and crystalloid shape, in good relaxation and special smell, and in difference of common edible salt, the variety salt is special in balanced adsorbing nutrition and function, which makes up the lack of microelements such as vitamin, calcium, iron and zinc etc. Because of the areas and habit of diet, it is not only scientific and effective, but also economic and applied, and it is recognized as the best method for “edible salt supply” by the nutrition expert at home and abroad. Inedible variety salt possesses the shapes of grain, block, milkiness and cream etc., after being compounded with different colours and fragrances according to the difference of use and function. It satisfies the demand of different consumers.

Main characters of variety in China are as follows:

2.2.1 Balanced absorption of nutrition is paid attention to. Variety salt not only possesses the function about supplying iodine what common iodine salt possesses, but also pays attention to the balanced absorption of nutrition, and all of the products are produced by the scientific methods and special process, such as the zinc intensified nutrition salt is propitious to make the children’s brain healthy, increasing memory and the growth of body.

Iron intensified nutrition salt that added abundant compound in iron can be used to cure the anaemia which is caused by lacking of iron body, increasing studying attention and memory of the children and the immunity of the human body. Calcium intensified nutrition salt is propitious to every kind of people who need to make up calcium, and it can prevent and cure the osteoporosis and arteriosclerosis and adjust the balance of other minerals and the activation of enzyme etc.

2.2.2 Exiguous sorts of function. Variety salt has more exiguous sorts in function, it can be divided into pickle salt, bloat salt, seasoning salt in various industries as food processing, printing and dyeing and leather etc., the confections of variety salt are different by the demand.

2.2.3 Possession of the special effects of health protection and hairdressing. Inedible variety salt possesses the function of accelerating blood circulation, diminishing inflammation and sterilizing and enhancing the absorption of other nutrition elements, such as the feet bath salt can lighten the tiredness of the body, restrain the increase of the epiphyte; the hair washing salt can prevent the dander.

2.2.4 Particularity of adaptive people. The adaptive people for variety salt are abroad, and it possesses some particularity. Generally, the middle aged and aged people need to eat salt in low natrium for a long time and make up calcium salt and selenium salt for some times, and the pregnant woman need to eat the edible zinc salt and eat calcium salt and selenium salt for some times; teenagers need to eat edible calcium salt mainly and eat zinc salt and selenium salt etc for some times. Compared with other intensified nutrition food, edible variety salt don’t need to make up sedulously, just need to be consumed with the eating and supplying at the same time, the nutritional and healthy life will come.

3 DEVELOPING COURSE OF VARIETY SALT IN CHINA

3.1 The continuous increase of the output of products

In China, the variety salt initially possesses just a few kinds of season salt, and the annual sales volume is less than 500 tons. Through more than 20 years' development, the kinds of variety are about more than 100, and the market cultivation is gradually mature. According to incomplete statistic, the output of variety salt of China in 2005 is about 120,000 tons (excluding small industrial salt), the development of which is vigorous.

3.2 Continuous improvement of producing process and continuous perfection of producing condition

In the initial period of development of variety salt, it was packed by simple mixing and heating seal by handwork and produced in rough producing site. In recent years, variety salt develops fast, and series of variety salt products in different characters are developed by many producing enterprises, and they gain the attention and welcome from the consumers after being putting into the market. The producing process and technology of variety salt gradually upgrade, and the content of science and technology and the added value of products increase further. The process technology gradually matures, and it has realized the producing course from producing casing and process parameter control to full automatically packing. The principle system of the products gradually matures, the quantity of the products steadily increases and the methods of supervision are gradually strict. The big change of producing environment can basically be according to the request and criterion of the country in managing the food and cosmetic production enterprises.

3.3 Gain of the achievements by adjustment of product structure and rapidness of the increase of kind specification

From 1980s, the professional research institutes and some salt making enterprises entered on researching the series of season salt products. Until 1990s, with the increase of the health awareness and development of science and technology, the series of nutrition and health protection of variety salt are continuously developed, such as the eating of

complex nutrition salt (vitamin and mineral), helix alga plant iodine salt, green edible salt and top grade table flavoring, which aims at various kinds of flavorings in various cooking methods etc. In 21 centuries, the variety salt rapidly develops in vertical and horizontal orientation of cross industries and areas, and it enlarges the exploitation of the series of daily use products and the products in special function, such as feet bath, bath, face clean, body rubbing, bath salt milk and hair wash salt milk etc., the salt used in small industry includes preserved szechuan pickle salt, water treatment salt, printing and dyeing salt, medicine salt and intestines salt etc..

