

# Management of **Recyclable Material** for **Lebanese Municipalities**

Handbook for the proper preparation, handling,  
processing & selling of **recyclable materials** in **Lebanon**



*Embassy of Italy  
Beirut*



In Cooperation with



# Table Of Contents

## I - Metals

2

- Steel 2
- Aluminum 4
- Copper 6
- Lead 8
- Bronze 10
- Zinc 12

## II - Plastic

14

- PET 14
- HDPE 16
- PVC 18
- LDPE 20
- PP 22
- PS 24

## III - Glass

26

## IV - Paper & Cardboard

28

## V - Textile

32

## VI - Electronic devices

34







# Steel

## DESCRIPTION OF MATERIAL

There are four types of **steel**:

- a) Carbon **steel** is an alloy between iron and carbon. Carbon **steel** with a low carbon content has properties similar to iron. As the carbon content rises, the metal becomes harder and stronger but less ductile and more difficult to weld. This **steel** is prone to corrosion when exposed to air and moisture.
- b) Stainless **steel** is an alloy between iron and chromium. Stainless **steel** does not stain, corrode or rust as easily as carbon steel.
- c) HSLA (high strength low alloy) **steel** alloys are much stronger and tougher than ordinary carbon steels. They are used in cars, trucks, cranes, bridges, and other structures that are designed to handle large amounts of stress, often at very low temperatures.
- d) Tool **Steel**: Tool **steel** refers to a variety of carbon and alloy steels that are particularly well-suited to be made into tools.

All types of **steel** are magnetic.

## RECOGNITION OF MATERIAL

One can usually find steel in the following items:

- Railways
- Heavy equipment (eg. bulldozers)
- Cars components and framework
- Construction-related applications, such as beams,
- bolts, nails, and screws
- Pipe tubes
- Domestic appliances (e.g. washing machines)
- Infrastructure
- Office furniture
- Tools

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Steel** has to be sorted from all the other types of metals and be clean.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM STEEL RECYCLING

**Steel** can be recycled indefinitely into other **steel** products.

## COMPANIES THAT BUY STEEL

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Ohanis Kasarjian	Transformer	Kfarchima (Metn)	05-462462	No
Sharmetal	Transformer	Roundabout Shatila (Beirut)	01-823675 / 6 / 7 / 8	Possible
Abou Ahmad el Achhab	Collector	Taadod Riyak (Baalbeck)	03-201324	No
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 / 03-247790	Possible
Ahmad Khalife	Collector	El Zahrani (Saida)	03-243514 / 07-222106	Possible
Ahmad Chaib	Collector	Toul (Nabatyieh)	03-314608	Yes

\* PLEASE ALWAYS UPDATE THE INFORMATION. REFER TO YOUR LOCAL CHAMBER OF COMMERCE FOR INFORMATION AND SUGGESTIONS.



# Aluminium

## DESCRIPTION OF MATERIAL

**Aluminium** is a soft, durable, malleable metal with appearance ranging from silvery to dull gray, depending on the surface roughness. Aluminum is non-magnetic

## RECOGNITION OF MATERIAL

One can usually find aluminium in the following items:

- Beverage cans
- Foil
- Automotive parts
- Construction (windows, doors, siding, building wire, etc.)
- Cooking utensils
- Transistors and Central Processing Unit (CPU)
- Household wires
- Bicycle chassis

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Aluminum** has to be sorted from all the other types of metals and be clean.
- Some recyclers require to have the **aluminum** pressed, others no.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM ALUMINUM RECYCLING

Aluminum can be recycled indefinitely into other **aluminium** products.

## COMPANIES THAT BUY ALUMINUM

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Ohannes Kasardjian	Transformer	Kfarchima (Metn)	05-462462	No
Sharmetal	Transformer	Roundabout Shatila (Beirut)	01-823675 / 6 / 7 / 8	Possible
Sidem	Transformer	Zouk Mosbeh (Metn)	09-220163 / 176	No
Aluxal	Transformer	Chouwaifat (Beirut)	05-480406 / 7 / 8 / 9	No
Ets. Carlo pour le Commerce et l'Industrie	Transformer	Baouchrieh (Beirut)	01-497100 01-500293 03-888006	No
Yahya el Hariri	Collector	Saida (Saida)	07-732190 03-247790	Possible
Ahmad Khalife	Collector	El Zahrani (Saida)	03-243514 07-222106	Yes
Ahmad Chaib	Collector	Toul (Nabatyieh)	03-314608	Yes

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# Copper

## DESCRIPTION OF MATERIAL

It is a metal with excellent electrical conductivity and is rather supple in its pure state and has a reddish color compared to most metals which are normally silvery white. **Copper** is non-magnetic. It is used as a heat conductor, an electrical conductor, as a building material, and as a constituent of various metal alloys.

