

# Ejinco International EJSC

**Company Introduction** 

For twenty years we have been working in the industry field. We have been through experiences, overcome obstacles, developed solutions and trained generations of engineers and technicians. We have also offered sincere advice for all those who consulted us, we have achieved massive accomplishments.

Now, it is about time to incorporate all the previous achievements in an integrated organization, in order to present the essence of our experience to everyone. Hence, we have established EJINCO, in collaboration with Chinese party, so as to bring the successful industrial Chinese experiment to Egypt, in addition to our great knowledge of the Egyptian Market.

Founded in 1985, our Chinese partner cooperated with ZhengZhou University of Light Industry in 2003, adopting domestic unique New thermal catalytic cracking technology to upgrade our products. In 2005, we cooperated with Dr. Han Li from Atlanta USA and improved our technology and quality to international advanced level. In 2009, our products especially on the environmental protection are leading the way in our same occupation after the cooperation with Dr. Zhang Shimin from Melbourne Australia. Now, we have achieved CE, SGS, ISO, BV, TUV certifications. The emission can meet GB13271—2001 related standards.

Nowadays, our company has owned 14 national patents and a provincial engineering research center, which is Henan engineering Technology Research Center of Comprehensive Utilization Equipment for Waste Rubber and Plastics. We are the members of China Association of Environmental Protection Industry, Henan Association of Environmental Protection Industry, Shangqiu Association of Environmental Protection Industry. And, we are also awarded as Shangqiu Advanced export enterprises and the 60 High-growth Companies in 2011, High Quality Management Unit, Advanced Technology Innovation Demonstration Enterprise, Henan Famous-brand Products as well as Energy- saving technology innovation demonstration enterprise in 2012.

Under the guidance of our enterprise spirit of Sincerity-oriented & Practice-based, Innovation-determined & Forge-ahead, through unremitting efforts, our company has developed XY-Series environmental protection equipment with the outstanding advantages of less-investment, high-efficiency, simple operation, environmental friendly and so on. Up to now, our products include Pyrolysis Plants for waste rubber, plastic and tires, normal or negative pressure Distillation plants for waste engine oil, pyrolysis fuel oil, crude oil and the Carbon Black Deep-process Machines. Due to the unique advantages, our machines are widely used in China and overseas, such as: Austria, Poland, Albania, Turkey, Republic of Korea, Thailand, India, Africa countries, etc.

Over the years, based on our service principle of "for the sake of customers, to reassure the customers and to develop with customers", each set of our equipment possesses the characteristic of "Green & Environmental-friendly, Technology innovative & Energy-saving, Security & Operated-easily" with increasing innovation, establishing our quality principle of "carefully manufacture to set up our brand, develop and innovate to get high quality". We try our best to make every machine as boutique, so that we make considerable development when our customers get the benefit, as well as make our own contribution for our children and grandchildren to have a green earth.



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### **Products Catalogue**

NAME	GRAPH	MODEL	APPLICATION
Waste Tyre/Plastic Pyrolysis Plant		XY-7 XY-8	It is applied to extract fuel oil from kinds of scrap rubber, tyre, plastic through pyrolysis, separating the crude carbon black and steel wires.
New Design Waste Tyre/Plastic Pyrolysis Plant		XY-8	Matched base, no foundation, more convenient installation, with new designed sync gas purfication system , making the whole production cleaner and more environmental friendly.





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Continuous Pyrolysis Plant		ХҮ-9-Р	Fully automatic and continuous process with advanced technology and large capacity, no need fuel during the process to convert waste into wealth, with high quality end products.		
Distillation Plant		XY-1 XY-8	It is applied to refine diesel grade oil from used engine oil, fuel oil, crude oil through distillation.		
Continuous Distillation Plant		ХҮ-9	Fully continuous system with advanced technology with daily capacity of 30~300 MT. End product of gasoline, diesel, or base oil accordingly.		
Carbon Black Granule Machine		XY-C850	be made into N330, N660, N774 standards according to customers' different requirements.		
Auto-loader		XY-AL200 XY-AL500 XY-AL800 XY-AL1200	It could be applied to deliver all kinds of small pieces of rubber blocks and plastic to equipment of somewhere.(Belt Delivery System, Hydraulic System, Spiral System)		
Steel-drawer		XY-C800 XY-C1200	It could be applied to cut all kinds of rubber blocks and strips. It is good for cutting rubber tyre, rail tyre, rubber strips etc.(650-1200 Tyres)		

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	1		
Whole Tyre		XY-SH800	At the room temperature, put the tyre or
Crusher		XY-SH1200	large plastics of rubber into the press
			directly, which can then be crushed to
			1-8 cm pieces.

