

Use of soil in Human Life

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Use of soil for buildings

Soil walls

Absorb and release moisture, and keep the comfortable humidity in the room.

Cool the room by water evaporation in summer.

Keep the warm temperature by the porous structure in winter.

Bricks dried by sun

Construction material in Asia and Africa.



Use of soil for dyeing procedure.

Indigo dye

Dyes from grass and tree juice,

Dyeing in mud.

Dyeing of Tatami mat in mud.



Earthenware



Oldest earthenware in
the world
12,000 yBP from Sasebo,
Kyushu, JAPAN

Preserve buried historic items

Stone ware

Earthenware

Bronze / Iron ware

Bones

Relict of houses

Composition of baby powder (%)

| Material | % |
|------------|------|
| Talc | 90.3 |
| Kaolin | 5.0 |
| Zinc oxide | 2.0 |
| Stearate | 2.5 |
| Perfume | 0.25 |

Constituents of Cosmetics

Foundation: Talc, kaolin, Sericite

Lip sticks: Iron oxide

Mud pack: Bentonite, charcoal

Additives in paper

Pyrophyllite

Kaolin

Talc

Additives to increase the weight

Pesticides

Pigment

Paint

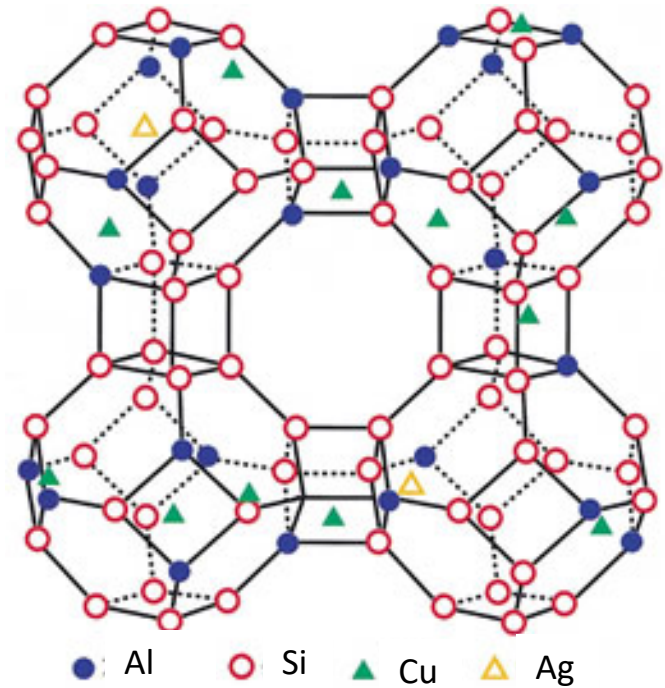
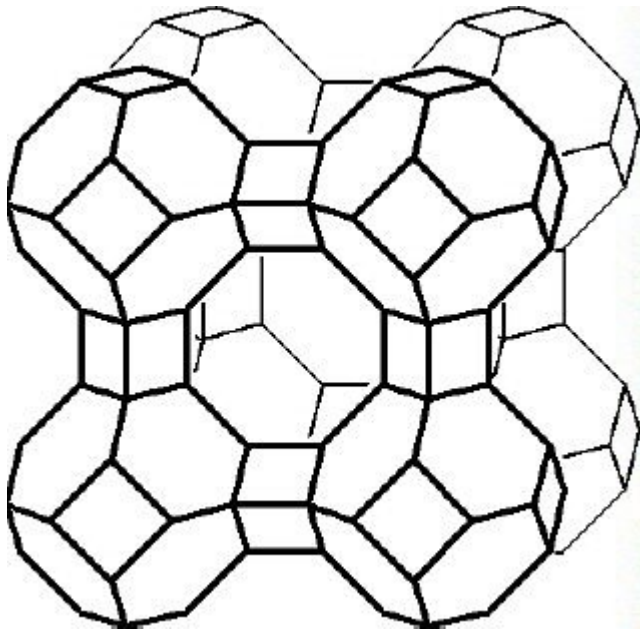
Cement

Use of Zeolite

- High CEC → Soil improvement agent
- Solid acid by saturating with H^+ ion. → Used as catalyst in petroleum purification.
- Molecular sieve → Moisture absorber, desiccant
- 3 dimensional structure, large pore and high CEC
→ added to washing detergent.

Absorb Ca^{2+} and increase the performance of detergent.

Chemical structure of Zeolite



Use of peat

Whiskey brewery (add flavor to malt)

Fuel (House heating, power generation)

Soil for plants (peat moss)

Soil improvement, growth promotor, plant disease repressor

Keep water quality (added to aquarium, suppress the growth of mosses)

Replace material for cotton (sphagnum moss cotton, antibacterial function)

Peat



Soil for medical purpose

- Binding medicine for diarrhea: Adsorbin
 - Gastric medicine for repressing acid.
 - Medicine for constipation
 - Adsorb and neutralize poison
 - Medicine for tympanites
 - Medicine for nettle rash
- ← Bentonite, Acid clay, Kaolinite, etc.

Clays for medicinal use

- Talc, Kaolinite, Bentonite

→ hemostasis, reduce inflammation,
absorption

Kaolin pap :

Kaolin 550g, Boric acid 50g, Glycerin 400g,
Timol 0.5g, Methyl salicylate 2mL,
Peppermint oil 0.5 mL

Bentonite : Basal agent for various
ointments.

Edible soil



Food culture by Ainu people.



Menu of a French restaurant.

Resource of Microbes

Production of antibiotics

Useful microbes

Cultivation of aesthetic sensitivity, material for scientific education

Children's play with soil

Sandpit

Soil ball

Clay work

Growing flower and crop



Soil balls

