



For a Greener World,
For a Promising Future,

GREEN CARBON BLACK



Get to Know Us

Era Environmental Technologies Inc.

In the face of environmental problems resulted from developing technology and fast-growing industrialization, Era Environmental Technologies Inc. was established in 1999 with the aim of providing proper solutions to these problems with appropriate technologies.

Since then, the company has always prioritized the environment and human health and aimed to be the leader in this field with its research, projects and facilities.

In this context, our company initiated R&D studies in “Medical Waste Sterilization and Alternative Systems,” contacting many international companies and comparing various Technologies in this field.

Due to the conducted R&D studies, activities directed to municipalities, seeing alternative processes on-site, an important background information has been gained.

As a result of these efforts, the company has introduced the Autoclave Sterilization Technology to Turkey after a successful collaboration with the manufacturer of the largest autoclave sterilization system all around the World, which is active in 24 countries and across the American continent.

ERA acts with the principle to be a part of new and prestigious projects which bring solutions to the environmental problems in Turkey through carrying out productive, efficient and router works using its experience and proficiency.



Mission

To offer waste management systems and environmental technologies to the service of humanity through pioneering and innovative projects and to contribute the increase of social welfare by developing sustainable and environmentally friendly solutions.

Vision

To become a respected, preferred and an industry-leading company in Turkey and on international platforms through productive, effective and distinguished works, by taking strength from our experience and know-how.

Erzincan End-of-Life Tire (ETL) Recovery, Electricity and Carbon Black Production Plant

Erzincan Plant is operated in the organized industrial zone at which the pyrolysis method is used to recycle/recover the worn out tires. Energy is also generated from the pyrolytic oil and gas which are used as secondary raw materials. Therefore, our facility contributes to a clean and livable environment for future generations without harming the nature and without causing any pollution. The plant helps to save energy, to reduce the waste amount and to boost the local and national economy.

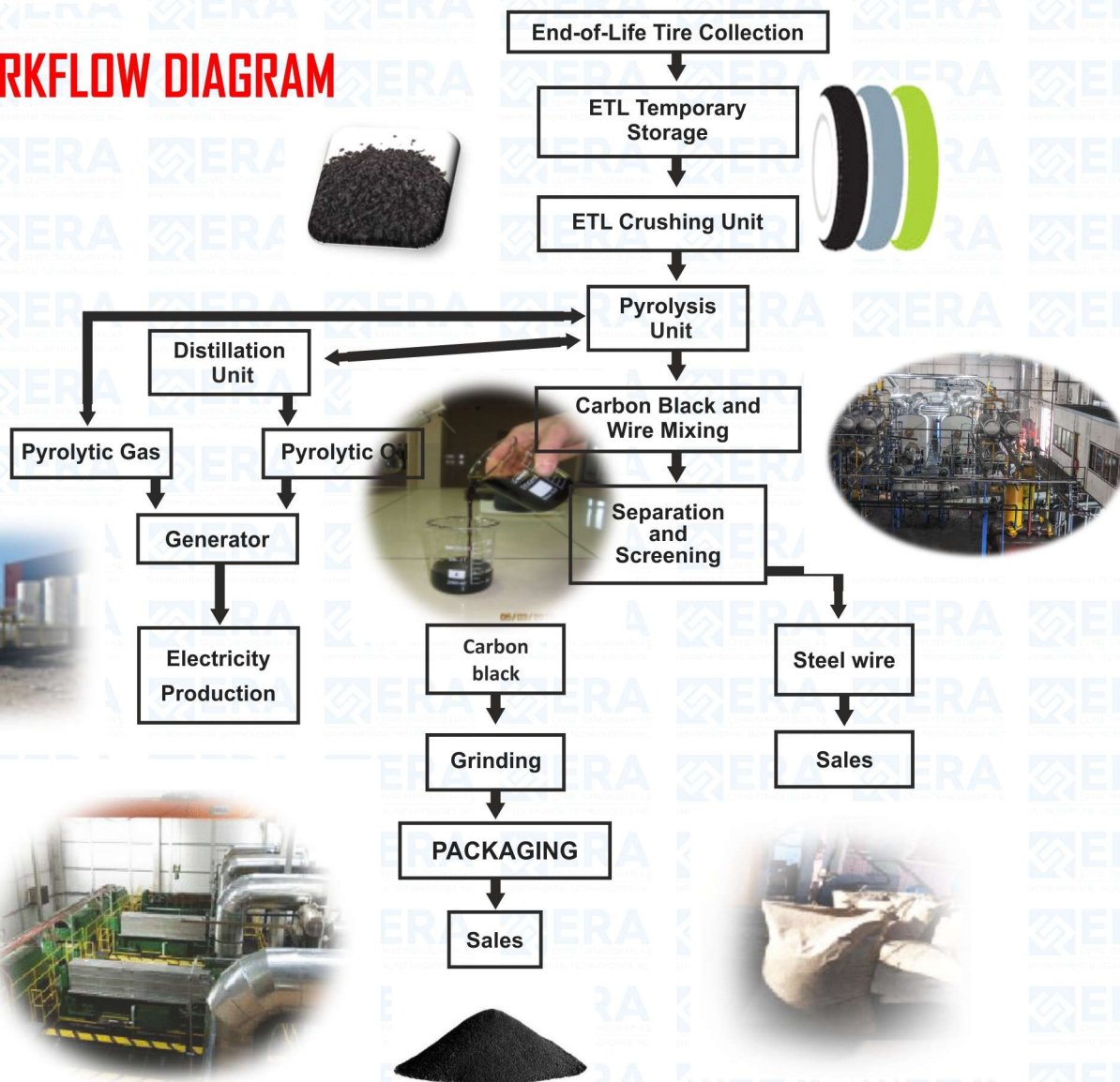
- **LOCATION OF THE FACILITY :** ERZİNCAN
- **TYPE OF FACILITY :** End-of-Life Tire (ETL) Recovery, Electricity and Carbon Black Production Plant
- **CAPACITY OF FACILITY :** 75 tons/day
- **OPENING YEAR OF THE FACILITY:** 2009