**Copper** can be either red (in its pure state) or yellow (as an alloy with high **copper** content).

## RECOGNITION OF MATERIAL

One can usually find copper in the following items:

### Yellow Copper:

- Locks
- Gears
- Bearings
- Ammunition
- Valves
- Plumbing and electrical applications
- Electrical switches
- Architectural structures (roofs, statues, ship building)
- Plumbing
- Doorknob
- Sinks
- Water heating cylinders

### Red Copper:

- Piping (water supply)
- Electronic appliances
- Copper wire
- Generators
- Transformers
- Vacuum tubes

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Copper** has to be sorted from all the other types of metals, and sorted by color (red and yellow **copper**).

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM COPPER RECYCLING

Red and yellow **copper** can be recycled indefinitely into other **copper** products.

## COMPANIES THAT BUY COPPER

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Sharmetal	Transformer	Roundabout Shatila (Beirut)	01-823675 / 6 / 7 / 8	Possible
Ets. Carlo pour le Commerce et l'Industrie	Transformer	Baouchrieh (Beirut)	01-497100 01-500293 03-888006	No
Yahya el Hariri	Collector	Saida (Saida)	03-247790 07-732190	Depends
Ahmad Khalife	Collector	El Zahrani (Saida)	03-243514 07-222106	Yes

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Lead

DESCRIPTION OF MATERIAL

**Lead** has a bluish white color when freshly cut, but tarnishes to a dull grayish color when it is exposed to air. **Lead** is a dense, ductile, very soft, highly malleable metal. **Lead** has a poor electrical conductivity and is non-magnetic. It is highly resistant to corrosion (acids among other products), unlike zinc.

RECOGNITION OF MATERIAL

One can usually find lead in the following items:

- Building construction
- Weights
- Bullets
- Container of corrosive liquids (for example: sulfuric acid)
- Car batteries
- Medical radiation shielding

PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Lead** has to be sorted from all the other types of metal. Car batteries can be sold as is.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM LEAD RECYCLING

**Lead** can be recycled indefinitely into other **lead** products.

COMPANIES THAT BUY LEAD

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Sharmetal	Transformer	Roundabout Shatila (Beirut)	01-823675 / 6 / 7 / 8	Possible
Lebanese Metal Industry	Transformer	Beddawi (Tripoli)	03-281434	No
Garabed Babahekian	Transformer	Borj Hammoud (Beirut)	01-261029 / 854770 / 444064 / 261216	No
Oreibi	Transformer	Taanayel (Zahle)	08-510194	Possible
Abou Ahmad el Achhab	Collector	Taadod Riyak (Baalbeck)	03-201324	Possible
Yahya el Hariri	Collector	Saida (Saida)	07-732190 03-247790	Possible
Ahmad Khalife	Collector	El Zahrani (Saida)	03-243514 07-222106	Possible

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Bronze

DESCRIPTION OF MATERIAL

**Bronze** is another copper alloy, usually tin. **Bronze** will deteriorate rapidly if exposed to moisture and chlorides or sulfides. Unlike steel, **bronze** struck against a hard surface will not generate sparks, so it is used to make tools to be used in explosive atmospheres or in the presence of flammable vapours.