3.4 Forming of some strong enterprises through the push of name brand strategy.

The production of variety salt in China has entered in the times of the Warring States, and the number of production enterprises is big and the areas spread broadly. According to the calculation of related information, the number of enterprises who enter into producing variety salt is totally about 70, including about 30 production enterprises of salt industry. The production of variety salt mainly focuses on the salt industry corporation and salt making enterprises. Through market competition in many years and survival of the fittest, it forms the industry structure which gives priority to big salt making enterprises and corporation groups and forms a passel of strong enterprises. At present, the bigger variety salt production enterprises at home include Sichuan Jiuda Variety Salt Co., Sichuan Hebang Variety Salt Co., Guangzhou Maoming Variety Salt Co., Variety Salt Co. of Yunan Salt and Chemical, Zhangjiang Haozhou Lanhaixing Salt Making Factory, Variety Salt Co. of Hunan Provincial Salt Industry Co. and Shanghai Modun Variety Salt Co. etc.

4 ANALYSIS OF STATUS QUO OF OVERSEAS VARIETY SALT

At present, the consumption of variety salt in eating and food processing is about 10% of the total output of salt in European and American areas, if the snow used salt and water treatment salt belongs to variety salt, the

consumption rate of variety salt will be a huge figure. For example, the annual salt for snow melting in road in America is about 15 million tons to 20 million tons. America is the country where the per capita consumption of variety salt is the most, and the consumption rate of edible variety salt is 5% of total salt consumption, whose total output is about 1 million tons annually. Japan is also one of the biggest countries for consumption of variety salt, and its consumption of edible variety salt is about 50,000 tons annually and the per capita consumption is also too high.

Usually the industrial salt excluding soda and caustic soda industrial salt belongs to the kind of special industrial salt internationally, which is the variety salt products for industrial use. Additionally, the snow melting salt usually doesn't belong to the series of variety salt products. According to the sorts of the Euramerican habits, the variety salt can be divided into: (1) general industrial salt: water treatment salt, leathering salt, well drilling salt, metal processing salt, weaving and printing and dyeing salt, paper pulp producing salt and rubber producing salt; (2) farming, hunting and fishing salt, farming salt, fowl salt, natural environment modifying salt, marine lives processing salt and cheese processing salt; (3) food processing salt: meat processing salt, canning producing salt, bread processing salt, flour processing salt, potato piece processing salt, biscuit producing salt and pet food salt; (4) season and nutrition salt: season salt series, iodine salt, fluorine salt, low sodium salt, iron salt and zinc salt etc.

Additionally, a kind of variety salt is divided in Japan, Korea and Taiwan area of China, which is daily use series of variety products, such as the bamboo salt toothpaste and bamboo salt fancy soap in Korea and lady salt for ladies' face protection in Japan etc. However, it usually doesn't belong to a single kind of variety salt product internationally.

4.1 General situation of the development of variety salt industry in northern American areas

The salt industry production is monopolized mainly managed by not so many big salt and chemical groups and multinational corporations. It mainly includes Moton Salt

Industry Corporation of America, Jiayi Corporation and Canadian Salt Industry Corporation etc., which usually produce and sell variety salt, especially the Morton Salt Industry Corporation of America, it develops various kinds of variety salt products, including season salt, nutrition and health protection salt, water treatment salt and farming salt etc., and it opens many branch corporations for producing and selling variety salt in the world.

America is the country in the world where the production and consumption of variety salt is the most, excluding the consumption of food processing, direct season and farming salt. The consumption of water treatment salt is also big, which achieves 800,000 to 900,000 tons per year, excluding the application of it in industrial water treatment and daily life. It is used in the family, office and hotel etc. where they use water treatment salt to modify the quantity of water.