RECOVERY OF WASTE TIRES BY PYROLYSIS

WORKFLOW DIAGRAM



WHAT IS End-of-Life Tire ?

An end-of-life tire is a used tire that cannot or is not reused for its originally intended purpose and is not retreaded. Such tires may have a further use as a raw material for other processes or be destined for final disposal.



1-) GRANULE PLANT

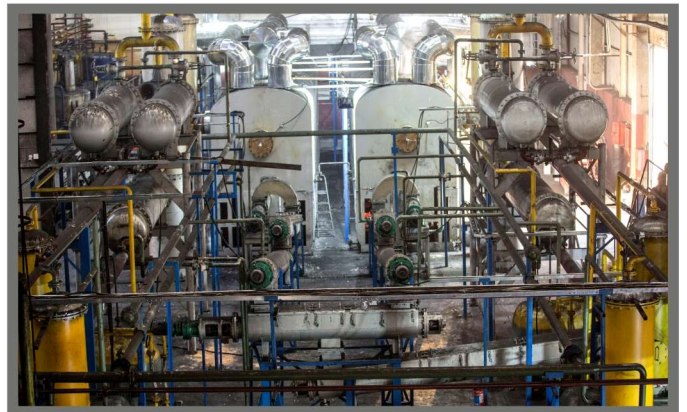
After various processes in the crushing unit, granules are obtained and this granule is a product that feeds the pyrolysis system. Production capacity: 3 ton / hour



