

Determine the quantity and composition of solid wastes mobin petrochemical industry

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Abstract: The aim of this study was to identify and classify solid and liquid waste in mobin petrochemical industries to provide solutions to management. This research was conducted in the spring of 1395. First, following the evaluation of the production process to achieve the research objectives, qualitative and quantitative characteristics, causes the production of waste and how to manage their current units of mobin Petrochemical each, were studied and springs were identified waste production. Waste production and springs were identified. Then, based on resource utilization metrics Protection Act (RCRA) and the Joint United Nations programme criteria (UNEP) were classified. Waste materials generated from industrial activities in the petrochemical various properties and their values are different. The total volume of waste produced in different units of mobin Petrochemical 1452 tons and 560 kg. The results of this study showed, most waste was related to air separation unit with an approximate weight of 550 tons and the lowest production-related waste power plant unit with an approximate weight of 55,000 kg. Altogether, 33 substances classified by close to 80% of non-hazardous waste and 20% of waste dangerous. Finally, management practices and minimize the possibility of recycling any waste is dealt with.

Keywords: Psm-and- petrochemical processing mobin - taxonomy RCRA- UNEP-

INTRODUCTION

Industrial waste residuals is said to be caused by industrial activities and mining and refinery waste gas, oil, petrochemical, power generation is like debris, overflow and industrial sludge. Industrial wastes based on their risk characteristics are divided into different categories (development, 1999). of industrial waste and dangerous accidents in the world there are many principled and correct management of waste in the production process is essential for the petrochemical industry. et al., 2015). Mobin Petrochemical Company is composed of utility and power supply units, nitrogen and oxygen, steam, fresh water, demineralized water and cooling water, sewage disposal equipment, industrial complexes and petrochemical projects located in Pars Special Economic Energy Zone is responsible.

The nature of petrochemical processes such that large quantities of environmental pollutants including waste generated that lack of management principles is the numerous environmental hazards. Waste per unit of production of special specifications and petrochemical industries and the service is also not an exception. Many varied activities at the centers to the production of waste is done. This waste contains both normal and special waste is causing acute problems of short-term and long-term chronic problems for public health and the environment also drawn pollution (Ferdowsi and Saduq, 1372). According to the petrochemical industry in the country is growing increasingly inquire into the case and petrochemical plants are the largest sources of hazardous waste and the problems caused by industrial waste and dangerous since the 1980s is taken into consideration, as well as a history of accidents with industrial waste and dangerous in the world many there are management principles and correct the production process industrial waste petrochemical industries. It is essential. by recognizing the source of waste generation, production value and classification of waste as well as grouping the material that country and global levels is, can be principled and correct management of the production process to obtain a special waste petrochemical industries (Ahmadi et al., 2015). mobin Petrochemical Company is composed of utility and power supply units, nitrogen and oxygen, steam, fresh water, demineralized water and cooling water, sewage disposal equipment, industrial complexes and petrochemical projects located in Pars Special Economic Energy Zone is responsible.

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MATERIALS AND METHODS

The study, part of a research work involves data collection that will be an important step, Studies library using the library, review papers and thesis student and searching online databases in this area. To carry out fieldwork, with views that were expressed in different units, use the comments staffs was necessary. For this purpose, during the visit of the technical information, explanations and experiences of experts and farmers process units were used. To evaluate waste mobin Petrochemical Company, to determine the type of consumables and products As well as the production and management of industrial waste, as an effective method of survey questionnaire was used to collect data. The design of the questionnaire for this study was based on previous studies and questionnaires used in this area. Questionnaire, in 4 screen and includes questions on the following sectors:

- (1) General Information
- (2) Raw materials
- (3) Products
- (4) the status of waste
- (5) maintenance practices, frequency of transportation of industrial wastes
- (6) the manner of waste disposal
- (7) other information related to industrial units

UNEP and data classification method based on two criteria RCRA: In this study, UNEP and RCRA standards on data classification and information was obtained and the data of hazardous and non-hazardous were classified on the basis of the two approaches. This means that any of the products identified in mobin petrochemical waste time with six groups were compared in the classification UNEP And again with four main list with a complete list of products included in the classification were compared RCRA and if those substances classified in any of the groups classified waste UNEP or any of the lists of waste classification was rkra, Its waste material was considered a Dangerous waste material And in the absence of waste in any of the groups there UNEP and lists rkra its waste material as a non-hazardous waste were raised. The waste is detected in the study subjects, category and were classified and characterized based on two criteria were approved.

RESULTS

The results in Tables (1) to (6) provided:

Table 1 source of waste production per unit of water (DM)

Current management	Type of waste	The nature of the waste material	Springs production	Name of waste
Total sales Vry-	Non-hazardous	Solid	At the unit level	Empty plastic barrels
Total sales Vry-	Dangerous	Solid	Active carbon filter	Spent activated carbon
Total waste Vry-	Dangerous	Solid	Filter anionic and cationic	Broken resin anion and cation
Total sales Vry-	Non-hazardous	Solid	At the unit level	wooden palette
Total sales Vry-	Dangerous	Solid	Slyych (Depo-off)	Metal barrels oil
Total waste Vry-	Non-hazardous	Solid	Workshop - Slyych	Sacks of chemicals

Table 2 springs Waste production in industrial wastewater treatment unit.

