

Network Marketing Path and Technical Safety Guarantee of Hazardous Articles in Chemical Enterprises under Internet + Environment

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Chemical dangerous goods such as CH_2N_2 , HClO_4 , CO , and CH are mostly toxic, inflammable and explosive, and they are likely to cause harm to the human body and the environment. Therefore, strict controls must be exercised in such areas as transportation, storage and trading. Taking the principle of TEGDN thermal decomposition reaction as an example, this paper outlines the hazards of chemical dangerous goods and the basic theory of e-commerce marketing, and then constructs a chemical dangerous goods e-commerce marketing system, and starts from the chemical dangerous goods storage, marketing and transportation, analyzes chemical industry dangerous goods e-commerce marketing key technologies and specific implementation path. The study found that in the process of marketing of chemical dangerous goods e-commerce, the storage conditions must be determined according to the scope of chemical dangerous goods storage technology requirements, key technologies should be used to manage the safety channels of chemical dangerous goods, and technical control of various transport links of chemical dangerous goods should be carried out.

1. Introduction

1.1 Literature review

In recent years, with the increasing emphasis on the transportation and trade of dangerous chemicals in the chemical industry, the domestic academic community has formed a certain amount of research literature in this regard. Lei Zhang and Yue Huang, based on MsS long-distance ultrasonic guided wave detection and long-term monitoring techniques, discussed the on-line corrosion status of dangerous goods pipelines in public pipelines of the chemical industry area (Zhang and Huang, 2010). Dongfen Ye and Qiaolong Ye and others used the Gaussian diffusion model as their core, combined with modern computer-assisted technologies such as chemical dangerous goods database and geographic information system GIS to quantify and calculate the short-term exposure tolerance and semi-lethal concentration range of chemical dangerous goods diffusion. Technical simulations of leakage accidents were conducted (Ye et al., 2012). Zhidong Yu and Xitang Zhou, aiming at the problems existing in the storage and management of hazardous chemicals, refer to advanced foreign experience and proposed a model for the storage safety management of hazardous chemicals in China (Li, 2018; Nie and Zhang, 2018; Zhang et al., 2018; Yu and Zhou, 2012). Limin Chen and Dongliang Wang, in order to promote the development of dangerous goods logistics in China's chemical industry and reduce the incidence of logistics accidents, based on Web Service technology, optimized the design of chemical dangerous goods logistics safety monitoring system, including goals, various subsystems and detailed design, etc. (Chen and Wang, 2015). Based on the Internet of Things technology (Nawal et al., 2017), Baowei Cao designed a remote monitoring system for chemical dangerous goods and conducted a demand test on its functions (Cao, 2017). However, at present, Chinese scholars have very little research on the marketing technology of dangerous chemicals in the chemical industry. Only Yanmei Deng, relying on the Tianjin Chemical Exchange Market, has conducted in-depth analysis of the key technologies of the chemical market informationization, including software architecture, network technology, and point login control and supply chain management and early warning (Deng, 2014). For this reason, on the basis of predecessors'

researches, this paper specifically discusses the key technologies for the electronic marketing of dangerous goods in the chemical industry and its specific implementation path.

1.2 Research purposes

Because chemical dangerous goods are corrosive, toxic and flammable, etc., in order to ensure trade safety, the trading process of chemical dangerous goods must be jointly controlled by the State Administration of Work Safety, the Public Security Bureau and the Traffic Management Bureau (Cheng, 2016). In this context, in order to further adapt to the needs of market development, the chemical dangerous goods trading market gradually shifted from a single transaction model to an online and offline combined e-commerce transaction model. The realization of the marketing of chemical dangerous goods e-commerce must have special requirements, as well as safe, efficient and advanced key technologies (Ismail et al., 2018; Zhang and Zhang, 2017). The use of key technologies in the management, transportation, and sales of dangerous chemicals e-commerce marketing will help improve the safety of chemical dangerous goods transactions, create a safe trading environment, create a safe chemical dangerous goods e-commerce management chain and modern logistics chain, and promote the development of chemical dangerous goods e-commerce trade. At this stage, however, e-commerce marketing of domestic chemical dangerous goods is still in the primary development stage, the management, transportation, and sales of chemical dangerous goods are still unsound, and safety incidents are frequent and dangerous (Jiang and Wang, 2018). Based on this, this article outlines the basic theory of chemical dangerous goods and its e-commerce marketing, puts forward the specific implementation path of key technologies, in order to supplement the existing literature in related fields, promote the healthy and sustainable development of chemical dangerous goods e-commerce marketing.

