

Uses of Coal

Product and By-Products of Coal

For many years, coal was used only for heat and lighting. However the uses of coal have since multiplied.

Coal consists mostly of carbon, which is a necessary ingredient in the production of steel. To obtain carbon in a pure state, coking, or "cooking" the coal, is needed. The iron vessel used for coking vents off hot gases known as "hydrocarbons." These gases are then cooled and vented causing precipitation of small black beads known as tar.

The residue of the gas passes on and is forced through a spray of sulphuric acid. The acid unites with a substance in the gas, and after this acid is treated to another process, a salt precipitate, sulphate of ammonia, is formed.

The remaining gases are subjected to a process called "fractional distillation" and various light oils are precipitated.

Materials that may be extracted from one ton of coal:

Coke (1,300 to 1,500 pounds)

PRODUCT	USES
Lump Coke	metallurgical coke, copper smelting, iron smelting, lead smelting and iron and steel casting.
Calcium Carbide	acetylene chemicals.
Water Gas	heating homes and industry chemical processing.
Industrial	chemical processing, lime burning, beet sugar refining, manufacturing of mineral wool.
Screenings or Breeze	iron-ore agglomeration, chemical processing, steam generation.

Coal Tar (8 to 10 gallons)

Tar Coal	carbolic acids, pharmaceuticals, cresole, lysol, photo developer, plastics, phenols, detergents, drugs, dyes, food preservatives, perfumes, rubber chemicals, weed killer.
Tar Bases	pyridine bases, antiseptics, disinfectants, paint thinner, pyridine, clothes water proofing, sulfa drugs, synthetic vitamins.
Napthaline	insecticides, fungicides, plastic dolls, explosives, moth balls, synthetic fibres.
Heavy Oil	dyes, embalming fluid, laxatives, wood preservatives.
Pitch	electrodes, insulating, paving, roofing, storage batteries, water proofing.

Light Oil

Benzene	synthetic fibres, nylon, aniline dyes, food preservatives, motor fuel, plastics, synthetic rubber, tanning fluids.
Toluene	antiseptics, fingernail polish, printing ink, saccharine, TNT explosives, aviation gas, detergents.
Xylene	motor fuel, gasoline solvents, herbicides.
Solvent Naptha	rubber solvent, electrical - insulation, linoleum, varnish.

Ammonia (5 to 6 pounds)	
Ammonium Sulfate	fertilizers, chemicals.
Ammonia Liquor	fertilizers, explosives, household ammonia, refrigerant, nitric acid.
Diammonium Phosphate	fertilizer, fire retardant.
Coal Gas (9,500 to 11,500 cubic feet)	
Heating Purposes	Homes, industry.
Sulphur	fungicides, insecticides, sulphuric acid.
Cyanogen	cotton finishing, dyes.