

**A study submitted  
to  
The Industry and Energy Committee  
of the People's Assembly  
on  
Problems of  
Manufacturing, Filling, and Circulation of Gas Cylinders**

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**Introduction:**

The rate of accidents related to gas cylinders that result from either explosion or leakage of flammable oil gases has increased during the last few years. This issue affects the safety and security of citizens and leads to death and turns people into scapegoats for illegal practices... It also affects the reputation of this industry- therefore the People's Assembly is discussing, in its current session, many briefing requests were put forward by some of its members with the aim of eliminating that phenomenon, and regulating that industry once again to protect its reputation in general and to ensure the safety of citizens, in particular.

It is known that the annual consumption of gas for household and other purposes, according to the statistics of the Ministry of Petroleum represented by the Petroleum Gases Company, is 1.2 million tons of gas, circulated in the form of 155 million cylinders, with an average of 15-20 million cylinders, being filled every year.

## **The Gas Cylinder Life Cycle**

**The life cycle of a gas cylinder includes three stages:-**

- 1- The Pre-manufacture stage.**
- 2- The Manufacture stage.**
- 3- The Post-manufacture stage.**

### **First: The Pre-manufacture Stage:**

It is the stage preceding manufacture, including the design of the cylinder, displaying the operational drawings on it, determining the specifications of the materials used, and testing it to ensure the quality of the manufacturing process- in addition to revising the manufacturing documents, production lines, and the company's resources to determine the availability of material and human resources required to start production. All these procedures are the responsibility of the Egyptian General Standardization Authority, according to the Presidential Decree No. 392 for the year 1979, which end with the approval of the basic model of the product, and consequently giving permission to start the typical production process.

### **Second: The Manufacture Stage:**

Gas cylinders are produced locally in four local factories with an annual capacity of 3 million cylinders. Factory No.99 of the Ministry of Military Production is the oldest factory in this field of activity, since it started its production in 1957. According to its statistics, it produced more than 11 million gas cylinders circulating in the markets.

### **Manufacturing Specifications:**

The manufacture process of cylinders, which have a capacity of 30 liters and 60 liters and which are filled with the gas mixture of Propane and Butane, commercially known as "buta-gas", is subject to the Egyptian standard specifications No. 878 and 1784 for 1989. These are binding specifications required for production or circulation. The Egyptian General Standardization Authority is responsible for the inspection of production and issuing approvals that indicate the validity of the product. It has the right to inspect every batch of products before it circulates in the market. The client also has the right to inspect production, check and examine the materials and to view quality certificates related to the quality of materials and production inputs. Despite that, these specifications need to be revised and updated to incorporate more regulations, "because they were issued ten years ago". The several reports sent by Petrogas Co to manufacturing companies that there are some cylinders that become unfit for filling after only one or two years of manufacture and circulation in the market, is the best evidence.

### **Third: The Post-manufacture Stage:**

#### **1- Filling and distribution:**

Petrogas Co. of the Ministry of Petroleum is the main client for gas cylinder manufacturers under the Egyptian Standard specifications No. 647, 782 issued in 1965 and 1966. It is responsible for testing the production purchased from these factories. It fills the cylinders with gas and it supposedly tests the circulating cylinders every time they are filled, both before and after filling. Accordingly, manufacturing companies stopped contacting the Egyptian General Standardization Authority to examine the production batches and approve them before marketing. They suffice with

the inspection of Petrogas Co. representatives which applies that system, it being the contracting agent with the manufacturing factories. And the client has the right to inspect the commodities and products manufactured for them... This principle is true in general, but in the case of the gas cylinder, the citizen is the real consumer, not Petrogas Co. Thus, the Standardization Authority is the principal representative of the government which carries out inspection and ensures that they comply with the specifications. This is in addition to the fact that recently, Petrogas Co. has stopped signing new contracts with manufacturing companies as it used to do before, and has left the domain for the manufacturing companies to market its production. Indeed, we read, from time to time, advertisements in the newspapers in which some manufacturing companies request the help of marketing agencies to market their gas cylinders without any practical or supervisory role for Petrogas Co. regarding the quality of the cylinders.

## **2- Circulation**

The circulation of gas cylinders is a process that suffers from shortcomings like negligence, bad handling and lack of the necessary care required in dealing with the cylinder, given that it contains compressed flammable gas.

## **3- Storage:**

The area allocated for the storage of cylinders, the storage methods and safety measures are not suitable for the cylinder, being a compressed container that is, in fact, a time bomb.

