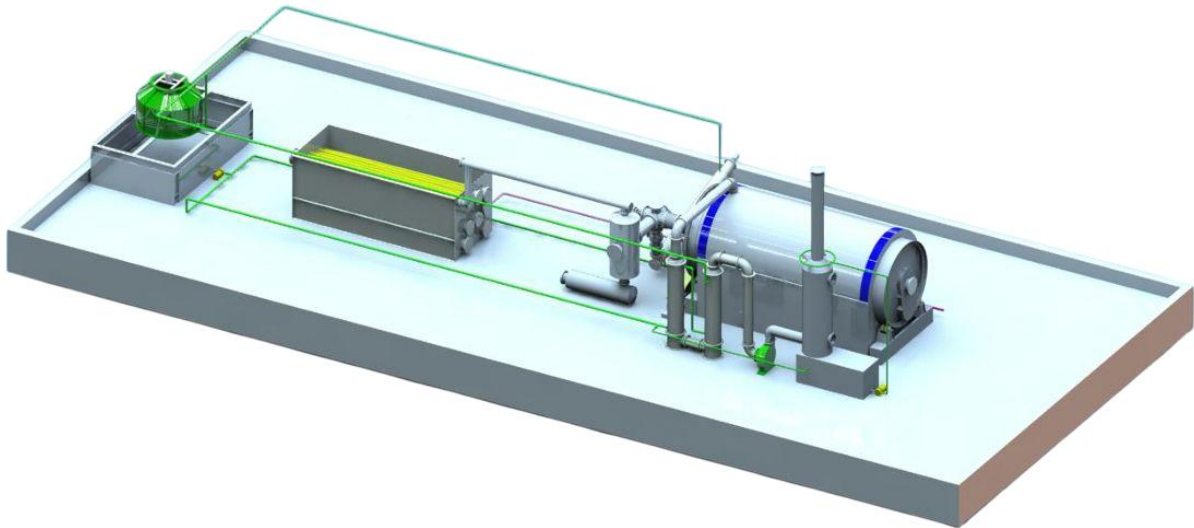


KMARIN WFCC - F15 PLANT COST ANALYSIS

PART 1: REACTOR



Reactor Technical Parameters

Reactor size	Φ 2800 * L 8000 * T 18mm
Capacity	13-15 ton / batch
Operation	Batch type
Power consumption	28 kW/h
Diesel consumption	360 liters
Rotating speed	0,4 turn / minute
Inside pressure	< 0,04 mPa
Land required	300 m ²
Workers required	Total 4-6 workers, two shifts

All products certified by CE, ISO and SGS.

What products we can get from Tyre Processing?

- Heavy liquid fuel, use for fuel in reactor and send to distillation unit for getting purified fuel
- Syngas (combustible gas), use for fuel in reactor and generator for electricity demand
- Carbon black, Sell as for tifier and filler of plastic and rubber industry or as color master batch
- Steel wire, Sell to iron factory directly

Time Breakdown of Reactor Process

Process for waste tyre can be expected to be finished within 20 hours

- Highest temperature in the reactor around 350 °C
- Feeding 13-15Ton: 2hours
- Reaction Period: Around 12-14 hours
- Reactor cooling down: 3 hours
- Carbon discharging : 2 hours
- Steel wire removing: 1-2 hours

What does our scope of supply include?

