

CHINESE SALT INDUSTRY STANDARDIZATION

PRESENT SITUATION AND PROGRAM

Zhida LIU

Salt Research Institute China National Salt Industry Corporation

INTRODUCTION

The salt is not only the essential item of people living but also the indispensable base stock of national economy. The establishment of salt and salty product standard began in the 1950s. In the 60s, the product standard, such as "Sea salt", "Well salt", "Lake salt", "Rock salt" and so on, was enacted. According to the needs of business development, by the national authorization, the national sea lake salt and the well salt standardization center has been established, the salt industry standardization work has been clear about the division of labor and the program in 1982. As a result the work of salt industry standardization is developed rapidly. The first national standard in salt industry GB5461 "Edible salt" was examined and approved adopted in 1984. The exterior appearance of edible salt, the chemical composition, trace element's quality requirement was included in the standard, which guaranteed edible health and security. This is the milestone of Chinese salt product quality target. Since the 1980s, along with the developments of salt industry and the new products, some standards have been enacted, such as standard of various kinds of salt and the salt product from

chemical industry, standard of general testing methods, standard of sampling method, standard of terminology and standard of salt industry management.

The Chinese Salt Industry Corporation takes seriously extremely to salt industry standardization work. They publicized and carried out the issued standard with explanation and training, in order to enable the enterprise, department and personnel to understand the standard quickly. The implementation of standard promoted the product quality to be enhanced and the management system to be standard.

By the State Administration of the People's Republic of China for Standardization authorized in March 2008, the State Technology Committee of Salt Industry for Standardization was established. It plays an important role in improving the salt industry standardization level, perfecting the salt industry standardization system, expanding the salt industry standardization domain and participating in international standardization activities.

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STANDARDIZATION		PRESENT

SITUATION

Implement standard at present

Under the leading of Chinese salt industry Management, according to the standardized center arrangement, the standard which was enacted and carried out mainly includes as follows (limited to GB code , China standardization):

Technical standard 41 items, thereinto: basic standard 2 items (GB code)《Sampling methods of the main products in the salt industry 》, 《 Terminology of salt-making industry 》; product standard 25 items (GB code 3 items, China standardization 22 items) GB5461《Edible salt》, GB/T5462《Industrial salt》, QB2019《Low sodium salt》, QB2020《Flavored salt》, QB2238《Nutrition fortified salt》,etc.

test method standard 14 items (GB code)

Management standard 6 items (GB code 2 item-s, China standardization 4 items) GB/T18770《Management quality rating and technology requirement for edible salt wholesale enterprises》;

GB/T19828 《 Management quality and technology standard for edible salt fixed-point production enterprises》;

QB/T2766 《 Construction and management technology standard for edible salt dispatching centre 》;

QB/T2765《Physical distribution information system skeleton standard for salt industry enterprise》;

QB/T2828《Symbol production management standard for iodized salt》;

QB/T2827《Symbol technology condition for iodized salt》.

Material standard (GB code)

GSB37001《Standard sample for edible salt》;

GSB37002《Standard sample for industrial salt》;

GSB11-121 《 Standard sample for iodized salt》.

Labor safety technical schedule 4 items (China standardization)

Engineering design standard 1 items (China standardization)

26 items of standard is under formulating (GB code and China standardization), includes environmental standard, method standard and product standard.

Standard implementation effects

Under the formulation of the standards, suggestions were widely taken advice, the salt industry was geared to actual circumstances, the standards were proclaimed on time and the implementation was efficiently carried out, so the standards obtained good results.

(1) GB code for edible salt has promoted edible salt quality.

《Edible salt》is the main standard in salt industry, and it is the first time to classify salt by use, which instead the originally established classification standard as manufacturing location and resources. The standing operating procedure of《Edible salt》 provide the sense organ request, the technical specification, the testing method and the decision rule. As a result, inferior quality ordinary salt and the varieties salt with high moisture content have been eliminated gradually; white degree, particle size and request of chemical index have been improved; iodine content is regulated reasonable; fine quality of edible salt such as particle uniform and pure white has been guaranteed. Compare with the international standard and overseas advanced standard of similar products, the standard of 《Edible salt》has the advanced level. It won the honor of "Science and Technology Advancement Prize" of related department many times. The standard of 《Edible salt》is the basis for the surveillance spot-checks and qualification of edible salt product by country.