2-) PYROLYSIS PLANT

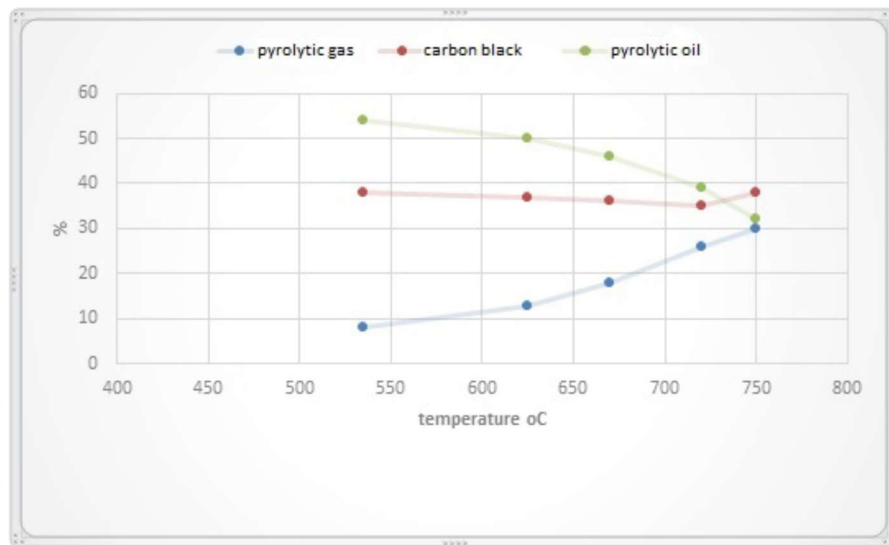
Pyrolysis is the process of breaking organic chemical bonds in oxygen free environment with the effect of heat. Pyrolysis process takes place in reactors.

Firstly, gasification is done in the system. The gas obtained in the condensers is condensed and made liquid. Light products are stored in gas format while condensed products are stored in liquid form.



The last product in the reactors is carbon black..

The total production capacity of the reactors is 75 tons / day.

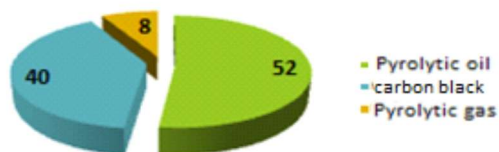


***Temperature change of pyrolysis products

Obtained Products and Average Quantities

Name of the product	Percentage (%)
Pyrolytic oil	48-52
carbon black	42-40
Pyrolytic gas	10-8

Percentages (%)



3-) ELECTRICITY PRODUCTION PLANT

Annual 49.000 KWh electricity generation
4 pcs Wartsilla generator
Each has a production capacity of 3 MW,
12 MW total installed capacity



What is Carbon Black?

Carbon black is composed of fine particles consisting mainly of carbon.

Various features of carbon black are controlled in production by partially combusting oil or gases.

Carbon black is widely used in various applications from black coloring pigment of newspaper inks to electric conductive agent of high-technology materials.

Main Uses;

- Asphalt additive material,
- Cable,
- Conveyor belt,
- Hose, mop,
- Black sachet,
- Spare parts for cars,
- Thermal insulation,
- Paints in rubber materials,
- Base material,
- Plastic making,
- Mixture with rubber dough (Tire production)





PHYSICAL AND CHEMICAL PROPERTIES

Test Item	Result
1-) Appearance	Powder or pellet
2-) Color	Black
3-) Water Solubility	20°C insoluble
4-) Odor	Odorless /odor threshold not applicable
5-) Melting point	Range>3000°C
6-) Boiling point	Range>3000°C
7-) Flash point	Not applicable
8-) Density: (20°C)	1.7 – 1.9 g/cm ³
9-) Bulk density	20 -440 kg/m ³
10-) PH value (ASTM 1512)	10g/l water 4- 11
11-) Auto-ignition temperature	>140°C
12-) Iodine absorption value g/kg	81
13-) DBP absorption value 10 ⁻⁵ m ³ /kg	96
14-) Ash (825°C) %	14.78 ± 0.5
15-) Heating loss (125°C) %	0.5
16-) Humidity	0.7 ± 0.3

17-) Elemental Analysis

%C	%H	%S	%O
56.73	2.09	2.11	39.07

18-) Particle Size;

Particle size of carbon black sample
 It has a range of 0.15 micron to 3.5 micron. The particles obtained by grinding
 74% of the volume consists of particles in the range of 0.8 microns to 2 microns

Size Distribution Report by Volume

v2.0

Sample Details

Sample Name: 23724-01-Carbon Black 1

SOP Name: mansettings.dat

General Notes:

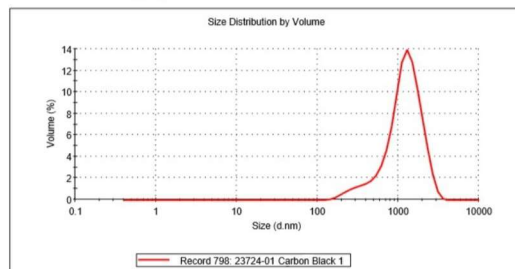
File Name: 20171023.dts Dispersant Name: Water
Record Number: 798 Dispersant RI: 1,330
Material RI: 2,00 Viscosity (cP): 0.8871
Material Absorption: 0,10 Measurement Date and Time: 19 July 2018

System

Temperature (°C): 25.0 Duration Used (s): 70
Count Rate (kcps): 161.6 Measurement Position (mm): 4.65
Cell Description: Disposable sizing cuvette Attenuator: 10

Results

Z-Average (d.nm): 495,7 **Diam. (nm)** **% Volume** **Width (nm)**
PdI: 0,329 **Peak 1:** 1277 100,0 577,1
Intercept: 0,949 **Peak 2:** 0,000 0,0 0,000
Result quality Good **Peak 3:** 0,000 0,0 0,000



Size Statistics Report by Volume

v2.0

Sample Details

Sample Name: 23724-01-Carbon Black 1

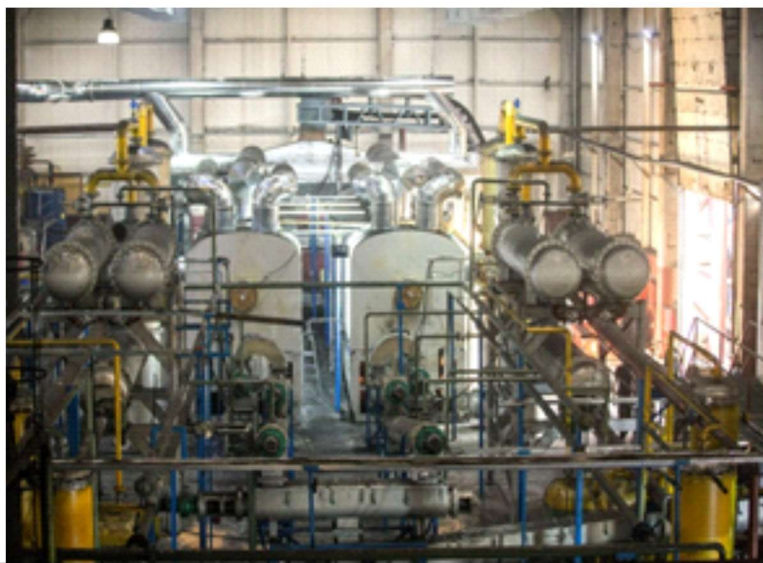
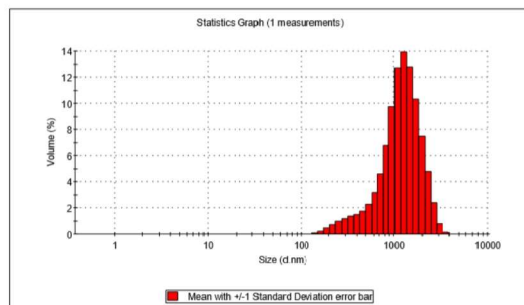
File Name: 20171023.dts

SOP Name: mansettings.dat

Measurement Date and Time: 19 July 2018

Z-Average (nm): 495,6995 **Derived Count Rate (kcps): 579,12605130...**
Standard Deviation (nm): 0 **Standard Deviation (kcp... 0**
%Std Deviation: 0 **%Std Deviation: 0**
Variance: 0 **Variance: 0**