Item	Specification	Unit	Quantity
Reactor	Φ 2800 * L 8000 * T 18mm Material:Q345R boiler steel	set	1
Reactor casing	3300 * 6500 * 2mm Insulation of the reactor	set	1
Reactor base	7640 *2400 mm Reactor supporter and heating burner (reduce civil works, shorten installation time)	set	1
Gas seperator	Φ 900 * 1500 mm Separating heavy fuel gas and light fuel gas	set	1
Heavy fuel tank	Φ 600 * 1500 mm Heavy fuel storage	set	1
Carbon black auto discharger	Φ 426 * 2200 mm Discharging and taking out carbon from reactor	set	1
Hydraulic auto feeder	Hydraulic station 7.5 kW Remote control D 1200 mm	set	1
Tyre debader 1#	Available tyre size: <750 mm Function: Cut two side walls at same time Capacity: 300-420 pcs/h Power:2.2 kW	set	1
Tyre debader 2#	Available tyre size: 700-1200 mm Function: Cut one side wall Capacity: 30-40 pcs/h Power:5,5 kW	set	1
Tyre compact machine	Function: Compress the tyres, to reduce the volume Tyresize: < 750 mm, Power: 15 W	set	1
Carbon black water cooling discharging screw	Discharge screw: Φ 320 * 6000 mm Auto discharging of the carbon, cool down the temperature of carbon	set	1
Integrated condenser	1500 * 2400 * 5800 mm Oil gas condenser, Main material: Q235B carbon steel 750 * 2400 * 4600 mm Fuel storage tank, Explosion-proof oil pump + motor 2.2kw 750 * 1200 * 1000 mm Water seal, Include water pump	set	1
Flue tube condenser	Φ 530 * 3000 mm Cool down the smoke, protect draft fan and better meet environmental standards	set	1
Draft fan	For smoke flowing to dedustor Power:4KW	set	1
Desulfurization ScrubberTower	Ø 900 * 3000 mm Stainless steel	set	1
Make-up water tank	1500 * 1500 * 1000 mm Stainless steel	set	1
Chimney	Φ 325 * 3000 mm	set	1
Cooling tower	Cool down th erecycled water Motor Power:3kw	set	1
Electric control abinet	Complete controlling of the electrical parts in the system	set	1
Syngas burner	For combustible gas burning	set	5
Air blower	Power: 2,2 kW	set	2
Liquid fuel burner	Heating capacity: 300,000Kcal/h (Two sections of fire)	set	3
Syngas monitor system	Including case, meter, signal cable and sensor	set	1

How much we quote for above complete list?

Price	89,030 USD , FOB Qingdao CN
Quantity	Set 1
Packing	1*40'FR+1*40'HC
Delivery time	45 working days after down payment
Payment terms	30% TT in advance, 70% TT before delivery

After Sales Service

- Solution designing, technical and financial proposal preparation, and market analysis
- Provide installation, commissioning and training service, has a professional team for after-sale service, the buyer needs to undertake the engineer's round trip tickets, local accommodation, and pays the engineer with salary USD 95 per day
- All the products has 12 months warranty since clients sign the act of acceptance
- Life time technical support, technology upgrading from R&D department
- 24 hours on-line service

PART 2: DISTILLATION & EUROPEAN STANDART EMISSION PURIFICATION SYSTEM



Distillation Unit Technical Parameters

Structural form	Horizontal
Size of reactor	Φ 2200 * H 5100 mm
Material of reactor	Q345R
Capacity	8-10 mt
Rate of yield	20-30% non standard gasoline 45-55% non standard diesel
Power	46 kW
Applicable fuels	Oil, LPG, Nature Gas, Wood, Coal
Pressure	Vacuum, negative Pressure

What does our scope of supply include?

Item	Specification	Unit	Quantity
Distillation Reactor	Φ 2200 * L 5100 mm	set	1
Reactor casing	2700 * 4300 mm Insulation of the reactor	set	1
Reactor base	5100 * 2200 mm	set	1
Distillation tower	Φ 530 * L 4500 mm	set	1
Fuel condenser for diesel	Φ 820 * L 3600 mm	set	2
Fuel condenser for heavy oil	Φ 630 * L 3600 mm	set	1
Oil tank #1	Φ 1400 * L 5500 mm	set	1
Oil tank #2	Φ 1400 * L 2000 mm	set	1
Vacuum generator	Φ 1800 * L 3000 mm	set	1
Hydro seal	Φ 900 * L 1500 mm	set	1
Pickling tank	Φ 1800 * L 3000 mm	set	1
Alkaline tank	Φ 1800 * L 3000 mm	set	1
Activated clay tank	Φ 1800 * L 3000 mm	set	1
Steam boiler	250 kg	set	1
Filter press		set	1
Air compressor	0,9 m ³	set	1

Flue condenser	Φ 320 * L 4000 mm	set	1
Draft fan	4 kW	set	1
Dedusting system	Φ 900 * L 3000 mm	set	1
Syngas burner		set	6
Electrical control board		set	1
Motors		set	1
Gasoline fractions condenser	Φ 630 * 3600 mm	set	1
Oil storage tank	Φ 1400 * 2000 mm	set	1
Pipe valve instrument		set	1
Oil and water pumps	7.5 kw High temperature circulating oil pump 1	set	1
	2.2 kw centrifugal oil pump		4
	7.5 kw Vacuum pump		1
	2.2 kw water pump		2
	2.2 kw pressure oil pump		1

How much we quote for above complete list?

