

STANDARD OPERATING PROCEDURE
Import and recycling of used/Scrap PET Bottle for the production
of PET flakes

1. Background

- 1.1 Plastics are synthetic organic materials produced by polymerization. There are two main types of plastics: thermoplastics and thermoset polymers. Thermoplastics are those which repeatedly soften and melt so that they can be recycled into new plastics products. Examples are polyethylene, polystyrene and polyvinyl chloride, Poly-ethylene-terephthalate (PET) among others. Thermosets plastic can melt and take shape only once and can not be recycled by repeated heat treatments; Examples are Polyester , Polyurethane foam, Bakelite, Urea-formaldehyde, Melamine , Epoxy .
- 1.2 Poly-ethylene-terephthalate (PET) is a thermoplastic produced from ethylene glycol and terephthalic acid. Globally, there is rapid increase in use of PET based beverage bottles. Virgin PET bottles are widely used for packing carbonated beverages, mineral water, , shampoos etc. Large quantities of used/scrap bottles are thus generated which can be recycled.
- 1.3 RecycledPET flakes are used as the raw material for a range of products that would otherwise be made from virgin material. These include polyester fibres (a base material for the production of clothing, pillows, carpets, etc.), polyester sheets, strapping, or back into PET bottles. Technologies are also available to produce food grade plastic, from used PET bottles by hydrolyzing down to monomers, which are purified and then re-polymerised to make new PET.

2. Import of PET Bottle Scrap

- 2.1 Permission for import of PET Bottle Scrap or used PET bottle flakes may be permitted to actual users having requisite permissions and adequate facilities for recycling of PET Bottle Scrap to produce PET flakes or fibers (to make staple fibre,



pillows, carpets, polyester sheets, strapping etc.) or non-food grade PET bottles.

2.2 Requirements for seeking permission for Import of PET Bottle Scrap

Any person who intends to import used PET bottles scrap (for recycling has to have the following:

2.2.1 Valid consent to operate from concerned State Pollution Control Boards/Pollution Control Committees(SPCBs/PCCs) under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and the Air (Prevention and Control of Pollution) Act 1981 (21 of 1981);

2.2.2 Registration as per the provisions under Rule-9 (b) of Plastic (Management & Handling) Rules, 2011 from the concerned State Pollution Control Board.

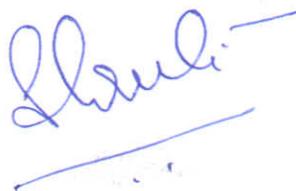
2.2.3 Fire safety certificate from the concerned department/authority.

3. Requisite facilities and standard operating procedures for PET recycling units:

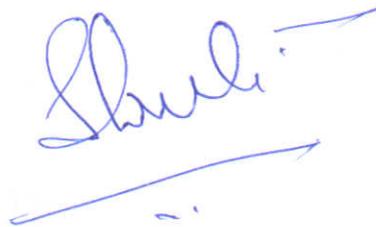
3.1 The raw material i.e. bales of used PET bottle scrap should be received and stored only under a shed with impervious flooring.

3.2 The unit should have a mechanized washing line comprising of conveyor, crusher, wet separation of caps and labels from PET chips/flakes, alkaline/detergent hot washing followed by rinsing with hot water . There should not be any spillage of water during washing cycle and also there has to be a proper system of collecting labels and crushed caps.After washing the chips are conveyed pneumatically to the dryer and then filled in the bags or conveyed directly to the fibre making section.

3.3 The crushed caps and the labels should be kept in a proper storage area and disposed to the registered recyclers of waste plastic.



- 3.4 The unit should have ETP for effluent generated in the washing line. The treated waste water should be recycled within the plant to the extent possible. The sludge from ETP should be stored under covered shed and disposed off as per the conditions stipulated by the SPCB.
- 3.5 The unit should have the adequate arrangements for fire-fighting.
- 3.6 The unit should install adequate pollution control devices so as to comply with norms as stipulated in Consent to Operate.

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