2. Relevant theoretical analysis

2.1 Theoretical overview of chemical dangerous goods

Chemical dangerous goods belong to a kind of toxic, inflammable, combustion-supporting, corrosion and other characteristics of chemicals. Under certain conditions, it can produce chemical reaction and produce bad gas, which has many adverse effects on human body and the environment. At present, the inflammability of chemical dangerous goods is increasing, and the danger to the environment and people is also increasing (Zhou et al., 2018). Taking TEGDN as an example, the thermal decomposition mechanism of this dangerous chemical product is analyzed, as shown in Figure 1:

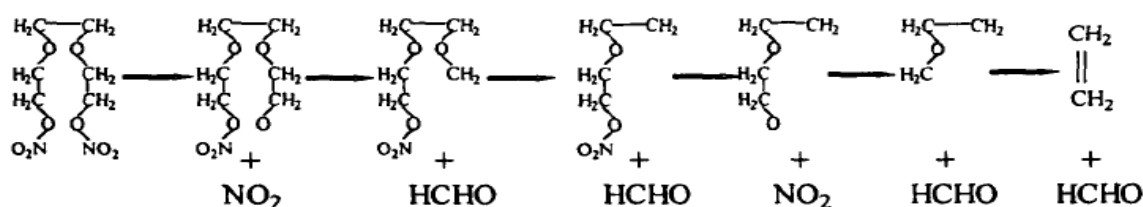
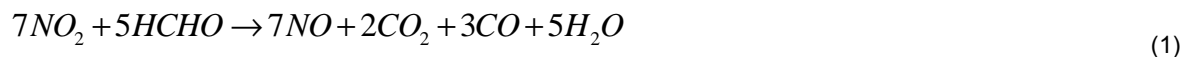


Figure 1: TEGDN thermal decomposition reaction

As can be seen from Figure 1, under the condition of heat, TEGDN has more HCHO decomposition than that of NO_2 . Under normal experimental temperature conditions, NO_2 will produce a certain chemical reaction with HCHO. The chemical reaction formula is as follows:



According to the above reaction formula, the reaction will consume a large amount of NO_2 , and it will be harmful to the environment, and will continuously change with the change of the environment components. Therefore, it needs to be strictly monitored in the actual transportation or storage.

2.2 E-commerce marketing of chemical dangerous goods

Chemical dangerous goods e-commerce marketing belongs to a special professional market in China. In this market, it will be under the control of the Public Security Bureau, Safety Supervision Bureau, Traffic Control Bureau and related monitoring departments. Therefore, in the actual marketing process, there are special requirements for related links. And there are stricter restrictions on the technology of related links. In order to further match the market development, e-commerce marketing of chemical dangerous goods is a diversified

transaction mode. The e-commerce trading platform established requires special attention to the security and high efficiency of online transactions. Therefore, for e-commerce marketing of chemical dangerous goods, we need to adopt safe, advanced and convenient e-commerce technologies to complete actual marketing. And for the marketing process involves the product storage, transportation and procurement, etc., need to be strictly controlled.

3. Analysis of key technologies and implementation paths of chemical dangerous goods e-commerce marketing

3.1 Key technologies for the marketing of chemical dangerous goods e-commerce

There are many links involved in the marketing of chemical dangerous goods e-commerce, and the process is cumbersome. The main processes are as follows.