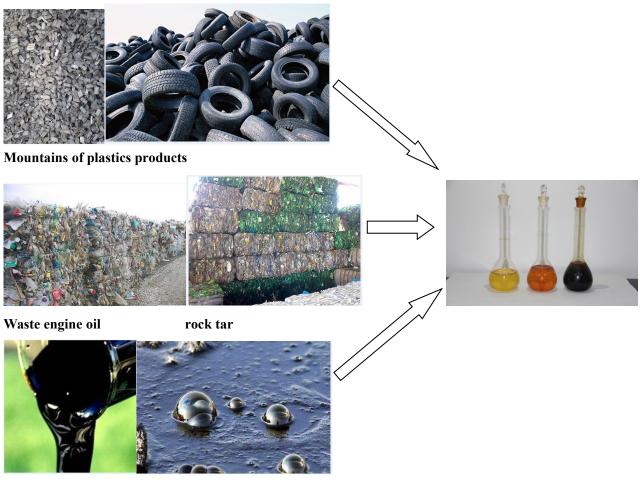
# **Raw Material of the Project**

The total quantity of the plastic products is over 100 million tons at present in the world and the quantity of the plastic products in our country has also reached 10 million tons. It is growing 13% year by year and the total quantity is also rapidly increasing.

The output of tyres in our country is very high and has reached No.2 in the world nowadays and there are around 400 million tyres produced every year in China.All of the world, there are around 4 billion used tyres produced, and this number is still growing by double-digit rate.

70% of the scrap tyres have not been recycled. And lots of waste engine oil, crude oil, fuel oil needs suitable treatment and recycling.

#### Mountains of rubber products



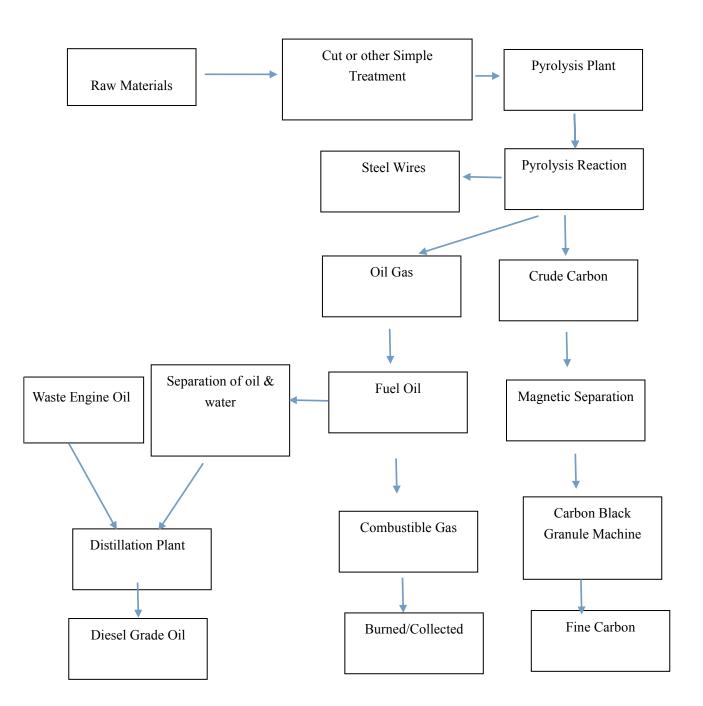
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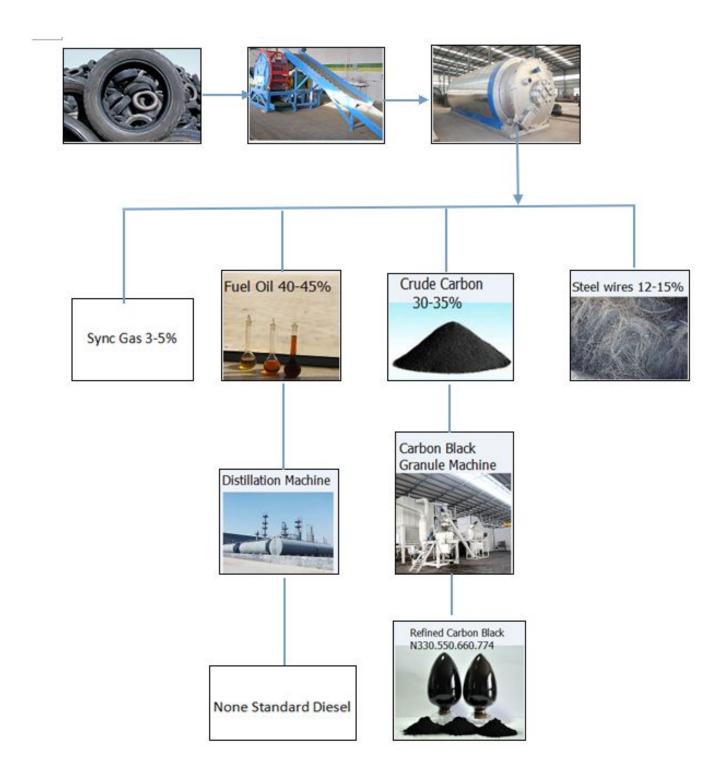