RECOGNITION OF MATERIAL

One can usually find bronze in the following packaging items:

- Clips
- Electrical connectors and springs
- Automobile transmission pilot bearings
- Bearings of small electric motors
- Springs
- Turbines
- Blades
- Hammers
- Wrenches
- Bells

PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Bronze** has to be sorted from all the other types of metals.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM BRONZE RECYCLING

**Bronze** can be recycled indefinitely into other **bronze** products.

COMPANIES THAT BUY BRONZE

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Ohanis Kasarjian	Transformer	Kfarchima (Metn)	05-462462	No
Sharmetal	Transformer	Roundabout Shatila (Beirut)	01-823675 / 6 / 7 / 8	Possible
Yahya el Hariri	Collector	Saida (Saida)	07-732190 03-247790	Possible
Ahmad Khalife	Collector	El Zahrani (Saida)	03-243514 07-222106	Yes

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Zinc

DESCRIPTION OF MATERIAL

**Zinc** is a moderately reactive bluish grey metal that tarnishes in moist air and burns in air with a bright bluish-green flame. **Zinc** is non-magnetic and has a fair conductivity.

RECOGNITION OF MATERIAL

One can usually find zinc in the following items:

- Galvanized steel
- Part of the containers of batteries
- Contemporary **zinc** bars (counters)
- Mould for printing
- Water tank

PREPARATION OF THE MATERIAL  
AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Zinc** has to be sorted from all the other types of metals.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM ZINC RECYCLING

**Zinc** can be recycled indefinitely into other **zinc** products.

COMPANIES THAT BUY ZINC

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Ohanis Kasarjian	Transformer	Kfarchima (Metn)	05-462462	No
Sharmetal	Transformer	Roundabout Shatila (Beirut)	01-823675 / 6 / 7 / 8	Possible
Ets. Carlo pour le Commerce et l'Industrie	Transformer	Baouchrieh	01-497100 01-500293 03-888006	No
Yahya el Hariri	Collector	Saida	07-732190 03-247790	Possible
Ahmad Khalife	Collector	El Zahrani (Saida)	03-243514 07-222106	Possible

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# Polyethylene Terephthalate – PET- PETE- PETP – PET-P



## DESCRIPTION OF MATERIAL

**PET** might appear as transparent, white or opaque. It is strong and solid. It serves as a good barrier to gas and moisture. It is also known more simply as Polyester.

## IDENTIFICATION OF MATERIAL

- All packages and products that have the above symbol are made of **PET**
- **PET**, unlike PS, burns without giving off soot which are the impure black particles resulting in combustion
- **PET** burns without producing flame
- Can withstand normally required autoclaving conditions unlike HDPE.

One can usually find PET in the following items:

- Soft drink
- Water and dressing bottles
- Peanut butter and jam jars
- Shopping Bags
- Film
- Pipes

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **PET** has to be sorted from all the other types of plastics. Some companies allow a 5% contamination but this might decrease the quality of the product.
- It should be clean and well dried before it is sold, otherwise it will create air bubbles during the recycling process.
- Some recyclers require to have the **PET** shredded, others no. It is important to know that shredded **PET** has usually a higher value than unshredded **PET**.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM PET RECYCLING

Pipe, decking, fencing, paneling, gutters, carpet backing, floor tiles and mats, resilient flooring, mud flaps, cassette trays, electrical boxes, cables, traffic cones, garden hose, and mobile home skirting. Packaging, film and sheet, and loose-leaf binders.

## COMPANIES THAT BUY PET

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Baza Plast	Transformer	Ain Baal (Tyre)	07-376376 03-780282	Yes
Issam Kassem Ets. For commerce and industry	Transformer	Timnin and Niha (Baalbeck)	08-911119	Yes
Panda Plast	Transformer	Basta (Beirut)	01-650888 01-650660	Yes
Lebanese Recycling Works	Transformer	Roumieh (Beirut)	01-890383	Depends on loyalty
Lefico	Transformer	Taadod el Ryak (Baalbeck)	08-921222	Possible
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 03-247790	Possible
Somoplast	Transformer	Zahle(Zahle)	08-930718	No
Hussein Daher	Collector	Al Ouzai(Beirut)	03-498663	Yes
Ahmad Chaib	Collector	Toul (Nabatyieh)	03-314608	Yes

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High Density  
Polyethylene – HDPE



DESCRIPTION OF MATERIAL

**HDPE** is more opaque and harder than Polyethylene Terephthalate It can withstand somewhat higher temperatures (120C for short periods and 110C continuously). It is resistant to moisture.