Canada is the one of the most important country for producing salt in the world, where the salt resource is abundant and mainly includes lake salt and rock salt, and the annual output of salt is about 15 million tons. The consumption for salt in Canada is mainly chlorine and alkali industrial and snow melting salt, which is about the 90% to 95% of the total consumption, and the other salts are water treatment salt, food processing salt, aquatic product processing salt, farming salt and other industrial salt.

Canadian Salt Industry Corporation is the main salt making corporation of Canada, excluding producing industrial salt and edible salt. The corporation also produces water treatment salt, snow melting salt and farming salt etc. Its selenium farming salt product is very especial, and this product is to suppress the powder salt into the block shape in 25 kg, excluding the adding of selenium element of 120 mg/kg, it also adds microelement such as zinc, manganese, copper, iodine and cobalt, and it is the better farming salt product in function.

4.2 Production and consumption of variety salt in European areas

Europe is the important area for producing and consuming salt products in the

world, the production of which spreads abroad. The varieties and specifications of salt is entire, including France and Spain who give priority to produce sea salt and Holland, Germany and Britain who give priority to produce vacuum salt, and the refined salt is produced by adopting exploitation of rock salt water solution and refined brine vacuum evaporation process. Meantime Germany, Britain and Italy etc. also directly process and produce mine salt products. The processing and production of variety salt in European countries is also mainly managed by salt making corporations, who process and produce farming salt, water treatment salt and various variety salt products according to the market demand. At present, the important deep processing and producing corporation in Europe is European Salt Industry Corporation (ESCO) which is incorporated by German Potassium Salt Corporation and Belgian Solvil Corporation in 2003, excluding producing edible salt and soda and caustic soda industrial salt, the corporation also produces and processes the series of season salt, farming salt, water treatment salt and medicine salt etc. Britain Salt Industry Corporation is also an important salt making corporation in Europe, the main product of which is vacuum salt, and it takes the vacuum salt as the raw material to process and produce series of variety salt.

4.3 General situation and developing trend of variety salt market in Japan

At present, the salt consumption of Japan is about 1.5 million tons per year. There are 6 salt making corporations in Japan (the number is 7 corporations firstly, and then one of them is bankrupted). The total productive capacity of these 6 salt making factories is 1.4 million tons per year, the rest of salt is imported salt. The professional salt making corporations in Japan commonly produce and process variety salt. Additionally, there are about 400 corporation who produce variety salt, especially the production of series of season variety salt, and the production and consumption of variety salt is 130,000 tons annually (including edible and inedible salt), which is about 10% of salt output inside Japan. The sorts of variety salt are various and the usages are abroad, and usually the raw

materials are the sea salt in high quantity produced by Japan. For example, the snow melting salt which is produced by Zanki Salt Industry Corporation in Japan, the NaCl content is more than 95%, and the average grain size is 800-1300 μm , the packing is 25 kg paper bag. The sorts of variety salt in Japan are various, the uppermost sort is the variety product for edible season and the number of sorts is more than 200.

4.4 Developing trend of overseas variety salt industry

The output of salt gradually increases in the global range, but the change of the market consumption is different. At the aspect of industrial salt, the consumption of soda and caustic soda salt descends gradually in the developed countries such as Europe, America and Japan etc., but it increases rapidly in Asian areas etc. At the aspect of edible salt, the consumption takes on descending trend in many countries, but with the gradual increase of the number of population in the world, the consumption also increases. According to the information, the usages of salt is more than 14,000, and with the continuous development of the usages of salt, the market capacity of variety salt will be bigger and bigger, which is the general trend. At present, the consumption of variety salt in developed countries is usually about 10% of total consumption of salt products, and the consumption of variety salt in developing countries is much less, especially some countries don't have this concept. Therefore, the global market capacity of variety salt is huge, and the sorts and number of variety salt will increase gradually.

On the other hand, the usages of salt will be more and more specific, and the former common usages will be substituted by the special products. For example, the vacuum salt products is used in weaving and printing and dyeing industry in the past of Euramerican areas, then in order to increase the quantity of the product, the printing and dyeing salt is developed to be used in this industry, which is the developing trend of deep processing of salt. There is special quantity standard established for many variety products in Euramerican countries, such as snow melting salt, water treatment salt, cheese salt and farming salt etc.