Price	84,380 USD , FOB Qingdao CN
Quantity	Set 1
Packing	1*40'FR+4*40'HC
Delivery time	50 working days after down payment
Payment terms	30% TT in advance, 70% TT before delivery

After Sales Service

- Solution designing, technical and financial proposal preparation, and market analysis
- Provide installation, commissioning and training service, has a professional team for after-sale service, the buyer needs to undertake the engineer's round trip tickets, local accommodation, and pays the engineer with salary USD 95 per day
- All the products has 12 months warranty since clients sign the act of acceptance
- Life time technical support, technology upgrading from R&D department
- 24 hours on-line service

Emission Purification System Technical Parameters

What does our scope of supply include?

Dedusting system	Ø1600*3500	2 sets	Carbon steel with insulation materials
Built-in spiral steel plate	8*60	4 pcs	Carbon steel
Emission input	400*300	2 sets	Carbon steel
Bracket	160 U-bar	2 sets	
Cone-shaped body	Ø1600*Ø200*2200	2 sets	Carbon steel
Dust discharging belt	Ø219*4000	1 set	Stainless steel
Gas denitration system		1 set	PP
Denitration module		1 set	Stainless steel
Denitration liquid evaporator	Φ600×5000	1 set	Stainless steel
Burner	Q=20~50L/h	2 sets	316L stainless steel
Denitration catalyst		6m ³	Catalyst 25-holes
Cooling tower	Ø1800*H5500	1 set	Carbon steel + castable + anti-corrosion tile
Casting material		2T	High temperature resistance, acid and alkali resistance
Leak-proof FRP		0.5T	High temperature resistance, acid and alkali resistance
Built-in tile		31m ³	High temperature resistance, acid and alkali resistance
Circulation pump	50m ³ /min, lift 28 meters	1 set	Chemical benzene; One set for backup
Gas desulfurization system	Ø 2000*H7200	1 set	RPMP
Outlet and Inlet	Φ500m	2 sets	
Spray atomization system	Ø 2000	3 sets	RPMP
Dehydrating mist eliminator	Ø 2000*200	2 sets	RPMP
Circulatory system	Ø 80	1 set	304 stainless steel
Desulphurization pump	60m ³ /min, lift 28 meters	1 set	Chemical pump
Draft fan	Air volume: 12000 Air pressure: 2200	1 set	Carbon steel
Link pipes	Φ500	1 set	RPMP
Activated carbon and UV light Unit	Air volume: 12000CMH Power: 7.5kw	1 set	201 stainless steel
Chimney pipes	Φ500	15 meters	RPMP
Operation platform	1000*1000*9000	1 set	50G/B Angle steel

EMISSION ANALYSIS REPORT(ANALYSIS)

Emission from tire pyrolysisplant analysis Report

Testing items	Data	First time	Second time	Third time
Low concentration particulate matter Sulfur dioxide Nitrogen oxide	Measured concentration mg/m	1.8	1.3	1.5
	Emission rate kg/h	0.109	9.13x10 ⁻²	0.111
	Converted concentration mg/m	6.3	4.5	5.1
Hydrogen sulfide toluene xylene	Measured concentration mg/m	19	19	16
	Emission rate kg/h	1.15	1.33	1.18
	Converted concentration mg/m	66	65	55
Total volatile organic compounds Low concentration particulate matter Sulfur dioxide	Measured concentration mg/m	40	40	36
	Emission rate kg/h	2.42	2.81	2.66
	Converted concentration mg/m	140	137	124
Nitrogen oxide Hydrogen sulfide toluene	Measured concentration mg/m	0.11	0.11	0.12
	Emission rate kg/h	6.66x10 ⁻³	7.73x10 ⁻³	8.86x10 ⁻³
	Converted concentration mg/m	0.38	0.38	0.41

How much we quote for above complete list?

Price	110,200 USD , FOB Qingdao CN
Quantity	Set 1
Packing	2*40'HC
Delivery time	50 working days after down payment
Payment terms	30% TT in advance, 70% TT before delivery

How much we quote for WFCC-F15 total plant?

Price	283,610 USD , FOB Qingdao CN
Quantity	Set 1
Packing	2*40'FR+7*40'HC
Delivery time	50 working days after down payment
Payment terms	30% TT in advance, 70% TT before deliv