(2) Method of sampling standard promotes iodized salt standards and uniform.

As the primary standard, 《Method of sampling of salt-making industry main product》stipulated the sample request, sample

quantity and disposal procedure of main salty products. The method established base on mathematical statistic, which is scientifically, simple and specification. So it has the characteristic of representativeness and practicability. Thinking over the risk of producer and consumer, the sample and qualification of iodine content in iodized salt adopted single sampling scheme of defective works rate measurement and standard implementation, combining with national unified array of adding iodine to edible salt. Consequently qualified rate and the uniformity of iodine content in iodized salt has been enhanced greatly.

The sampling inspection of the iodine content in iodized salt changed from taking 25 spots to 9 points meanwhile from counting to measure. The advantages of the change are workload is reduced, information content is increased and qualified rate of iodine content is enhanced, all of which favor the production enterprise to control iodine level.

Iodine content uniformity in edible salt related to the balance of crowd who takes in iodine favors eliminating IDD. Before the standard implementation, nearly 5000 iodized salt data from almost 20 provinces is listed as follows:

(the smaller the σ value is, the higher the uniformity is)

σ value:	<5	5-8	8-10	10-15	>15
occupies proportion %:	64.7;	22.6;	3.1;	7.2;	2.4

According to incomplete statistics presently, σ value of about 90% domestic iodized salt smaller than 5 indicate that the uniformity is improved.

For example: Tianjin spot-checks 473 times in 2006, the result shows that range of iodine content is from 28 mg/kg to 36 mg/kg, mean value is 32.1 mg/kg, σ value is 3.41. In 2007 Tianjin spot-checks 548 times, result shows that range of iodine content is from 30 mg/kg to 35 mg/kg, mean value is 33.2 mg/kg, σ value is 3.75.

The standard iodine's sample and the decision scheme in《Method of sampling of salt-making industry main product》is brought into “National Surveillance Program on Iodinated Salt” and carried out both in national salt industry and health department. It makes the contribution for China to eliminate IDD.

(3) Product standard strengthens salt industry detection level

Product standard in 《Edible salt》, 《Industrial salt》and 《Iodized salt》is widely applied in the national salt industry detection system, and obtained good results in evaluation and examination of 1165 domestic salt industrial laboratories and personnel skill in 2004 and 2006. It reflected the category, level and existence problems of different level laboratories. The standard sample inspected professional qualities of nearly thousand people.

Product standard in《Iodized salt》uses in comparing to iodine determination method confirmed the uniformity between direct process and oxidation process.

(4)《Industrial salt》standard favors energy saving and consumption reduction

After revised in 2003,《Industrial salt》standard takes the industry salt as raw material department's qualitative index refined the classification, improved the target, and controlled calcium, magnesium and sulfate radical ion separately. The standard tallied with the salty department demand and also promoted enterprises energy-saving and emission-reducing.

(5) Management standard specifies the production and sale of edible salt

《Management quality class division and technical requirements of edible salty wholesale business》(simply called 3A standard) and 《Technology standard of quality control of edible salt fixed-point production enterprise》(simply called fixed-point enterprise standard) are the two main manage standards in salt industry. In 3A

standard, the content is refined, request is clear and specific. After examination and receiving inspection of national edible salt sale enterprises, 1A, 2A, the 3A enterprise are awarded to those enterprises separately. Consequently, salt industry sales management level and environmental condition are improved and enhanced; the grade of service is changed beyond recognition.

Standard of fixed-point enterprise has a clear direction as the quality control request is consistent with ISO9000. The standard also lies down proper qualifications and essential conditions for edible salt manufacturer, among of it the key point is safe production and control of defective products. The aim of standard implementation is to change partial businesses whose management level is not high enough, technical equip is backward and professional quality is at low condition. Through appraisal and inspection of edible salt fixedpoint manufacture in 2005, enterprise management level and product quality has been improved which is according with the national general program for edible salt production. Some industries with low yield, poor quality and high cost are amalgamated, changed to produce different kind of product or even died out. These rearrangements in edible salt manufactures cut down the number of enterprises from 118 to 97.

The implementation of standard is insufficient

The salt industry standardization work has not been taken seriously by most people. Some managers and examiners have low consciousness on the standard. They are not clear with the related standard content and the information, even carries out the expired standard. Some enterprises formulate the standard without paying great attention to realistic, so they often conflicts with GB code.