IDENTIFICATION OF MATERIAL

- All packages and products that have the above symbol are made of **HDPE**
- **HDPE**, unlike PET, cannot withstand normally-required autoclaving conditions
- **HDPE**, unlike LDPE, is resistant to solvents (acetone for example)
- **HDPE** burns without giving off soot which are the impure black particles resulting in combustion
- **HDPE** burns without producing a flame

One can usually find **HDPE** in the following packaging items:

- Containers: laundry detergent bottles; milk jugs; fuel tanks for vehicles
- Coax cable inner insulators (dielectric insulating spacer)
- Folding tables and chairs
- Storage sheds
- Plastic retail bags
- Chemical-resistant piping systems
- Heat-resistant fireworks display mortars
- Water pipes for domestic water supply
- Ballistic plates
- Corrosion protection for steel pipelines
- Snowboard rails / boxes
- Natural gas distribution pipe systems
- Bottles suitable for use as refillable bottles
- Enabled manufacture of the modern hula hoop

PREPARATION OF THE MATERIAL  
AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **HDPE** has to be sorted from all other types of plastic. Some companies require that **HDPE** be sorted also by color which might enhance the quality of the product and its price.
- It should be clean and well dried before it is sold.
- Most of the recyclers require to have the **HDPE** shredded. It is important to know that shredded **HDPE** has usually a higher value than unshredded **HDPE**.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM HDPE RECYCLING

Shipping envelopes, garbage can liners, floor tile, compost bins, trash cans

COMPANIES THAT BUY HDPE

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Baza Plast	Transformer	Ain Baal (Tyre)	07-376376 03-780282	Yes
Kamaplast	Transformer	Saida (Saida)	07-222200	No
Mazar Plast	Transformer	Qab Elias (Zahle)	08-500623 03-843929	Possible
Pakplast	Transformer	Zahle (Zahle)	09-224605	No
Publitex Co.	Transformer	Baakline (Shouf)	03-607678	Possible
Rocky Plast	Transformer	Jbeil (Jbeil)	03-634400	No
Somoplast	Transformer	Zahle (Zahle)	08-930718	No
Issam Kassem Ets. For commerce and industry	Transformer	Timnin and Niha	08-911119	Yes
Panda Plast	Transformer	Basta (Beirut)	01-650888 01-650660	Yes
Lebanese Recycling Works	Transformer	Roumieh	01-890383	Depends on loyalty
Alpha Plast Est. trading	Transformer	Bourj el Barajneh (Beirut)	01-471507 03-750290	No
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 03-247790	Possible
Plastic Chem Company	Transformer	El Zahrani (Saida)	07-223535 03-337788	Possible
Hussein Daher	Collector	Al Ouzai (Beirut)	03-498663	Yes

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Polyvinyl Chloride –  
PVC - Vinyl



DESCRIPTION OF MATERIAL

**PVC** is clear, and can be found as a hard material or as a softer more flexible material depending on its composition. It is also known more simply as vinyl.

IDENTIFICATION OF MATERIAL

- All packages and products that have the above symbol are made of **PVC**
- **PVC** burns with a green flame

One can usually find PVC in the following items:

- Juice bottles
- Cling films
- **PVC** piping (PVC pipe plumbing is typically white) for regular water and sewage system
- Electrical cables insulation
- Gramophone records
- Flexible hoses

PREPARATION OF THE MATERIAL  
AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **PVC** has to be sorted from all the other types of plastics and there is no need to sort it by color. should be shredded, no need to clean it but sorted by type and not color.
- The companies do not require the **PVC** to be clean but it is important to know that clean **PVC** might have a higher value than unclean **PVC**.
- **PVC** should be shredded before it is sold to recyclers.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