### Whole processing flow chart





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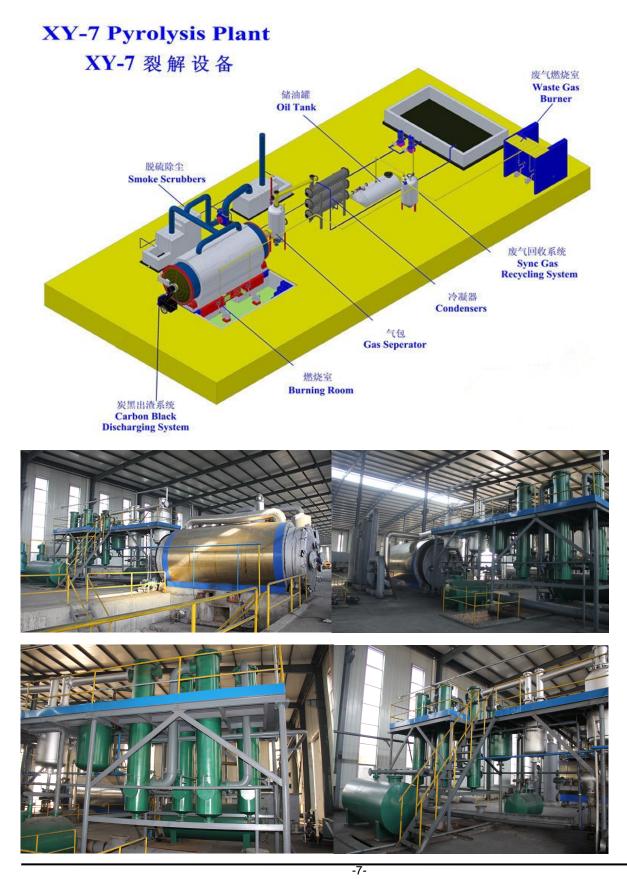






# **XY-7 Pyrolysis Plant**

The 3D Graph of XY-7 Pyrolysis Plant





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#### Features of XY-7 Pyrolysis Plant

1.Full open door design: Speedy loading in and steel pulling out; Easily cooling down after one batch finished, saving time; No leaking with special high: temperature flexible Graphite packing.

2, High condensing efficiency condensers with more oil output. Good quality oil, longer lifetime, and easy to clean.