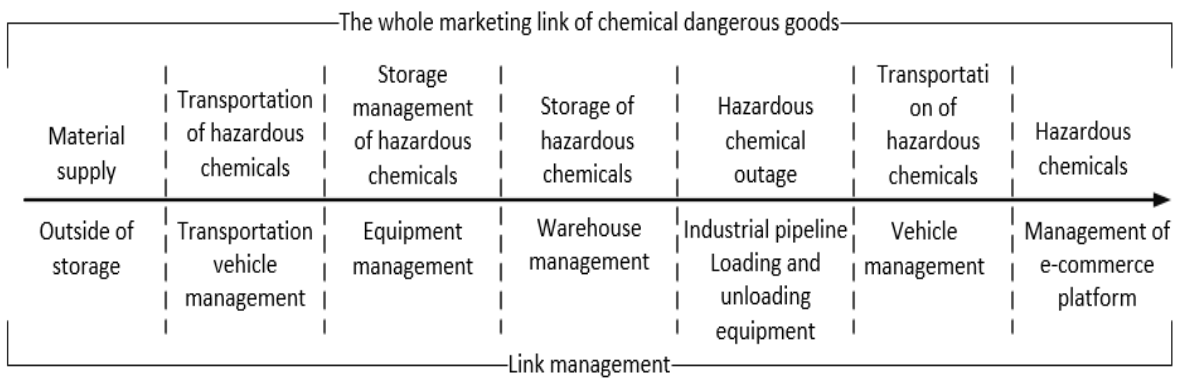


Figure 2: Chemical dangerous goods marketing

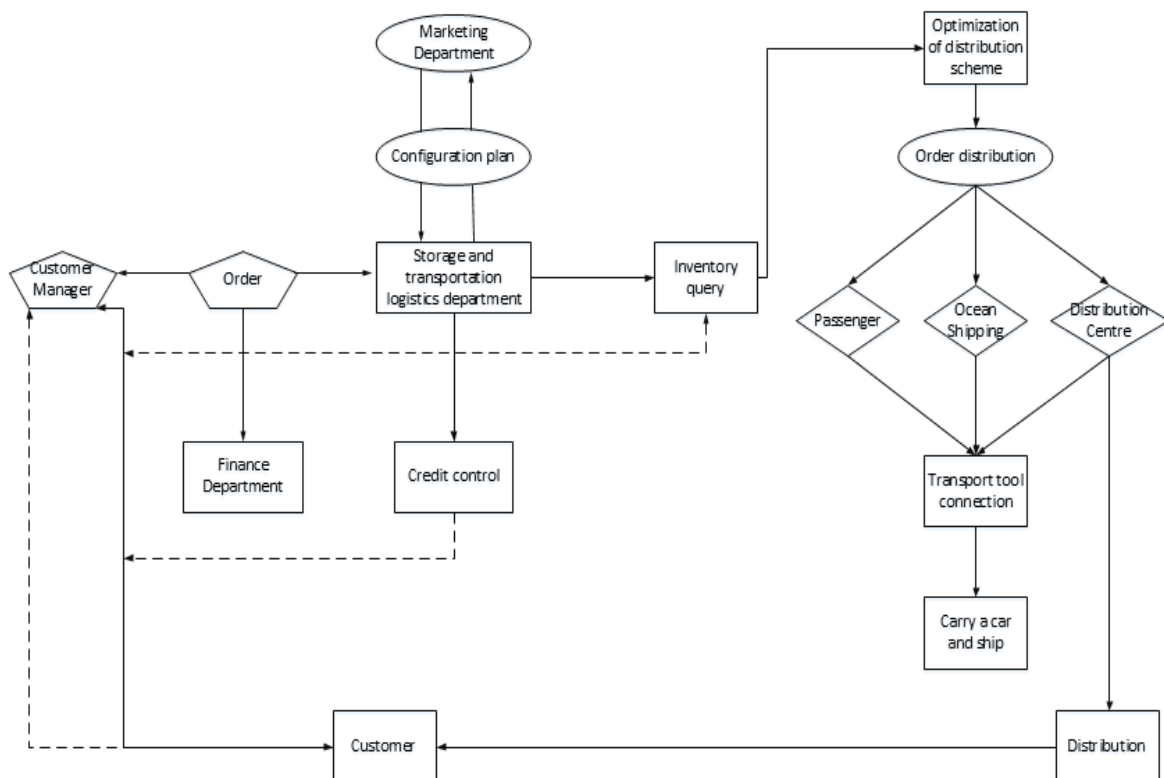


Figure 3: Chemical dangerous goods ecommerce marketing system

As can be seen from Figure 2, the marketing of chemical dangerous goods e-commerce mainly includes seven links, which mainly include the approval, transportation, warehouse, storage, delivery, transportation, sales and management stages of chemical dangerous goods projects. In the project approval stage, it is mainly necessary to examine and approve chemical dangerous goods according to national requirements and control the marketing safety of chemical dangerous goods from the source. In the transportation phase, the management of transportation vehicles is mainly aimed at the control of the environment, temperature, and humidity within the vehicle, and it is required to complete the transportation in the corresponding transportation lanes and pipelines. In the phase of storage of dangerous chemical products, the stage of storage of chemical dangerous goods mainly includes two types of equipment, which are filling equipment and handling equipment. In the chemical dangerous goods storage phase, chemical companies are mainly required to manage the warehouse and reasonably control the internal environment of the warehouse. In the stage of export of chemical dangerous goods, general chemical dangerous goods are released from the warehouse, and loading and unloading are mainly used. Therefore, strict control over the placement of chemical dangerous goods is required. In the phase of chemical dangerous goods transportation, the same reason needs to carry out vehicle management. In the stage of chemical dangerous goods sales and management, it mainly includes the management of e-commerce platforms, operators and marketers. In the marketing of chemical dangerous goods, different links have different operating technologies, and corresponding key technologies will be controlled. Based on the above-mentioned seven links in the marketing of chemical dangerous goods e-commerce, this article has constructed a chemical dangerous goods e-commerce marketing system. This system is mainly divided into three parts, which are the storage, marketing and transportation of chemical dangerous goods, and the specific operation and coordination of each part is shown in Figure 3.