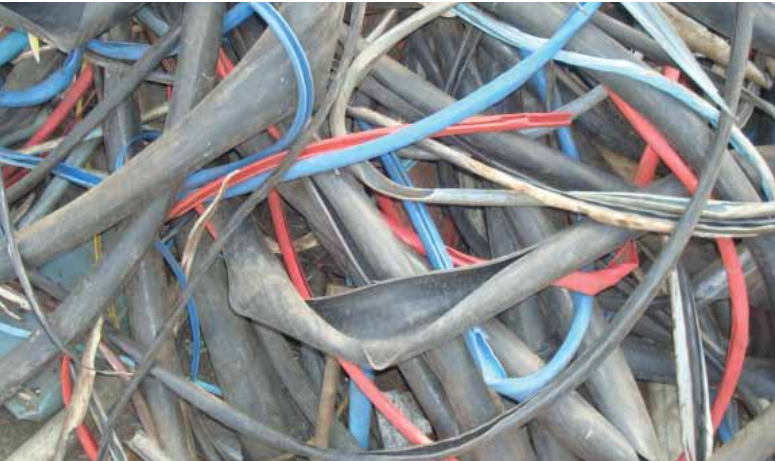
PRODUCTS DERIVED FROM PVC RECYCLING

Automobile applications, such as battery cases, signal lights, battery cables, brooms and brushes, ice scrapers, oil funnels, and bicycle racks. Garden rakes, storage bins, shipping pallets, sheeting, trays.

COMPANIES THAT BUY PVC

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Panda Plast	Transformer	Basta (Beirut)	01-650888 01-650660	Yes
Baza Plast	Transformer	Ain Baal (Tyre)	07-376376 03-780282	Yes
Issam Kassem Ets. For commerce and industry	Transformer	Timnin and Niha (Baalbeck)	08-911119	Yes
Plastic Chem Company P.C.C.	Transformer	El Zahrani (Saida)	07-223535 03-337788	Possible
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 03-247790	Possible

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Low Density  
Polyethylene – LDPE



DESCRIPTION OF MATERIAL

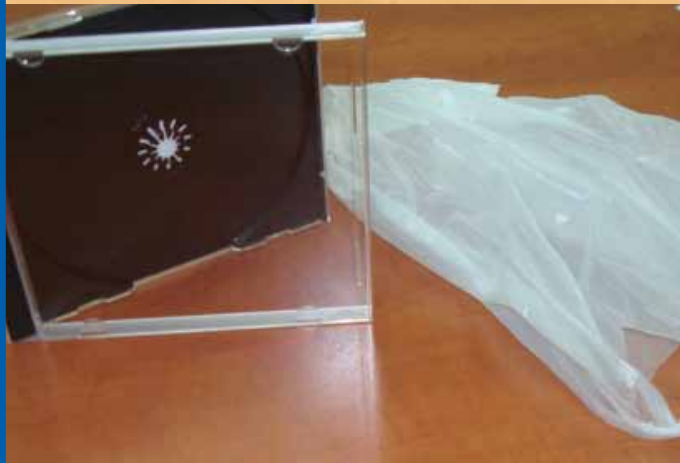
**LDPE** is made in translucent or opaque variations, it is quite flexible, and tough to the degree of being almost unbreakable. It can withstand temperatures of 80 °C continuously and 95 °C for a short time.

IDENTIFICATION OF MATERIAL

- All packages and products that have the above symbol are made of **LDPE**
- **LDPE** has excellent resistance to diluted and concentrated acids, alcohols, bases and esters
- **LDPE**, unlike Polystyrene (PS), burns without giving out soot which are the impure black particles resulting in combustion
- **LDPE** burns without producing a flame
- **LDPE** reacts to strong oxidizing agents
- **LDPE**, unlike High Density Polyethylene (HDPE), reacts to solvents (acetone) and cause swelling.

One can usually find LDPE in the following packaging items:

- Frozen food bags
- Squeezable bottles (mustard for example)
- Flexible container lids
- Plastic bags
- Trays & general purpose containers
- Food storage and laboratory containers
- Corrosion-resistant work surfaces
- Six-pack soda can rings
- Computer components, such as hard drives, screen cards and disk-drives,
- Playground Slides



PREPARATION OF THE MATERIAL  
AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **LDPE** has to be sorted from all the other types of plastics and should not contain Polypropylene. The sorting should also be done by colors.
- It should be clean, without stickers and well dried before it is sold.
- Some recyclers require to have the **LDPE** shredded. Shredded **LDPE** has usually a higher sale value than unshredded **LDPE**.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM LDPE RECYCLING

Shipping envelopes, garbage can liners, floor tile, compost bins, trash cans.