Chinese salt industry standardization program

Target

Raise the standardized level and expand the standardized domain is to reach the international standard, play the standard in national economy and social development and obtain the best order and social efficiency.

Construct national salt industry standard system

As the continuously development of salt Industry such as management is strengthening gradually, product is increasing rapidly and detection technology in enhancement, a standard system according with international is need to construct, which describes blueprint of Chinese salt industry standardization development. The instruction of standard's system gives the direction of revise and perfection as well as perfects existing standard system to achieve systematization, standardization and scientific. Also proper information for picking the samples is available.

Criterion and straightening out existing standard

Chinese salt industry standards have been formulated and the standard which is under formulating are approximately 60 items, the implementations are approximately 50 items. All of them play an important role in national salt industry and other industries. But in execution of standard, there are still some uncoordinated problems which needs to be managed and coordinated by administrative department in order to achieve the standard reasonably, unified and suitable.

Unify the index of edible salt to ensure GB5461 is consistent with GB2721. Some food nutrition additives applied in salt industry have to be consistent with GB14880 standard. For example the food additive used in low sodium salt and strengthened nutrient salt.

Straighten out the relationship between present GB code, China standardization and

business standard in salt industry to form the unified management mechanism. Meanwhile the contradict conditions between business standard and GB code can be avoided.

Through validation, efforts are made to ensure individual inspection method is consistent with the inspection methods in health system and chemical system. Such as the measurement of copper, lead and arsenic in food, the testing of white degree in anhydrous sodium sulfate.

Formulation the environmental protection standard as soon as possible

The environmental pollution is attracting more and more attentions nowadays, so solutions should be carried out. For example, speed up the formulation of environmental protection standard for salt industry, control the influence of the ecology of surrounding by salt industry production, work out rules and regulations, specify harmless production in salty and salty chemical industry enterprises and make rules and emission standard for waste gas, waste water and noise discharged from salt manufactures.

Establish and perfect standard for new variety salt

Along with the salt industry development, technology development and marketing demand many new kinds of salty product is appearing. For example: special salt for ionic membrane caustic soda, washing salt for fruits and vegetables, amino acid (taurine, folic acid) nutrient salt, special salt for diabetic patient, spirulina salt and so on. Among them a lot kinds of salts has already obtained the success by the process of scientific research and healing efficacy examination. It has an positive significance on improving life and promoting health care. But it does not popularize and apply yet. Integrate the plan and establish the standards are needed.

Expand and strengthen management

standards

The management standard is one of the standard system, which includes some standards and regulations. The specified and implemented standard in salt industry obtains quite good effects. From now on, the first thing to do is popularize and carry out the existing standard (for example safety work, physical distribution). Secondly, perfect those key management standards (for example fixed-point enterprise standard, 3A standard). Thirdly, supplement training standard for operational types of work in salt industry (for example technical training for salt industrial testing members). The exclusive function of edible salt business is maintained by classifying the standard and composing series which favors supplement, revision and exertion of the management standard.

Promote technical level of testing methods

Firstly, salt industry testing methods research or confirm new testing methods. after that, the new testing methods can be included in the standard series. New standard for product examination is established at the same time, such as the standard of copper, cadmium, mercury, trace amount iodine testing methods and so on. Those standards are consistent with international standard or overseas advanced standard.

Secondly, promote technique content of testing method. The testing method standard has already been implemented for more than ten years at present, so advanced instrumental analysis method need to be timely supplied, like atomic absorption spectrophotometry, fluorimetry, polarographic method and simply fast method. Multi-methods develop simultaneously benefit the promotion, convenient for selection and improve the testing level. In order to satisfy domestic and international communication request, "testing the uncertainty uncertainty value" has to be included in testing method.

Strengthen standardization of information advisory service

Establish the domestic salt industry standardization network, which contains standard examination, publicity and implementation, training and discussing dynamic database, provides the advisory service for the salt industry.

Understand overseas salt industry standardization information, especially the advanced standard of the range of acquisition, translation, book arrangement and regular revision. The understanding will promote the adoption of standards degree and raise the rate of adoption of standards. Base on Chinese salt industry product, salt industry management mechanism and testing method, try best to establish the international standard.