Current management	Type of waste	The nature of the waste material	Springs production	Name of waste
Total sales Vry-	Dangerous	Solid	At the unit level	Empty barrels of oil
Total sales Vry-	Non-hazardous	Solid	At the unit level	Metals and fittings
Total Vry- burning in the furnace Jamdsvz	Dangerous	Fluid	Belt Filter	Chemical sludge
Total Vry- burning in the furnace Jamdsvz	Dangerous	Fluid	Rotary	Biological sludge
Total sales Vry- Burial	Dangerous	Solid	Carbon filter tank	Spent activated carbon
	Non-hazardous	Solid	Dual filter wastewater treatment	Silica sand
Total sales Vry-	Dangerous	Solid	Aerated ponds as feed	Phosphoric acid barrels
Total Vry- burning in the furnace Jamdsvz	Dangerous	Fluid	Wastewater treatment ponds	Dredging sludge wastewater treatment ponds
Cement manufacturing process	Non-hazardous	Solid	Solid-fuel furnaces	Ash

Table 3. Waste production in the spring air separation unit

Current management	Type of waste	The nature of the waste material	Springs production	Name of waste
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Total sales Vry-	Non-hazardous	Solid	At the unit level	Wooden pallets
Total sales Vry-	Non-hazardous	Solid	At the unit level	Empty plastic barrels
Burial	Non-hazardous	Solid	cooling tower	Perlite
Burial	Non-hazardous	Solid	Tower Tower alumina	Alumina
Burial	Dangerous	Solid	Tower molecule Rvsyv	Mvlkvlarsyv
Total sales Vry-	Non-hazardous	Solid	Compressor inlet	air filter
Total sales Vry-	Non-hazardous	Solid	Rotating equipment (compressor)	oil filter
Re-use as a disposable container	Dangerous	Solid	At the unit level	Metal barrels oil
Total sales Vry-	Non-hazardous	Solid	Air filter boxes	Carton
Total sales Vry-	Dangerous	Solid	Compressor	Sorbents
Total sales Vry-	Non-hazardous	Solid	Compressor	Filters netting

Table 4. Waste production per unit springs communication lines

Current management	Type of waste	The nature of the waste material	Springs production	Name of waste
Total sales Vry-	Dangerous	Solid	Diesel pump	Battery
Total sales Vry-	Non-hazardous	Solid	Lines of communication	oil filter
Total sales Vry-	Non-hazardous	Solid	Lines of communication	Empty barrels of oil
Collecting	Non-hazardous	Solid	Lines of communication	Oil filter
Total sales Vry-	Non-hazardous	Solid	Lines of communication	air filter
Total sales Vry-	Non-hazardous	Solid	At the unit level	Fittings and pipes

Table 5. Waste production per unit springs pond

Current management	Type of waste	The nature of the waste material	Springs production	Name of waste
Total sales Vry-	Non-hazardous	Solid	In total equipment unit	Empty plastic barrels
Total sales Vry-	Non-hazardous	Solid	In the Complex.	Metal empty barrel oil
Total sales Vry-	Non-hazardous	Solid	At the unit level	wooden palette
Total sales Vry-	Non-hazardous	Solid	At the unit level	GRP pipes
Total sales Vry-	Non-hazardous	Solid	At the unit level	Pipes and fittings
Total waste Vry-	Dangerous	Fluid	At the unit level	acid

Table 6: Fountains of waste production per plant

Current management	Type of waste	The nature of the waste material	Springs production	Name of waste
Total sales Vry-	Non-hazardous	Solid	Turbine inlet	Air Compressors
Total sales Vry-	Non-hazardous	Solid	Compressor	Hydraulic oil filter
Total sales Vry-	Non-hazardous	Solid	CAF D input technology	Filter Felt
Total sales Vry-	Non-hazardous	Solid	Air filter boxes	Carton
Reuse as second-hand containers	Non-hazardous	Solid	The compressor and turbine unit	Empty barrels of oil
Total sales Vry-	Non-hazardous	Solid	At the unit level Slvych	Empty barrels of chemicals
Total sales Vry-	Non-hazardous	Solid	Slvych	wooden palette
Total waste Vry-	Dangerous	Solid	At the unit level	Sacks phosphate
Current management	Dangerous	Fluid	Turbine combustion chamber	Gasoline
Total sales Vry-	Dangerous	Solid	Diesels	Batteries

According to Table (1), 100% of solid waste their nature. Also 55% of the waste, non-hazardous type and 45% is a dangerous one.

According to Table (2), 65% of solid waste is nature. And 76% of the waste, a dangerous and non-dangerous type is 24%.

According to Table (3), 100% of solid waste is nature. Also 69% of the waste, and 31% of non-dangerous type of hazard.

According to Table (4), 100% of solid waste is nature. Also 85% of the waste, and 15% of non-dangerous type of hazard. Figure (4-10) shows the percentage of each waste.