3, National Patent Water Film Smoke Scrubber: Efficient removal of the acid gas and dust of the smoke, environmental friendly to meet related national standards.

4, National Patent, Carbon Black Discharging System: Speedy fully enclosed Auto-discharging under high temperature, avoiding carbon black pollution, saving time.

5.Automatic submerged welding technology, ultrasonic nondestructive testing, both manual and the automatic safety devices.

6,Sync Gas Recycling System: Fully burned after recycling and utilization, saving fuel and preventing pollution.

7,Direct Heating System: Enlarging heating square to extend the service time of the reactor and controlling its temperature easily.

8, National Patent, unique heat insulation shell: high efficiency temperature keeping, excellent energy -saving effect.

#### **Pyrolysis Plant Feasibility Analysis**

NO.	ITEM	DETAILS
1	DAILY CAPACITY	10MT
2	Raw Materials	Waste Tyres
3	Cost of Tyres	10T*400EGP/MT=4000EGP
4	Cost of Catalyst	10mt*0.3%*6900/mt=207EGP
5	Labor (DAILY)	4p*100EGP/D/P=400EGP
6	Electricity & Water	150EGP
7	FUEL COST	0.45MT*1900EGP=855EGP
8	Other	150EGP
9	Total Cost	5762EGP
10	Oil Income	10MT*40%*1900=7600EGP
11	Steel Income	10MT*13%*1300=1690EGP
12	Carbon Income	10MT*35%*800=2800EGP





13	Gross Income	12090
14	Daily Net Income	12090-5762=6328EGP
15	Monthly Net Income	6328/D*25D=158.200EGP
16	Yearly Net Income	158,200*11M=1,740,200,00

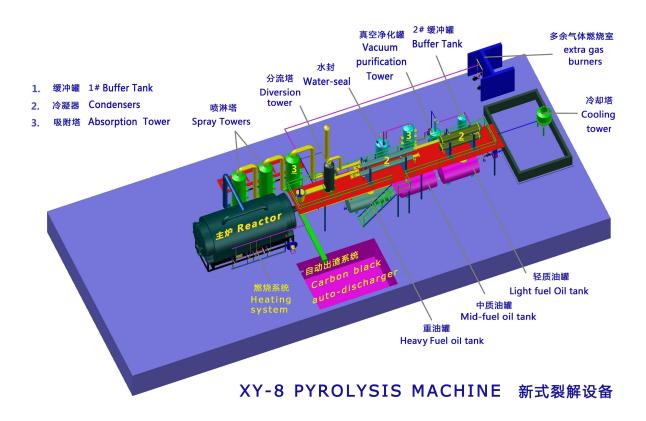
Note: 1. This analysis is made with capacity of 10Mt cut tyres per day per batch,

2. Please modify relative prices according to your actual market conditions.

Line Cost: 72000\$=612000EGP Depriciation rate for Long Life: 3-4 Year if 3 years = 204EGP/Year, if 4 years = 153EGP/Year

# XY-8 Integrated design

As the developed countries from Europe or USA have more strict environmental requirements than the developing countries we have made greater improvements on our exhausting emission system based on our condensation of XY-7 that we have developed our XY-8pyrolysis plant to Europe and other developed countries.





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Features of the integrated of XY-8 pyrolysis plant

1. Integrated design of reactor and base, no civil work needed to make the installation faster and easier.

2.Unique diversion tower for oil gas. This system can divide the oil gas into light density fuel oil, medium density fuel oil, heavy density fuel oil to meet different requirement of oil quality.

3.Sync gas purification system is designed for developed countries which has very high environmental standard. It makes the full operation process under slightly negative pressure to ensure the safety of operation. And the system removes acid content of the sync gas to ensure the production is both clean and environmental friendly.

4.National Patent Unique Smoke Scrubbers: More efficient removal of the acid gas and dust of the smoke through neutraliza tion, purification and absorption, environmental friendly without pollution.

5. National Patent automatic Carbon Black Discharging System: Speedy fully enclosed Auto-discharging under high temperature, avoiding carbon black pollution and saving time.