#### **4- Expected lifetime:**

The Egyptian Standard specifications did not refer to the expected lifetime of gas cylinders; an issue closely related to the quality of the production process, the level of circulation during the distribution process, and the expected number of refills during the validity period... The Ministry of Petroleum did not determine the expected lifetime, but it only complained about the mishandling the of cylinders at the hands of the distributors and consumers.

#### **5- Insurance:**

It is assumed that the parties concerned with gas cylinders in general and the entity responsible for filling the gas cylinders, in particular, provide an insurance coverage on the cylinders to protect against risks resulting from using them and announce that to the public, so that the victims can claim their rights from the insurance companies.

#### **According to the above;**

...and given the continuous increase in the rate of accidents resulting from gas cylinders, a number of specifications emerge as obligatory to fulfill, in order to determine partial responsibility on different levels. This is in order to reach the corrective and preventive procedures required to stop the spread of this serious phenomenon.

- 1- Does the Egyptian General Standardization and Quality Control Authority inspect each batch of production placed on the market?

- 2- Does the Egyptian General Standardization Authority show validity using a metal label that carries its slogan to prove the validity period recorded on each cylinder?
- 3- What happens to those unfit cylinders within the production batch that don't comply with the specifications and which are inspected by the Standardization Authority? Do they dispose of those cylinders, or do they leak to the markets one way or another?
- 4- Does the client's right, the "Petroleum Gases Co." in this case, to inspect the production purchased cancel the role of the Egyptian General Standardization Authority to inspect all the products of gas cylinder manufacturers? Is it a complementary condition such that it is not permissible to purchase equipment that is not approved by the Standardization Authority in the first place?
- 5- What is the status of the cylinders rejected upon purchase for defects or for not complying with standard specifications? Are they disposed of? What is the entity responsible for carrying that out?
- 6- What is the official entity whose jurisdiction includes inspecting the circulating gas cylinders to identify the cylinders that expired and dispose of them along with the other unfit cylinders even if they had not expired?
- 7- It is known that the Petroleum Gases Co. is the actual owner of the circulating cylinders, and that these cylinders are a vital part of its capital... so is Petrogas Co. supposed to dispose of expired or defective cylinders that haven't yet expired, given that disposing of them would decrease the assets of the company and hence, its capital? This necessitates that we depend on an external agency for inspection of the cylinders, and supervision of the disposal of expired ones.

### **Insurance Status:**

Data regarding insurance coverage and the name of the company in charge of that coverage must be displayed on each cylinder, in order to protect the consumer's right and determine where civil responsibility lies.

### **Data displayed on the cylinder:**

Egyptian Standard Specifications **stipulate** that the following data be etched on each cylinder:

- Name of manufacturer and his trademark
- Serial number of cylinder
- Weight of empty cylinder with valve
- Date of manufacture
- Date of conducting hydraulic pressure test.

**This matter** requires adding the expiry date in a way that is clear, and cannot be erased or tampered with. It also requires adding a metal label issued by the Egyptian General Standardization Authority, stating that the cylinder has been approved as part of the production batch. It is not anymore acceptable that the consumer be unable to check **himself** the expiry date of a commodity that is that dangerous, for the law stipulates that the expiry date be displayed on other less important and less dangerous commodities, like chewing gum, chocolate, yoghurt and peanuts...etc.



### **Finally**

**According to the above**, there is no doubt that state sovereignty and its fundamental role in organizing industrial affairs, necessitates that it extends its censorship to prevent such negligence from spreading to threaten the safety of the citizen and his family and to save them from a serious danger that sneaks into their homes without prior warning.

**What's more**, the absence of such censorship could weaken the entire industrial process, in a time when it is in serious need of control in its perfect sense, in order to prepare to play its national role, and head towards exportation, achieving its ambitions first, and our national ambitions next.

### **Recommendations:**

1. Specifying the expected lifetime of the gas cylinders, given the conditions of usage and circulation prevalent in Egypt and adding this to the Egyptian Standard Specifications.
2. Canceling the exception that states that it suffices to have the buyer inspect the cylinder or have the factories exercise self-inspection of their products and reverting to the original system followed, whereby each batch is inspected by the Egyptian Standardization and Quality Control Authority as a precondition for circulation.
3. The Egyptian Standardization and Quality Control Authority should put an inerasable mark on the inspected cylinders that comply with the specifications as a precondition for circulation. This is to protect the consumer and enable him to exercise his rights before accepting the cylinder.

4. Recording the expiration date on each cylinder in an inerasable way.
5. Compelling the authority in charge of filling and distribution to record the insurance status on each cylinder as a precondition for circulation. This is to protect the consumer's rights and to prove the company's full compliance with its obligations as an insurance company.