Properties produced when the chemical is broken down

Properties of DDT C14H9Cl5 Molar mass: 354. 48 g/molMelting Point: 108. 5 °CBoiling Point: 260 °CDensity: 0. 99 g/cm3Colourless, tasteless, nearly odorless crystalline solid. Non polar molecule, therefore hydrophobic.

Because it is a non polar molecule, London Dispersion Forces are the only intermolecular forces present. Inorganic molecule, must be synthesizedCovalent bonds between atomsFigure 1. 2D diagram of DDT with hybridizations, bond angles and functional groupsDDT and its EffectsDichlorodiphenyltrichloroethane (DDT) was a commonly-used pesticide for insect control in agriculture. Canada banned the use of DDT in 1972 because of its impact on humans and wildlife. However, there still remain some countries that use it. Unfortunately, DDT and the metabolites that it produces tend to remain in the environment as well as in animal tissues for long periods of time. The most common route of exposure to the chemical is through food. Metabolites of DDT are produced when the chemical is broken down by the body.

These metabolites include DDE, DDD4, and DDA5. DDT and DDE collect in the body’s fatty tissues, but are not known to be toxic while stored there. However, when fat stores are used up, DDT and its metabolites are released into the blood, where they can have a negative effect on health. Because DDT bioaccumulates, primary predators (ie. humans) end up being delivered the highest dose. DDT and its related chemicals have also been found to be carcinogenic because of their mutagenic properties.

DDT and DDE concentrate in milk fat, and can therefore pose a greater threat to vulnerable, breastfeeding infants. As an insecticide, DDT inhibits

neuronal repolarization. This alters the ability of certain types of ions to enter or exit the cell, and can therefore starve the cell of certain nutrients, and/or inhibit it from performing its function. This mechanism manifests in humans with DDT poisoning. Today, DDT is only used in developing countries, and to control malaria carrying mosquitoes.

Malaria kills more than 800, 000 people every year, and DDT has been shown to be an effective insecticide to control the disease around the world. The use of DDT in the 50s and 60s saved an estimated 500 million lives by 1970. Although DDT is no longer commonly used, it still impacts the environment due to its slow breakdown and accumulation through the food chain. It is very persistent in the environment, as pesticides such as DDT have an extremely long potency period. DDT has been associated with egg shell thinning of many species of birds. This results in a decline in reproductive output, and ultimately puts the species and its predators at risk.

Also, because of bioaccumulation, animals high on the food chain that have large fatty tissues, such as whales and dolphins, store and accumulate a concentrated amount of DDT over time. Aquatic animals are at high risk of DDT poisoning and it has proven to affect many systems within their bodies, such as the heart and brain. It has also been linked to raised levels of endocrine (hormone) disrupting chemicals in alligator tissue, which affects reproduction. Malaria and poverty are part of a vicious cycle which hinders economic development in poorer countries.

Poor countries are most affected by the disease because of low resources and socio-economic instability, which makes efficient malaria control activities difficult. Poor health reduces productivity, which negatively impacts income and the economy. These countries are often agricultural communities.

This field of work is greatly affected by poor health and a loss in productivity. The cycle of poverty and poor health, often due to malaria, helps to keep poor countries poor.