3.2 Implementation paths of key technology for e-commerce marketing of chemical dangerous goods

Based on the chemical dangerous goods e-commerce marketing system, this paper starts with the three parts of storage, marketing and transportation of the main system, analyzes the key technologies of electronic dangerous goods e-commerce marketing, and proposes specific implementation methods based on different technologies. With regard to the marketing technology for dangerous chemicals in electricity suppliers, the determination of the storage technology of chemical dangerous goods in the storage chain depends mainly on the type, nature, fire-fighting requirements and storage methods of chemical dangerous goods storage containers. Generally, the following points are mainly needed for the storage of chemical dangerous goods. First, under high temperature conditions, chemical reactions are likely to occur, explosions occur, and chemical dangerous goods that emit gambling gas can't be stored in open-air buildings. Second, under the light conditions, chemical reactions that are prone to chemical reactions, explosions or the release of toxic gases should be stored in first-class buildings, and attention should be paid to the detection of light at all times. Thirdly, in the process of storing chemical dangerous goods, it should be noted that explosive products can't be stored with other medicines, and isolation must be performed in the middle. The town center must not be set for warehousing. The storage location should maintain a safe distance from the surrounding environment. In addition, compressed gas and liquefied gas must be stored separately from flammable substances, oxidants, and corrosive dangerous chemicals. Poisonous articles should be stored in a cool, dry place, not near acid-containing substances. In the actual storage process, chemical dangerous goods storage requirements are shown in Table 1.

As far as key technologies for the marketing of chemical dangerous goods are concerned, e-commerce marketing of chemical dangerous goods is mainly directed at the management of regional sales companies, distributors and agents. Its key technologies are mainly the management of various sales channels, and also responsible for the management and operation of sales operations. In actual control technology, chemical companies should continue to strengthen the information flow, capital flow, and logistics of e-commerce marketing and conduct real-time monitoring of related information. And it needs to deal with the feedback information of different channels in a timely manner. In terms of customer feedback, chemical companies need to process information in a timely manner based on customer feedback.

Due to the special nature of hazardous chemicals, chemical companies are required to make timely treatment if they are involved in large-scale complaints, in order to maintain the credibility of the electronic dangerous goods e-commerce business and ensure the effective implementation of the post-marketing process. As far as information provided by each sales channel is concerned, chemical companies should classify according to the provided information, and then process the information according to different categories, and if necessary, register the corresponding information. It needs special attention here that chemical companies, regardless of the management of sales channels, need to ensure the coordination of information flow, business flow, capital flow, and logistics of each sales channel, and do a good job of security protection throughout the marketing process to ensure the safety of personnel, products and the environment.

Table 1: Scope of storage requirements for chemical dangerous goods

Requirements	Storage conditions				
	Shielded storage	Isolated storage	Open storage	Storage on alternate days	
Storage per unit area (t/m ²)	0.7	0.8	1.1-1.6	0.8	
The distance between them and the contraindications (m)	Can't be stored together	8-12	12	Can't be stored together	
Single maximum storage (t)	240-360	420-500	2200-4000	400-600	
Wall Width (m)	0.4-0.6	0.4-0.7	3	0.3-0.5	
Channel width (m)	1-2	6	5-7	6	
Distance limit (m)	0.4-0.6	0.4-0.6	3	0.4-0.6	

As far as key technologies for the transport of dangerous chemicals in the chemical industry are concerned, during the transportation process of chemical dangerous goods, it is necessary to start technical control from the pre-transport preparation stage. First of all, before the transportation of chemical dangerous goods, chemical companies should notify the loading and unloading department to make preparations, understand the properties of the products to be transported, and do preventive measures in advance. Secondly, during the handling of chemical dangerous goods, the corresponding personnel are required to handle it gently to prevent collisions, vibrations, frictions and impacts between chemical dangerous goods. If the above phenomenon occurs, it is required that the corresponding products be destroyed in time and transportation can't be continued. Finally, uniform management of the loading and unloading personnel is required, and relevant personnel are required not to smoke or drink, and after the completion of the work, hands, faces, and other parts exposed to chemical dangerous goods are promptly cleaned. If the occurrence of nausea, dizziness and other phenomena, require timely medical treatment.

4. Conclusion

In summary, chemical dangerous goods are of great danger. Taking TEGDN as an example, the substance is prone to produce large amounts of NO₂ under heating conditions, causing many adverse effects on human and environmental safety. The chemical dangerous goods e-commerce marketing market, as a special professional market, analyzes key technologies in its marketing process to prevent chemical reactions such as oxidation, corrosion, and explosion of chemical dangerous goods under the change of environmental conditions, and further guarantee chemical industry dangerous goods electricity supplier marketing security. At this stage, the use of chemical dangerous goods such as C₁₀H₁₅N, As₂O₃ and (ClCH₂CH₂)₂S has been increasing. E-commerce marketing has gradually become the focus of relevant regulatory authorities. Therefore, the research of the chemical dangerous goods e-commerce marketing system and the application and implementation path of the key technologies of each component of the system have strong applicability. In the future, the key technical control of the electronic dangerous goods e-commerce marketing will be fully utilized, which can provide theoretical support for the trading of chemical dangerous goods.

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