It can not only guarantee the request for the quantity of products, but also possess the meaning of monopolizing the market technology.

5 ANALYSIS ON STATUS QUO OF VARIETY SALT IN CHINA

Comparatively, the beginning of production of variety salt in China is later. According to the statistic, the consumption of variety salt in China at present is about 80,000 tons, which is no more than 1.5% of the total number of the whole country. The exploitation of variety salt in China mainly focuses on the series of edible variety salt, and other series such as daily using, washing, cosmetic etc. develops in recent years and doesn't form mature consuming market. Since 1990s, the research and exploitation for variety salt takes on fast increasing trend, excluding the salt making enterprises, many salt industry enterprises also don't lose time and develop variety salt products in order to satisfy the increasing demand of market. According to inadequate statistic, there are more than 60 variety salt corporations in China at present, including more than 30 edible variety salt making corporations and 33 inedible variety salt corporations.

At present, there are three types of edible variety salt corporations, firstly, it is the circulating corporation (managing by provincial and civic salt industry corporations), and the producing corporations of most provinces belong to this type. There are 19 corporations, among them, Jiangsu, Zhejiang, Guangdong, Hebei, Jilin, Heilongjiang, Yunnan and Shandong etc. develop fast. In these corporations, excluding the Jilin Provincial Variety Salt which is built by the China National Salt Industry Corporation and Jilin Provincial Salt Industry Corporation together, others are built by the provincial salt industry corporation. Secondly, it is the variety corporation built by the producing enterprises, and there are 10 corporations, mainly in Liaoning, Tianjin, Hebei, Shandong and Sichuan province etc. Thirdly, it is the variety salt corporation of cross industry, and at present just the Liaoning Hongmei Group gains the producing license from the producing main department of salt industry.

At present, the variety salt making corporations in China possess the characters as follows: (1) small producing scale and capacity. Excluding the producing scale of Jiuda and Jilin Provincial Salt Industry Corporation is more than 30,000 tons per year, a few corporation are between 500 tons per year and 3,000 tons per year and most are less than 500 tons per year; (2) simple type. The products produced by every enterprise are strictly following the national industry standard, and the specification of the products are commonly 500g PP velum packing and very few variety salt corporations make use of 50kg large packing (3) simple sales channel. Most of variety salt corporations mainly depend on the existing selling network system of salt industry corporations. Excluding some corporations extend to county salt industry corporations in few provinces, most of the sale only extends to the central cities of the provinces (4) because the edible salt is state-monopolized and valorized, the freeness of the management for enterprises is smaller, the selling quantity is smaller and the profit space is not big.

5.1 Low centralization of industry

The beginning time for developing variety salt of salt industry corporations and the producing enterprises of other industries at home is different and the degree for joining in is different. Therefore, in the exploitation of products, the phenomena of following the lead of other corporations is relatively bad. If some enterprise develops a new product, there will be many enterprises following its lead and putting similar products to the market. The variety salt in China doesn't form a special market, and the similar products forms bad competition, which is bad for the whole development of the industry. From the strategic level, the low centralization of industry certainly will lead to the repeating devotion of exploitation fee and the superposition of the market appropriation, but it is very difficult to solve these problems, which need the conformity of the whole salt making industry and the change of the industrial policy. Under the situation of putting the variety salt market into edible salt state monopolized, for the leverage function of

the market benefit, this problem can't be solved if the problem of the allowance of entering the markets in other places.

5.2 Gradual clarity of the competitive structure of the brand

With the development of variety salt market, the consumers are gradually mature and rational, and the brand becomes an important factor for choosing commodity. Professionals points out that the salt making industry will realize new conformity under the background of national macro-control, and some middle and small enterprises in weak capital strength and bad outstanding achievement will be fall into bankruptcy, and the brand competition of the variety salt industry will be on the strategic schedule. The related change of the salt industrial policy of China in recent days is good for the maturation of the whole variety salt industry, and the demand space for variety salt in China is still huge, and it is good to the continuous development of the variety salt strong enterprises from long-term. In the development of the future, the brand competition of variety salt industry will be more obvious.