6.Safety aspect: Production under Slightly negative pressure, automatic submerged welding technology, ultrasonic nondestructive testing, both manual and automatic safety devices





# **XY-1** Distillation Plant





#### The Features of XY-1 Distillation Plant

1. Unique and original manufacturing and technology with our own formular of our equipments in China.

2.Unique Horizontal design, high oil output with about 90% oil yield and 100% conversion rate, high effective and profitable.

3.Good quality end product oil as the substitution of standard diesel oil in usage.

4.Automatic submerged welding technology, ultrasonic nondestructive testing, both manual and the automatic safety devices.





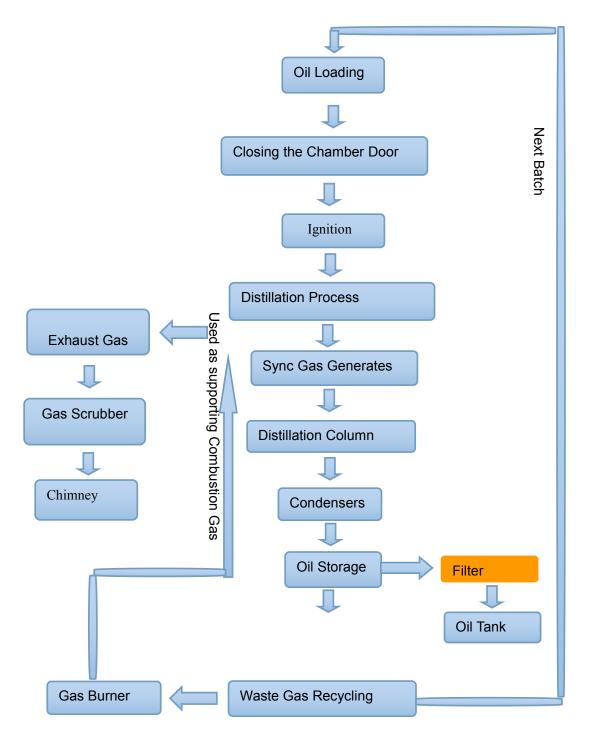
5.Sync Gas Recycling System: Fully burned after recycling and utilization, saving fuel and preventing pollution.

6.National Patent, unique heat insulation shell: high efficiency temperature keeping, excellent energy -saving effect.

7..High condensing efficiency condensers with more oil output. Good quality oil, longer lifetime, and easy to clean.

8.National Patent Water Film Smoke Scrubber: Efficient removal of the acid gas and dust of the smoke, environmental friendly to meet related national standards.

#### The Operation Flow Chart of XY-1 Distillation Plant







#### **Distillation Plant Feasibility Analysis**

NO.	ITEM	DETAILS
1	CAPACITY PER BATCH	30MT
2	Suitable Raw Materials	Crude oil, Fuel oil, Used Engine Oil, Lub. Oil, etc Crude oil specialy, a-fuel oil b-used engine oil
3	Cost of Raw Materials	30T*2000EGP/MT=60000EGP
4	#1 Cost of Catalyst	30MT*0.3%*7000EGP/MT=630EGP
5	#2 Cost of Catalyst	30MT*85%*300EGP/MT=7650EGP
6	Labor (DAILY)	3P*100EGP/D*5D=1500EGP
7	Electricity & Water	1KWH*1EGP*240KWH/D*5D=1200EGP
8	FUEL COST	4.0T/D*2000EGP/D=8600EGP
9	Other	1000EGP=1000EGP
10	Total Cost	79980EGP
11	Oil Income or non standard diesel only for export	30MT*85%*6000=153000
12	Carbon Income	30MT*7%*800EGP/MT=1680
13	Gross Income	154280EGP
14	Net Income/5D	74700EGP
15	Monthly Net Income	74700*4=298800EGP
16	Yearly Net Income	375500*11M=3286800

Note: 1. This analysis is made with the capacity of 30Mt raw oil per batch in 5 days, coal as the heating fuel.