COMPANIES THAT BUY LDPE

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Baza Plast	Transformer	Ain Baal (Tyre)	07-376376 03-780282	Yes
Mazar Plast	Transformer	Qab Elias (Zahle)	08-500623 03-843929	Possible
Plastic Chem Company	Transformer	El Zahrani (Saida)	07-223535 03-337788	Possible
Pakplast	Transformer	Zahle (Zahle)	09-224605	No
Publitex Co.	Transformer	Baakline (Shouf)	03-607678	Possible
Rocky Plast	Transformer	Jbeil (Jbeil)	03-634400	No
Somoplast	Transformer	Zahle (Zahle)	08-930718	No
Panda Plast	Transformer	Basta (Beirut)	01-650888 01-650660	Yes
Issam Kassem Ets. For commerce and industry	Transformer	Timnin and Niha (Baalbeck)	08-911119	Yes
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 03-247790	Possible
Hussein Daher	Collector	Al Ouzai (Beirut)	03-498663	Yes

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# Polypropylene or Polypropene – PP



## DESCRIPTION OF MATERIAL

**PP** can be made both tough and flexible. Polypropylene is rugged, often somewhat stiffer than some other plastics, reasonably economical, and can be made translucent when uncolored but is not as readily made transparent as polystyrene, acrylic or certain other plastics. It can also be made opaque and/or have many kinds of colors through the use of pigments. Polypropylene has very good resistance to fatigue.

## IDENTIFICATION OF MATERIAL

- All packages and products that have the above symbol are made of **PP**
- Like LDPE, **PP** has an excellent resistance (no attack) to diluted and concentrated Acids, Alcohols and Bases.
- **PP**, unlike LDPE, has a very limited resistance to Aromatic and Halogenated Hydrocarbons and Oxidizing Agents (ex: bleach).

### One can usually find PP in the following items:

- Yogurt containers
- Disposable take-away containers
- Disposable cups and containers
- Carpets
- Laboratory equipment
- Loudspeakers
- Clear bags
- Insulation for electrical cables
- Stationary folders
- Automotive parts

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **PP** has to be sorted from all the other types of plastics. It has to be sorted by colour as some companies buy only specific colours of **PP**.
- It should be clean and well dried before it is sold, otherwise it will create air bubbles during the recycling process.
- No shredding is required for **PP**.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM PP RECYCLING

Automobile applications, such as battery cases, signal lights, battery cables, brooms and brushes, ice scrapers, oil funnels and bicycle racks. Garden rakes, storage bins, shipping pallets, sheeting, trays.

## COMPANIES THAT BUY PP

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Alpha Plast Est. trading	Transformer	Bourj el Barajneh (Beirut)	01-471507 03-750290	No
Kamaplast	Transformer	Saida (Saida)	07-222200	No
Mazar Plast	Transformer	Qab Elias (Zahle)	08-500623 03-843929	Possible
Hussein Daher	Collector	Al Ouzai (Beirut)	03-498663	Yes
Pakplast	Transformer	Zahle (Zahle)	09-224605	No
Publitex Co.	Transformer	Baakline (Shouf)	03-607678	Possible
Rocky Plast	Transformer	Jbeil (Jbeil)	03-634400	No
Somoplast	Transformer	Zahle (Zahle)	08-930718	No
Baza Plast	Transformer	Ain Baal (Tyre)	07-376376 03-780282	Yes
Panda Plast	Transformer	Basta (Beirut)	01-650888 01-650660	Yes
Issam Kassem Ets. For commerce and industry	Transformer	Timnin and Niha (Baalbeck)	08-911119	Yes
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 03-247790	Possible

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## Polystyrene – PS – EPS - XPS



### DESCRIPTION OF MATERIAL

It comes in three forms: **polystyrene (PS)**, expanded **polystyrene (EPS)** and extruded **polystyrene (XPS)**. Pure solid **polystyrene (PS)** is a colorless, hard plastic with limited flexibility. It can be cast into molds with fine detail. **Polystyrene** can be transparent or can be made to take on various colours. **Polystyrene's** most common use is as expanded **polystyrene (EPS)**. The solid plastic is expanded into foam through the use of heat, usually steam. Extruded **polystyrene (XPS)**, which is different from expanded **polystyrene (EPS)**, is commonly known as styrofoam and consists in voids that are filled with trapped air.

### IDENTIFICATION OF MATERIAL

- All packages and products that have the above symbol are made of **PS**
- All types of **PS** burn with an orange-yellow flame.
- All types of **PS** gives off soot unlike PET, LDPE and **HDPE**.