Furious market competition makes the enterprises pay more attention to the value of brand. For with the adjustment of policy, the step of market exploitation of variety salt will be fast and the market will be more transparent and normative, which will create advantages for the strong and brand enterprises to go to other markets. Meantime, it will make the variety salt industry face more furious domestic competition and international competition. The exploitation concept that the products is the foremost gradually becomes the common opinion of variety salt producing enterprises, and the value of the brand is paid more and more attention to.

5.3 Furious market competition

At present, more and more salt producing corporations and provincial and civic salt corporations begin to enter in the range of producing variety salt. Originally, the variety products are mainly produced and processed by the salt making corporations. For the

preponderant conditions of salt industry monopolized management, basically the salt industry corporations of every province and many civic salt industry corporations begin to produce variety salt, such as Guangdong Shencheng Salt Industry Corporation, Maoming Salt Industry Corporation and Zhejiang Hangzhou Salt Industry Corporation etc., who take the variety salt as their important managing project. Because of the synchronous entering in different positions on producing and processing variety salt, the market competition is gradually furious. The out-of-order production and processing isn't good for the continuous development of variety salt industry.

6 DEVELOPING TREND OF VARIETY SALT IN CHINA

With the development of society, the step for reforming salt industry will be fast, and the deep processing of salt is the leading direction of salt industry reform and product structure adjustment. With the continuous innovation of technology and the application of biology technology and newest scientific and technological achievements, the products develop in the direction of special function, nutrition and health protection and vertical and horizontal directions of usages, and it takes on new face in fast development. In 3 to 5 years of the future, the consumption of variety salt in China will be about 10% of the total quantity of edible salt, achieving about 1,000,000 tons.

6.1 Lead of the national policy

In order to accelerate the development of salt industry in China in the new industrial style and promote the adjustment of industrial structure, in the general aim of Guidance Attitude of the Structure Adjustment of National Salt Making Industry, the National Development and Reform Commission points out: "Through technology innovation and structure optimization, to take the end products of salt as the aim to prolong the chain of industry and adjust the structure of product, develop the products in high added value and upgrade the whole benefit of the industry". And the sixth item: "to develop variety salt,

optimize the structure of industry and build new industrial style of salt making industry." "To transfer the unique resources advantage into economic benefit, and to realize the integration of economic benefit, social benefit and environmental benefit". "In 2010, the new kinds of salt will be more than 200 from less than 100 kinds at present." The guidance attitude supplies policy support for the aspects of structure adjustment of salt industrial products, advancement of the change of increase method of salt industry and guidance of the salt industry in China into international direction.

6.2 Regional development

For the difference of areas, the living habits and living level of the people in every places are different and the consumption of variety salt is also different, such as the consumption of season salt in the southwest areas such as Sichuan and Chongqing etc. and few midlands of China is gradually widely, especially in Chongqing, it is known by all of the people, in the areas of littoral in faster economy, the series of nutrition and health protection are preferred by people very much, and it increases in the speed of 50%, and the products for hairdressing and skin protection are also popular by the women; and in the northwest farming developed areas such as Mongolia and Gansu etc., the consumption of farming salt and currying salt is 10,000 tons; in the areas with developed light industry such as Zhejiang and Jiangsu etc., the salt is applied in increasing the quality of printing and dyeing products. With the continuous increase of the people's living level and the national economy, the fast increase of economy also drives the different development of variety salt in different areas at the same time.

6.3 Development in the direction of nutrition and health protection

Nutrition is the powerful source of the development of human being, and health is the continuous pursue of the advancement of human being. With the development of society, the understanding of people about nutrition salt is deepening gradually, and it forms the market consumption fever of nutrition salt.

Many variety salt making enterprises produce various series of variety salt in nutrition and health protection according to the demand of market, such as zinc intensifying nutrition salt, iron salt, selenium salt, complex season nutrition salt, blood supplying salt, balanced health salt, low sodium salt and lactoflavin intensified nutrition salt. In recent years, with the continuous development of salt industry production and the demand of consumers, many nutrition salt in different characters are in market, and it only enriches the season market, but also possesses some function of medicine cure and health protection, and they are popular by the consumers in the market.