2. Please modify relative prices according to your actual market conditions.



# **XY-8 Carbon black granule machine**

1. Unique and original manufacturing and technology with our own formula of our equipments in China;

2. High automatic with automatic operation;

3. The carbon black as the end product can be made into N330,N660,N774 standards according to customers' different requirements;

4.Long life span, more than 6 years;

5. Fully enclosed operation, environmental friendly without pollution.



#### **Carbon Black Granule Machine Feasibility Analysis**

NO	Item	Details
1	Capacity	8MT/8hs
2	Raw Materials	Waste Tyres/Plastics Carbon Black
3	Cost of Tyre Carbon Black	8MT*800EGP/MT=6400EGP
4	Cost of Catalyst	8MT*8%*11050EGP=7072EGP
5	Labor Salary(Daily)	4*100EGP/D=400EGP
6	Electricity&Water	200KW/H*1EGP/KW*8H=1600EGP
7	Others	400EGP
8	Total Cost	15872EGP
9	Carbon Income	8M*98%*6900EGP/MT=54096EGP
10	Daily Net Income	54096-15872=38224EGP
11	Monthly Net Income	38224EGP*25D=191120EGP
12	Yearly Net Income	191120*11M=2102320

Note: 1. This analysis is made with capacity of 8Mt/8Hs tyres carbon black,end product of N774 carbon black;

2.Please modify relative prices according to your actual market conditions.





# **Technical Parameter of the Pyrolysis plant**

NO.	ITEM	PROJECT		
1	Equipment Model	XY-7	XY-8	
2	Door Model	Full Open Door	Full Open Door	
3	Suitable Raw Materials	Rubber/Plastic Products	Rubber/Plastic Products	
4	Structure	Horizontal Type Revolves	Horizontal Type Revolves	
5	Reactor Size	Ф2200*6000mm	Ф2200*6000mm	
5		Ф2600*6600mm	Ф2600*6600mm	
6	Capacity for One Batch	5-6Mt; 8-10Mt	5-6Mt; 8-10Mt	
7	Oil Yield of Tires	40%-45%	40%-45%	
8	Work Pressure	Normal Pressure	Normal Pressure	
9	Reactor Rotation Speed	0.4R/M	0.4R/M	
10	Fuels Choice	Coal, Wood	Coal, Wood, Gas, Oil	
11	Power	18KW/H	18-25KW/H	
12	Cooling Method	Water Cycling	Water Cycling	
13	Type of Drive	External Annular Gear	External Annular Gear	
14	Heating Method	Direct	Direct	
15	Type of Installation	With Foundation	With Foundation	
16	Noise dB (A)	≦85	≦85	
17	Operation Mode	Intermittent Operation	Intermittent Operation	
18	Total Weight (MT)	25-35	35-40	

## **Technical Parameter of the Horizontal Distillation plant**

NO.	ITEM	PROJECT		
1	Equipment Model	XY-1		
2	Suitable Raw Materials	waste Engine Oil,Fuel Oil,Crude Oil	waste Engine Oil,Fuel Oil,Crude Oil	
3	Structure	Horizontal Type	Horizontal Type	
4	Capacity (24hours)	3-4Mt	5-6Mt	
5	Work Pressure	Normal Pressure	Normal Pressure	
6	Oil Yield	85%-95%	85%-95%	
7	Power	18KW/H	18KW/H	
8	Heating Method	Hot Air	Hot Air	
9	Type of Installation	With Foundation	With Foundation	
10	Noise dB(A)	≦85	≦85	
11	Chamber Size	Ф2200*6000mm	Φ2500*8800mm	
12	Operating Mode	Semi-Continuous Operation	Semi-Continuous Operation	
13	Cooling Method	Water Cycling	Water Cycling	
14	Condensers	3 Pieces of Horizontal Condensers	3 Pieces of Horizontal Condensers	
15	Installation Space	30m*12m	35m*15m	
	Required			
16	End Product	Non-standard Diesel Oil Non-standard Diesel Oil		
17	Manpower	2-3/shift	2-3/shift	



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# **Products and Usage**

The final products after pyrolysis from waste plastic or rubber products are: fuel oil, crude carbon black, (steel wires) and sync gas, whose usage are indicated as follows:

Final products	Pictures	Usage
Fuel Oil 40-45%		widely used in Industries such as Steel & Iron factories, Ceramics or Chemical Industries or Hotels, Restaurants etc. as fuel oil, or used for heavy oil generators to get electricity.
Carbon Black 30-35%		Crude carbon black can be used for construction bricks, or widely used as industrial carbon black N774, N660, N330 or color carbon black after deep-process.
Steel Wires 12%~15%		from tires, sold or Reprocessing.
Combustible Gas 3-5%		can be recycled and used during process as fuel or collected even compressed into liquid gas, used as fuel or to generate electricity.