One can usually find **PS** in the following items:

- board with an insulating layer of foam in between
- Molded packing material for cushioning fragile equipment inside boxes
- Disposable cups, plates, trays and cutlery
- Disposable take-away containers
- Construction material (structural insulated panel building system: two layers of structural board with an insulating layer of foam in between)
- Nuts packaging
- Architectural models
- Disposable take-away containers

### PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- PS has to be sorted from all the other types of plastics.
- It should be clean. Packaging EPS should be white and clean.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

### PRODUCTS DERIVED FROM PS RECYCLING

Thermal insulation, thermometers cover, light switch plates, vents, desk trays, rulers, license plate frames. Cameras or video cassette casings. Foamed foodservice applications, such as egg shell cartons. Plastic mouldings (wood replacement products). EPS foam protective packaging.

### COMPANIES THAT BUY PS

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Baza Plast	Transformer	Ain Baal (Tyre)	07-376376 03-780282	Yes
Issam Kassem Ets. For commerce and industry	Transformer	Timnin and Niha (Baalbeck)	08-911119	Yes
Panda Plast	Transformer	Basta (Beirut)	01-650888 01-650660	Yes
Kilzi & Co. S.A.R.L.	Transformer	Jdeide - Fanar (Beirut)	01-872133 / 4 / 5 03-896669	Yes
Publitez Co.	Transformer	Baakline (Shouf)	03-607678	Possible
Yahya el Hariri Trading	Collector	Saida (Saida)	07-732190 03-247790	Possible

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Glass

DESCRIPTION OF MATERIAL

**Glass** normally comes in a number of colors. The major types are:

- a) Flint glass (colorless glass)
- b) Green glass
- c) Brown/amber glass

**Glass** makes up a large component of household and industrial waste due to its weight and density. The **glass** component in municipal waste is usually made up of bottles, broken glassware, light bulbs and other items.

RECOGNITION OF MATERIAL

One can usually find copper in the following items:

- Glass bottles
- Glass jars
- Windows

PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Glass** has to be free from metals and plastic, it should be sorted by color.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.



PRODUCTS DERIVED FROM GLASS RECYCLING

**Glass** is an ideal material for recycling and where it is used for new **glass** container manufacture it is virtually infinitely recyclable. Other products can derive from **glass** recycling: ceramic sanitary ware production, abrasive products, artificial grass and other.

COMPANIES THAT BUY GLASS

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Al Zoujaj al Yadawi	Transformer	Sarafand (Saida)	03-906091	No
Soliver	Transformer	Chwaifat (Beirut)	05-803903	No
United Glass Products Co.	Transformer	Baddawi-Industrial City (Tripoli)	06-389107 03-230247	No

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paper  
(white and mixed)

DESCRIPTION OF MATERIAL

White computer **paper** (office **paper**) is high grade **paper** and considered the best in quality for recycling. Mixed **paper** includes office and industry generated waste **paper** (from printing industry), and although it contains significant portions of high grade **paper**, it may also contain cellophane, which constitutes a problem for many recyclers if present in significant amounts.

RECOGNITION OF MATERIAL

Please refer to description of material

PREPARATION OF THE MATERIAL  
AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- White and mixed **paper** should be sorted from each other. Newspaper could be included with mixed **paper** or is sometimes required to be sorted from mixed **paper**. Newspaper should always be sorted from white **paper**. **Paper** should be clean from food products.
- The **papers** should not contain plastic, cellophane, wax, asphalt, humidity or other contaminants.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM PAPER RECYCLING

**Paper** can be recycled into sanitary tissue or recycled **paper** for writing.

COMPANIES THAT BUY PAPER

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
SIPCO	Transformer	Kfarchima (Metn)	05-431048	No
Solicar	Transformer	Wadi Shahrour (Metn)	05-940248	Yes but within Beirut
Unipack/Tissue Mill	Transformer	Halat (Jbeil)	09-477191	Possible
Lebanese Recycling Works	Transformer	Roumieh (Metn)	01-890383	Possible
Mimoza	Transformer	Qaa el Rim (Zahle)	08-803052	Yes
Sicomo	Transformer	Qab Elias (Zahle)	08-500550	Possible
Elie Sawma	Collector	Dekwaneh (Beirut)	01-689105 03-666520	Yes
Hsain Daher	Collector	Beirut (Beirut)	03-498663	Yes

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# Cardboard

## DESCRIPTION OF MATERIAL

**Cardboard** / “brown” paper, which is used for folding cartons, set-up boxes and carded packaging represents the largest source of recycled waste paper.