6.4 Annual gradual increase of consumption of farming salt

The usage of farming salt products has been for more than 10 years. China is a large country with farming production, with the adjustment of agriculture industrial structure, farming industry becomes an important composition of agriculture, and its status in the national economy is stronger and stronger. The farming salt such as fat cattle salt, milch cow salt and sheep salt is a product designed according to the situation that the feeding quantity for cattle and sheep is too small. The main feed is cropper straw which is lack of nutriment and the mineral elements. This kind of salt includes the mineral element which is a must for the growth of cattle and sheep: calcium phosphor, iron, copper, cobalt, zinc, iodine and selenium, or to add adequate dissolving nonalbumen azote, dissolving carbon hydrate and vitamin, the microelements can supply a favorable derment environment for the rumen of ruminant, accelerating the abundant breeding of animalcule of rumen, increasing the quantity of appetite and advance the assimilation, absorption and utilization of feed especially the fibrous feed.

6.5 Gradual fashion of daily used salt

According to the investigation, the selling quantity of washing industry occupies the first five positions in the retailing industry of China, and it increases in the speed of 10% annually. For the usage of salt is abroad and the washing

industry just begins, the space of development is huge. The benefit of this industry is abundant and many enterprises prefer this industry, so this industry will be a vigorous industry in the several years of future.

6.6 Annual gradual increase of selling quantity of water treatment salt

At present, the water treatment salt doesn't form the series of special products in China. Generally it is used from adding some additives into industrial salt products. The consumption of water treatment salt increases annually, excluding the industrial water treatment. It develops its consuming market at the aspects of public and family life. Shanghai Morton Salt Industry Company strengthens the special exploitation of water treatment salt, and the various water treatment salt products and related water treatment machine which come into the market have good market effect.

6.7 Exploitation of special weaving and printing and dying variety salt

At present, the salt quantity applied for printing and dying in China is huge, according to the introduction of Guangdong Provincial Company, the salt consumption for printing and dying just in Guangdong areas annually is 150,000 to 200,000 tons. For there isn't special salt for printing and dying at present in China, the salt for printing and dying everywhere is usually vacuum salt making products with better quality and there are some requirements for the content of calcium and magnesium ion. At present, water treatment usually belongs to the managing scale of small industry and is planned and managed by the salt industry company, however, being different with soda and caustic soda industrial salt, the market doesn't open up. We consider that the market capacity of water treatment salt and printing and dying salt is big, and they are an important method for salt deep processing and product increment and they supply high quality products for end user. Therefore, the industry should enhance the contact with customers and consult overseas practice, developing special water treatment salt and printing and dying salt and establishing related product standard. On the

other hand, the small industrial salt market should be opened actively in order to form sound and competitive environment will be formed gradually.

6.8 Production of high purity salt by metal sodium in high additional value

Since the industrial method of making sodium chloride by electrolyzing in 1921, the output of it obviously increases with the important application of metal sodium with modern technology. At present, most of the industrial production of metal sodium in the world adopted the method of electrolyzing; only a few enterprises still use the method of electrolyzing sodium hydroxide. At present, there are mainly several enterprises for producing metal sodium at home, and the scale will be 70,000 tons till the end of 2005. The experts expect that the demand of the metal sodium of the whole year in 2005 is 67,000 tons and the expected output of metal sodium in 2005 is 52,000 tons, therefore the output is short for demand, the supply of the products is inadequate to meet the demand. The demand for metal sodium is 76,000 tons in 2006, the domestic expected output is 74,000 tons, and the production is inadequate to meet the demand.

It needs to consume 2.8 tons of salt for producing a ton of metal sodium by the electrolyzing method, and it needs to consume 196,000 tons of high purity refined salt for producing 70,000 tons of metal sodium annually. With the increasing market demand of metal sodium, the price increases accordingly (price is 21,000 to 22,000 yuan now), the benefit is quite good, and some investment enterprises may increase the devotion in this aspect, therefore the consumption of salt for producing metal sodium will increase gradually, which will also drive the multiple development of salt industry market.