The end product after distillation could be diesel grade oil or base oil accordingly. The diesel grade oil can be used for vehicles mixed together with standard diesel oil or used for vehicles directly after blending with additives. The base oil from used engine oil after distillation can be made into different lubricant oil accordingly with additives.







# **Carbon Black Parameter after Deep Processing**

The output of the carbon black is about 95% from steel wire tires when the crude carbon black without any steel or metal inside.

After grinding with our granule machine, and blended with chemicals, the recycling carbon black from tires can made into industrial grade reinforcing carbon black, the following is 4 carbon black models N330, N550, N660, N774 parameters:

Result MOD Item	EL   N774	N660	N550	N330
Lodine Absorption value: g/kg	29	38	44	82
DBP Absorption Value: 10 <sup>-5</sup> m <sup>3</sup> /kg	74	93	118	101
Heating Loss %	0.3	0.3	0.2	0.2
Ash %	≤ 0.75	≤0.75	≤0.75	≤0.75
150 um Residue on Sieve, %	0.01	0.01	0.01	0.01
Tensile trength MPa	-3.4	-3.6	-3.5	-1.7
Elongation at Break %	6	-2	-6	-2
300% Set tensile strength MPa	-3.2	-1.7	-0.8	-0.8
Grade	Qualified N774	Qualified N660	Qualified N550	Qualified N330
Appilcation	N774 is used in tire belt layer or ply, inner tubes, bicycle tires, hose, belt, cable, footwear and calendered products, model products, natural rubber, neoprene, nitrile rubber products.	N660 is applicable to all kinds of rubber, is mainly used for tire wheels, inner tubes, bicycle, hose, belt, cable, footwear and calendered products, model products.	N550 for natural rubber and various synthetic rubber, mainly used for tire cord rubber, sidewall, inner tube and extrusion, calendering products rubber compound.	N330 is a good reinforcing properties of carbon black, particles can give a better tensile properties, tear resistance, abrasion resistance and flexibility. Mainly used for tire tread, cord rubber, sidewall and various rubber



# Parameters of Fuel Oil and the Output of Waste Plastic &

# **Rubber Products**

We can do the feasibility analysis for bellow products as same as before with 10% waste gas and balance black carbon.

Item			Output
	Picture	Raw Materials	400/ 45
T		Steel Tyres	40%~45
Tyres		Nylon Tyres	<u>%</u> ≈40%
		Tyres of bikes etc.	≈35%
		HDPE	≥70%
		LDPE	30~50%
Plastics		PVC	20~30%
		Bags	≈40%
		ABS	≈40%
		Rough Material	≈15%
Paper Mixture		Washing Material	23%~26
		PE material	≈70%
		PE cable skin	≈85%
Cable Skin		PVC cable skin	≈25%
		Pure rubber cable skin	≈35%
		Telephone line	≈50%
Life Garbage		Pure (Plastic bags)	≈50%
		Weaves & Handbags	≈60%
		(Wet Mixture)	≈15%



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Soles		Sports Shoes Soles	27%~33 %
		Black Rubber Soles	≈35%
		Gum-rubber outsoles	≈45%
Others		Usual Rubber Tubes	≈30%
		Carpets	≈35%
		Aluminum Foil	≈30%
		Car glass bead	≈50%
		PP) Beverage Bottle	≈50%

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### **Plants delivery**



Inspecting the Welding



Hoist the Reactor



Examination again before Delievery



Equipments for Delievery in the Port



Delivery of Main Parts



Equipments to Saudi Arabia

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