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### **Key Points of ISO/ FDIS 14001:2015**

#### **— New Requirements and Smooth Shift to Revised Standard —**

Tadao Iguchi

Japan Environmental Management Association for Industry

It is announced that ISO14001:2015 will be published on 16th, September, 2015.

In this paper I will explain the difference between ISO14001:2015 and ISO14001:2004.

Key points are "How to determine environmental aspects regarding organization's business risks and the needs and expectations of interested parties and "How to perform top management's readership. As existing Environmental Management System manual will be able to use at revised version (ISO14001:2015), the transfer to new Environmental Management System will be done with small burden than expected before.

### **The Wastewater Treatment Systems and Chemicals for the Reduction of the COD/BOD of the Papermaking Wastewater**

#### **—The“Bio-Attach”,“COD Cutter”that Degrades and Treats COD BOD —**

Kenta Furusho

NIPPON STEEL & SUMIKIN Eco-Tech Corporation

The normal activated sludge method is widely used a wastewater treatment technology capable of advanced treatment at a low cost. However, the activated sludge method, by influent overload, water temperature fluctuations, and an insufficient air supply,would be lead to such problems as a sludge bulking and the water quality deteriorations. The amount of wastewater of the paper mills is quite large and the content of SS is also high. The "Bio-attack" system will solve problems mentioned above, because this system is a compact and a high-efficiency BOD processing system.

The “COD Cutter” is a bioactivating substance that was developed in order to improve the balance of microorganism groups in the aeration tank and prepare a proper environment for the mutual symbiosis of the complex microbial communities. Its effect is enhanced by maintaining

the diversity of complex microbial communities by supplying microorganism-activating substances.

This paper introduces a brief the “Bio-Attach”/“COD Cutter”, its usage, and usage examples.

## **Overview of Deodorizing Equipment and Deodorizer Technology**

### **—Odor Control Will Be Settled in the Best Mix of Various Techniques—**

Ken Nakatsuyama

Odor prevention Advisor, Japan Association on Odor Environment

Odor control technology is a very difficult technique unlike a prevention of various operation and air pollution technology in the chemical industry. This is because it must process a very low-concentrated blend shown by laws of Weber-Fechner to a sense of smell level (the sense of smell threshold). These techniques were developed based on an existing technique about prevention of chemical industry and air pollution basically.

Offensive Odor Control Law constructed in 1972 (S47) became The driving force that a many Odor control technology was developed. However, all had good and bad points, and the performance that I expected was not often provided. Solution to bad smell pollution includes various approach, but it is the next pivot to be important.

- 1) Technique to control the radiation of the bad smell in the process (implant).
- 2) Investigation into ingredient causing the bad smell.
- 3) The choice and the binational of appropriate deodorization and deodorization device.
- 4) Investigation of construction maintenance cost and the environmental load.

The good Odor control technology will be provided from these technical Best mix.

## **Ozone Deodorization**

### **— Fight Against Odour, Wastewater —**

Mitsuharu Nakajima

Nagano Bio Co., Ltd.

Odour issues often are present and prevail within Old and New Establishment, despite most of them installed with various Waste Water Odour management products and equipment ... However, Ozone Technology from Nagano Bio has been proven to be most effective against Odour control which there are over 600 successful installations to date.

Applications where Ozone had been successful include Mushroom, Fish & Pig Farms, where Growth Rate along with Yield increased by 30% and Bacteria/Viruses eliminated. Key consideration for system adoption is Low Implementation Cost with Minimum Maintenance required.

Type of Ozone applications include:

Dry method with Ozone Gas - which is able to eliminate all airborne and surface bounded Bacteria/Viruses and able to reach all areas of the closed room or space applied. Wet method with Ozone Mist or Water - which is able to eliminate most of the common Bacteria-Viruses within 5 secs of contact.