## RECOGNITION OF MATERIAL

There are two types of cardboard:

- Corrugated “**cardboard**” is a strong, versatile packaging material that is universally accepted for recovery and recycling.
- Paperboard (flat, pressed, stiff paper used in cereal boxes, for example) does not have flutes, is of a lower quality paper, and is often coated.

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- Cardboard should be sorted from other types of paper and clean from organic products.
- The cardboard should not contain plastic, cellophane, wax, asphalt, humidity or other contaminants.
- Some companies require the cardboard baled.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM CARDBOARD RECYCLING

Corrugated **cardboard** can be recycled into recycled paperboard for product packaging (cereal boxes, shoe boxes, etc.) which in turn can be recycled into recycled paper. **Cardboard** cannot be recycled indefinitely.

## COMPANIES THAT BUY CARDBOARD

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Solicar	Transformer	Wadi Shahrour	05-940248	Yes but within Beirut
Unipack/Tissue Mill	Transformer	Halat	09-477191	Possible
Lebanese Recycling Works	Transformer	Roumieh	01-890383	Possible
Mimoza	Transformer	Qaa el Rim	08-803052	Yes
Sicomo	Transformer	Qab Elias	08-500550	Possible
Elie Sawma	Collector	Dekwaneh	01-689105 03-666520	Yes
Hsain Daher	Collector	Beirut	03-498663	Yes

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DESCRIPTION OF MATERIAL

**Textiles** that can still serve their original purpose such as clothes should not be initially discarded as waste and could be provided to the less fortunate through welfare institutions for example. Damaged goods that may not be reused may be transferred to manufacturers of **textiles** or for stuffing furniture who would reprocess them. **Textiles** that end up in commingled waste streams would be too damaged and contaminated, and thus would most likely have to be land filled.

RECOGNITION OF MATERIAL

Please refer to description of material

PREPARATION OF THE MATERIAL  
AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- **Textile** has to be sorted out from all other types of materials.
- **Textile** should be clean, baled, not containing metal (zipper for example) nor leather.
- No shredding is required for **textile**.

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

PRODUCTS DERIVED FROM TEXTILE RECYCLING

Stuffing of mattresses.

COMPANIES THAT BUY TEXTILE

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Charbel Daou	Transformer	Mazraet Yachouh (Metn)	04-913300	No
Elie Daou	Transformer	Mtaileb (Metn)	03-620850	No

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# Electronic Devices

## DESCRIPTION OF MATERIAL

Electronic waste collected in Lebanon includes the following:

- TV and PC monitors
- Computers and computer peripherals (e.g. webcams, keyboards, scanners, printers, USB flash memory, etc)
- Audio and stereo equipment (e.g. MP3 players, DVD, VCR and CD players, etc)
- Corded and wireless communication devices
- Cameras
- Fax and copy machines
- Video game consoles
- Batteries, adaptors, chargers and UPS
- Home appliances such as microwaves, fridges, irons, etc

Electronic waste contains high levels of toxic materials such as lead, barium, cadmium, and mercury that can poison water, air and the food you eat if it is not collected and disposed of correctly.

Electronic products are composed of high value materials such as metals, plastic and glass that should be recycled.

## PREPARATION OF THE MATERIAL AT THE SORTING CENTER

The following procedures will help you in improving your product and thus its selling price:

- No preparation required

DISCUSS WITH YOUR CLIENTS WHICH PROCEDURE IS TO BE FOLLOWED.

## PRODUCTS DERIVED FROM ELECTRONIC WASTE RECYCLING

Eletronic products can be refurbished for reuse or its components can be recycled into raw materials.

## COMPANIES THAT BUY CARDBOARD

Company	Profile	Location (caza)	Telephone	Transportation provided by the company
Beeatoona	Collector	Dora (Beirut)	01-249653	Yes

For additional information regarding collection points of the Beeatoona organization please consult the following website: <http://www.ecycle-me.org/component/Projects/ewaste.asp>

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