Size d.nm	Mean Volume %	Std Dev Volume %	Size d.nm	Mean Volume %	Std Dev Volume %	Size d.nm	Mean Volume %	Std Dev Volume %	Size d.nm	Mean Volume %	Std Dev Volume %
0.4000	0.0	0.0	5.615	0.0	0.0	78.82	0.0	0.0	1108	12.7	12.7
0.4832	0.0	0.0	6.503	0.0	0.0	91.28	0.0	0.0	1281	13.6	13.6
0.5395	0.0	0.0	7.531	0.0	0.0	105.7	0.0	0.0	1454	12.8	12.8
0.6213	0.0	0.0	8.721	0.0	0.0	122.4	0.0	0.0	1718	10.3	10.3
0.7195	0.0	0.0	10.10	0.0	0.0	141.8	0.0	0.0	1990	7.5	7.5
0.8332	0.0	0.0	11.70	0.0	0.0	164.2	0.2	0.2	2305	4.8	4.8
0.9549	0.0	0.0	13.54	0.0	0.0	195.1	0.5	0.5	2899	2.4	2.4
1.117	0.0	0.0	15.69	0.0	0.0	220.2	0.7	0.7	3091	0.8	0.8
1.284	0.0	0.0	18.17	0.0	0.0	255.0	1.0	1.0	3580	0.1	0.1
1.469	0.0	0.0	21.04	0.0	0.0	295.3	1.2	1.2	4145	0.0	0.0
1.738	0.0	0.0	24.38	0.0	0.0	342.0	1.3	1.3	4801	0.0	0.0
2.010	0.0	0.0	28.21	0.0	0.0	398.1	1.5	1.5	5590	0.0	0.0
2.328	0.0	0.0	32.67	0.0	0.0	458.7	1.8	1.8	6439	0.0	0.0
2.695	0.0	0.0	37.84	0.0	0.0	531.2	2.3	2.3	7459	0.0	0.0
3.122	0.0	0.0	43.82	0.0	0.0	615.1	3.2	3.2	8855	0.0	0.0
3.615	0.0	0.0	50.75	0.0	0.0	712.4	4.6	4.6	1,000e4	0.0	0.0
4.187	0.0	0.0	58.77	0.0	0.0	825.0	6.8	6.8			
4.849	0.0	0.0	68.06	0.0	0.0	955.4	9.8	9.8			



**CARBON BLACK
MATERIAL SAFETY DATA SHEET**

No. 29204, dated 13/12/2014 Has Been Prepared Taking Into Consideration the Official Gazette. Classification of Substances and Mixtures, Labelling and Packaging Regulation is Based On.

Preparation Date : 4.12.17

Regulation No:1

1) SUBSTANCE AND COMPANY DETAILS

1.1. THE PRODUCT NAME

KARBON BLACK

1.2. THE INTENDED USE OF THE PRODUCT

Used as an additive / filler in rubber and plastic products, a colorant/pigment, a carburizer and reducing agent, and refractory additive.

1.3. COMPANY INFO

ERA ENVIRONMENTAL TECHNOLOGIES INC.

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1.4. EMERGENCY TELEPHONE NUMBER UZEM 114

2) HARMFULNESS STATEMENTS

2.1. THE CLASSIFICATION OF SUBSTANCES AND MIXTURES

According to the criteria in OSHA HCS (2012) for classifying hazardous substances, Carbon Black is not classified for any toxicological or eco-toxicological endpoint. As a combustible dust it is designated by OSHA as a hazardous chemical. See 2.2 Labelling and 2.3 "Hazards Not Otherwise Classified (HNOC)".

According to the criteria in GHS (UN) for classifying hazardous substances, Carbon Black is not classified for any physico-chemical, toxicological or eco-toxicological endpoint. See 2.3, "Other hazards which do not result in classification"

According to the criteria in Regulation (EC) No. 1272/2008 (CLP) for classifying hazardous substances, Carbon Black is not classified for any physico-chemical, toxicological or ecotoxicological endpoint.

According to the criteria in Canadian Hazardous Product Legislation known as Worker Hazardous Material Information System (WHMIS) carbon black is not classified for any health hazards. Carbon Black is classified as a Combustible Dust.

2.2. THE LABEL ELEMENTS

P102 KEEP OUT OF THE REACH OF CHILDREN.

P273 AVOID RELEASE TO THE ENVIRONMENT.

P501 DISPOSE OF CONTENTS/CONTAINER TO ...