According to Table (5), 83% of solid waste is nature. As well as 79% of the waste, and 21% of non-dangerous type is dangerous.

According to Table (6), 79% of solid waste is nature. Also 56% of the waste, and 44% of non-dangerous type is dangerous.

According to the survey carried out in the study subjects were a total of 33 substances classified The proposed method by comparing with the United Nations Environment Programme (UNEP), 12 of the hazardous waste and non-hazardous waste is 21. Also, compared with the method (RCRA) hazardous waste from the number 16 and 17 is non-hazardous waste.

Suggested solutions to minimize waste	Of waste	Row
Recycling and reuse	Empty plastic barrels	1
Burning or burial at permitted sites (landfill)	Spent activated carbon	2
Buried in landfills	Broken resin anion and cation	3
Depot in Slvych, using galvanized and plastic pallets	wooden palette	4
Recycling and reuse	Metal barrels oil	5
Plastic trashes	Sacks of chemicals	6
Recycling and reuse	Empty barrels of oil	7
Recycling and reuse	Metals and fittings	8
Drying and burial in licensed facilities	Chemical sludge	9
Burning in the furnace Jamdsvz	Biological sludge	10
Drying and burial in licensed facilities	Silica sand	11
Burning in the furnace Jamdsvz	Phosphoric acid barrels	12
Buried in the municipal	Dredging sludge wastewater treatment ponds	13
Sales under controlled conditions for recycling	Ash	14
Drying and burial in licensed facilities	Perlite	15
Burning in the furnace Jamdsvz	Alumina	16
Recycle	Mvlkvlarsyv	17
Burning in incinerators	air filter	18
The time control function of the site.	oil filter	19
Burning in incinerators	Carton	20
Sales recycling and reuse	Sorbents	21
Burning in incinerators	Filters netting	22
Burning in incinerators	Oil filter	23
Burning in incinerators	Metal empty barrel oil	24
Recycling and reuse	GRP pipes	25
Sales Processing	Pipes and fittings	26
Sales Processing	acid	27
Keep in suitable sealed barrels	Air Compressors	28
Burning in incinerators	Hydraulic oil filter	29
Burning in incinerators	Filter Felt	30
Burning in incinerators	Empty barrels of chemicals	31
Sales under controlled conditions for recycling	Sacks phosphate	32
Plastic trashes	Gasoline	33
Tsfyh- kept in sealed barrels suitable	Batteries	34

DISCUSSION AND CONCLUSION

Implementation of waste management has always been one of the main concerns of management in industrial companies. Components necessary to implement a waste management system is the industry anticipate and be prepared (Abdoli, 1372). This is different from unit to unit, in other words, corporate culture and management systems in industrial units determine the method of implementation of the industrial waste management system. Identify and evaluate the quality and quantity of industrial waste, industrial waste management of the most fundamental parts count (Zmyray et al., 1391).

According to studies, it was found in the company's air separation units producing about 550 tons of maximum residual waste and power plant produces about 55,000 kg to produce the least waste.

In many industries, recycling has generally benefited the industry and economy, one of the most important incentives for industrial units, for operations reduce pollution. Reducing industrial waste production as the source of a change in the manufacturing process, the operation including process optimization, proper maintenance product, changes in product mix, changes in input materials, changes in technology or the waste stream separation. In general, reducing the volume and toxicity minimization of industrial waste materials. According to available data, more waste was collected and then sold for recycling.

In the table (7) for the proper management of waste minimization strategies mobin Petrochemical Company is presented. Including in the company's management practices to reduce waste, recycle and re-use them.

Management strategies and suggestions

1) collect and transport waste

Collection and transportation of solid waste is one of the most significant waste management operations. That is why the reform, optimizing and automating the collection and transportation of waste, while accelerating the operation, pursuant to spend Hznyh and time will be less. Activity collect residual waste production is a function of location. During the transportation of hazardous special waste to incinerators regulations must be observed.

2) formulating, monitoring and reviewing waste management guidelines Mobin Petrochemical Company, including:
A disposal, processing and recycling of waste consultant and approved by the Department of Environment

(B) adopt methods of production and consumption with the aim of creating less waste

(C) examine how executive management transfer of waste to natural and legal persons representing the applicant in the waste management company

3) Control Statistics type and volume of waste in the production, storage and transport stations

4) monitor the performance of environmental principles in all sectors and units active in waste management

5) Get detailed report performance on a monthly basis on the management of waste, sub-units

6) provide a detailed report on performance on a monthly basis on the management of waste in the following units of the HSE management

7) responsible for residual waste disposal bill slip in sub-units

8) monitoring and recording data and statistics on the structure of waste

9) Develop and monitor the implementation of educational programs in the field of waste management

10) plan how to collect waste based on the general list of the waste, provided that the HSE Unit and the authorization of the unit

11) providing the maintenance and storage of the waste and the authorization of the HSE Unit

12) compliance with all environmental issues on waste collection

13) provide monthly reports on the status of waste storage warehouses, including the amount of space has been filled and the volume of waste sent for each group

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