

Recycling of Waste Materials
into Solid Surface

Nebulite Recycling



The Why's of Recycling

Recycling occurs for three basic reasons: altruistic reasons, economic imperatives, and legal considerations.

1. Protecting the environment and conserving resources have become self-evident as being in everyone's general interest.
2. The avoided cost of environmentally acceptable disposal of waste has risen to a level where when combined with the other costs associated with recycling, it now makes economic sense to recycle many materials.
3. In responding to both public demand and a growing lack of alternative waste disposal methods, government is requiring recycling and providing for a wide variety of economic and civil penalties and incentives in order to encourage recycling.

Types of Scheduled Wastes Which Can Be Recycled



Dry Biosludge



Rejected Fume Silica



Spent Catalyst



Ceramic Adsorbent



Spent Catalyst



Byproduct of Carboxylic Acid



Iron Oxide Contaminated Waste



Hardened Urea Formaldehyde



Fly Ash



Iron Dust Waste



Sandblasting Waste



Copper Oxide Contaminated Waste

Microencapsulation Technology

Microencapsulation is a process that stabilizes and changes the physical properties of the wastes into raw materials and use it to manufacture non toxic products. In microencapsulation process, the properties of wastes will be changed and stabilized through mixing of either organic or inorganic binders, pigments, additives, accelerator, catalyst, fillers and other waste materials.

Microencapsulation is divided into two categories namely:

1. First Microencapsulation

It is mainly used for non toxic wastes. It is basically use to stabilize wastes and microencapsulated it into products.

2. Second Microencapsulation

It is mainly used for toxic wastes. It requires all the toxic wastes to go through First Microencapsulation process to change into non toxic raw materials. The non toxic raw materials will then go through the Second Microencapsulation process to produce high quality finished products.

The Advantages of Microencapsulation

- No leaching
- Weather stable
- Ultraviolet stable
- Impact resistance
- Chemical resistance
- High quality products
- Water resistance
- Heat Resistance

Simple Demonstration of Recycling using Microencapsulation



1. Lumpy and dry waste is grinded to powder and use as filler.



2. Grinded waste is mixed with inorganic composite binder.



3. Grinded waste with inorganic composite binder before mixing.



4. Mixing of grinded waste with inorganic composite binder.



5. The grinded waste and inorganic composite binder must be mixed thoroughly.



6. Additives and hardener are added to the mixture.



7. The mixture added with additives and hardener are mixed thoroughly.



8. The mould of the architrave products.



9. Pouring of final mixture into the mould.



10. The finished product.

First Microencapsulation



Waste



Raw Material



Product

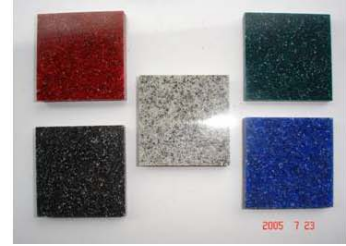
Second Microencapsulation



**First Microencapsulation
(Color Block)**



**Raw Material
(Color Chips)**



Products

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