Couple of key features and benefits of Ozone Solutions include:

- 1) It is available and generated on demand, therefore there is no need to keep any stocks and no worries about product expiry compared to Chemicals type options.
- 2) There is no secondary pollution generated and therefore no need of subsequent cleaning or removal of Ozone Air or Water, as it will revert back to Normal Air & Water after its main function.
- 3) It eliminates Bacteria and Virus with its strong Oxidation to break down the Cell Walls of the Bacteria and Viruses.

Included in the details are 2 installation references for Nagano Bio' s 30 years of experience which includes

- The proper process to first understand the issue,
- The scientific way to measure and show results,
- Setting the expectation,
- Post installations follow-up & Maintenance

Ozone has been proven to be the most effective reducing levels of BOD, COD, VOC, SS, normal hexane, sludge and resulting in decolorized waste water.

### **Promotion of Energy Conservation Activities in a Paperboard Mill**

Yuri Itou

Yashio Mill, Rengo Co., Ltd.

Following Rengo's environmental key word "Keihaku Tanshou", Rengo is engaged in manufacturing packaging products with more lighter, thinner and low CO2 emission qualities. While it starts with developing new containerboard products, making way to energy saving in manufacturing process and shipping, Rengo Yashio Mill has also been contributing to energy conservation by promoting development of new paperboard products, facility investment and grass root small group activities. The mill was awarded "Ministry of Economy Trade and

Industry Prize” by introducing its energy saving activities, which the details are described below.

## **Energy Saving Proposal on WW Process Utilizing Ultrasonic Monitoring & Coagulation Sensor**

— **Energy Saving & Environmental Load Reduction Using Devices** —

Hisao Ooshimizu

Wastewater Treatment Section, Chemicals Division, Kurita Water Industries Ltd.

Energy saving on WW process draws increasing attention more and more along with stable operation.

In this writing, I would like to introduce some energy saving cases with our original products, Ultrasonic monitoring & Coagulation sensor.

And I'd introduce our cartridge type H<sub>2</sub>S gas removal device which can make a contribution to stable operation and life extension of electrical equipment.

## **About Act on Rational Use and Proper Management of Fluorocarbons**

— **Thing that You Must Do as a Manager of the Apparatuses** —

Tsutomu Osawa

Japan Association of Refrigeration and Air-Conditioning Contractors

The refrigeration and air conditioning equipment is used now in every place and becomes indispensableness supporting a comfortable living.

Whereas, Fluorocarbon has been used as a refrigerant of the refrigeration and air conditioning equipment, fluorocarbon was pointed out influence on ozone depletion.

Therefore we pushed forward reduction along Montreal Protocol in all the countries of the world, and planned the switch to HCFC alternatives.

However, as for the HCFC alternatives, movement of the regulation reinforcement of the HCFC alternatives begins because there is influence to give global warming more than several thousand times from several hundred times of carbon dioxide (CO<sub>2</sub>).

In Japan, full-scale Fluorocarbons measures began because of the Fluorocarbons Recovery and Destruction Law was promulgated in June, 2001, and the law was revised in June 2006.

Because this law proved that there are many leaks of Fluorocarbon during the use of the

apparatus, large revision is performed in June, 2014 and changes the name the Act on Rational Use and Proper Management of Fluorocarbons is enforced from April, 2015.

This seminar's contents explain about "a standard of Re-filling" specified as an observance matter of the managers (owner) of the apparatuses by the process of conventional Fluorocarbon measures, and this time's newly amended point mainly on so-called "thing that you must do as a manager of the apparatuses".

### **Practice Point of Risk Communication**

Shiro Kobayashi  
Chemical Advisor

Under PRTR Law(Law concerning Pollutant Release and Transfer Register), targeted business operators are required to confirm the released/transferred amount of designated chemical substances, and report them to the government every year. Report data can be viewed by stakeholders such as local residents. Between the operators and stakeholders, the process of information exchange and mutual understanding of the published data is referred to as "Risk communication". In this presentation, a description will be given of the practice point to a smooth risk communication in the pulp and paper manufacturing industry.