WARNING: May form explosible dust-air mixture if dispersed.

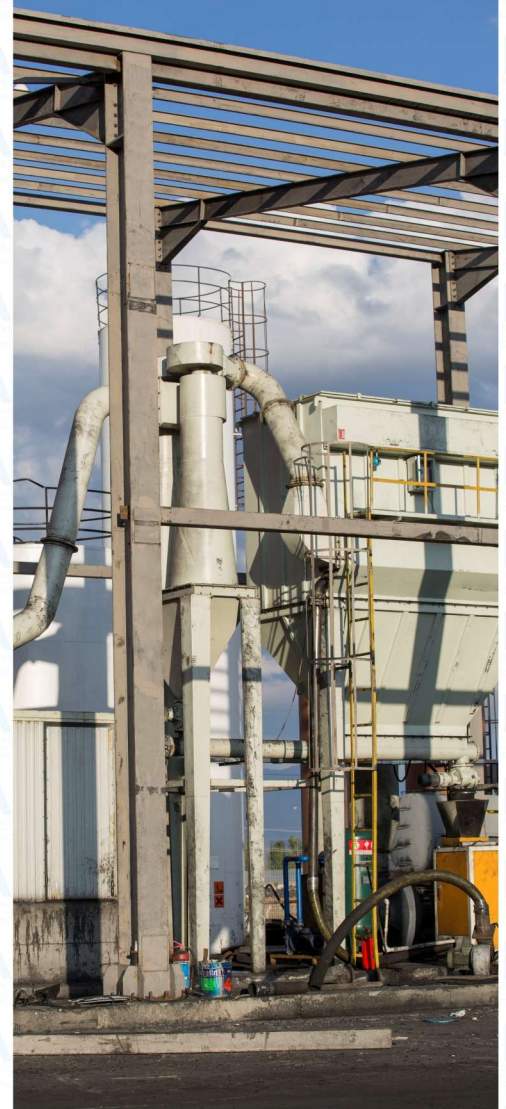
Keep away from all ignition sources including heat, sparks and flame.

Prevent dust accumulations to minimize explosion hazard.

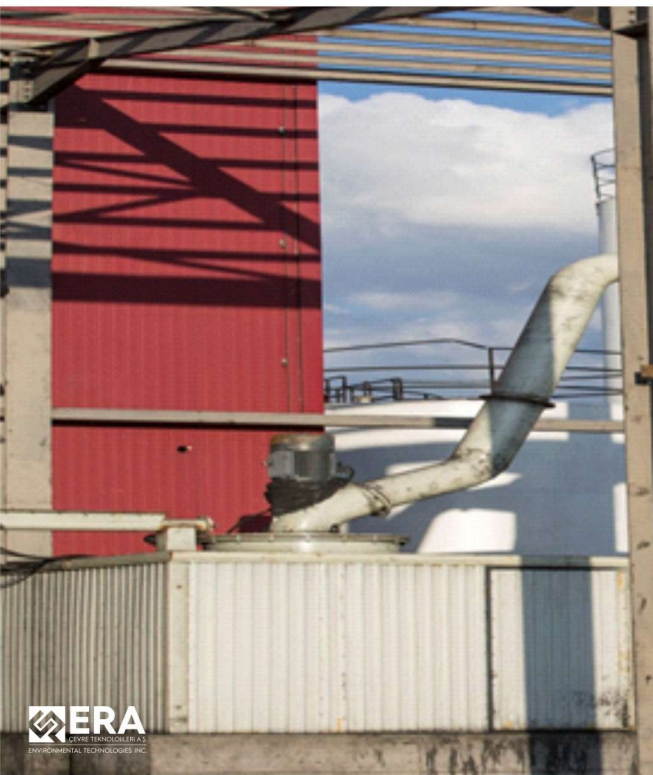
Control dust exposures to below applicable occupational exposure limits

2.3. OTHER LOSSES

prevent dust from forming



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demonstrate its prestige and its work quality and reliability with the deserved certificates. We continue without compromise on our quality.







ERA's greatest goal is to promote sustainable environmental projects for this and future generations.

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ISO 50001

Energy Management System