### **The History of Technological Developments of the Paper Industry in Japan** **Part 3: The Growth of the Japanese Paper Industry**

Kiyooki Iida

In thirty years from the Meiji Restoration, the paper industry in Japan entered into its progressive era, benefiting from the efforts by pioneers and supported with a fair cultural level of mill workers. Paper machines of large size equipped with newest technologies were imported, instead of medium size ones at the beginning, in about ten year-delay from abroad. The new technologies were implanted on old paper machines. Several domestic machine builders also started their business, copying the imported ones at first. In 1916, they made more paper machines in number than the imported, though mostly cylinder machines, and the sum of their wire widths was larger than that of the imported. Ohshima Steel Works, among them, even supplied a newsprint machine of the largest size at that time. The active capacity expansion was to supply the demand increasing in printing and carton making. In other words, Japan itself was

rapidly expanding the economy.

Engineers most of whom were alumni of Tokyo Higher Technical School (a predecessor of Tokyo Institute of Technology) contributed to the expansion. They had chances to visit mills abroad while young and played important roles in introducing new technologies and also in mill operations.

Nishi, at his thirties, toured mills in the U.S. and Europe for 8 months in 1925, saw decline of France, stagnation in the U.K., recovery of Germany, growth in Sweden, wood shortage in the U.S. and newsprint production in Canada that was exported to the U.S.

He even said that it would be possible for Japan to compete to the U.S. and Canada economically by improving facility and technology.

## **Corporate Profile & Products Information (28)**

### **HYMO CORPORATION**

HYMO CORPORATION was established in 1961 and started as the production and sales company of the chemicals for waste water treatment. We developed the first Japanese synthetic polymer flocculent "HIMOLOC". Regarding the pulp and paper industry, the business started in 1966 by production and sales of the liquid type retention agent.

We have met various demands from customers in the field of waste water treatment, the sludge dewatering and the paper manufacturing with our functional polymer technology since the establishment of a business.

Particularly, our technology is appreciated worldwide regarding the original liquid type "Dispersion polymer". We provide our customers with the superior usage and know-how of our retention, drainage and fixing agents for the purpose of the improvement of the paper quality in the paper making process.

On the other hand, there are many relations with foreign companies. Recently, we entered into the non-exclusive distribution agreement of the paper chemicals with BASF and aim at new applications and the expansion of the market by the synergy effect with both chemicals.

In this article, we will introduce our corporate profile, our products, the technical trend and the recent development of paper chemicals.

—Peer Reviewed—

**Properties of Fibers Prepared from Oil Palm Empty Fruit Bunch for Use as Corrugating**

## **Medium and Fiberboard**

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Keiichi Nakamata

Technical and Development Division, Hokuetsu Kishu Paper Co., Ltd.

This research was aimed at improving the utilization of waste generated by the palm oil industry by identifying the conditions needed to make fibers suitable for products such as paperboard and fiberboard from the empty fruit bunch (EFB) of oil palm (*Elaeis guineensis*). For this, the chemical pretreatment conditions needed to mechanically produce a pulp for paperboard were studied, as well as the effects of varying these conditions on the fiber properties. The optimum conditions to achieve the highest paper strength were found to be a NaOH dosage of 2 %, pretreatment time of 2 h at 121 °C and refiner disk-clearance of 0.10 mm. This EFB pulp exhibited similar tensile and tear indices to a pulp prepared from an old corrugated fiberboard box, and on the basis of this, it was considered acceptable for use in corrugating medium. Subsequent fabrication of fiberboard and clarification of its resistance to fungal attack found that the mechanical properties of EFB fiberboard made from unrefined fibers are lower than Japanese Industrial Standards; however, its resistance to brown-rot and white-rot fungus is better than that of board made from sugi (*Cryptomeria japonica*).