

SRI TRIDANDI DEV GOVT. DEGREE COLLEGE
SHAHAPUR

Sub! - Chemistry SEM 3 - MTC-3

USE OF ALKANES commercially

Use of alkanes :- Alkanes are commercially used as primary energy source, chemical feedstocks and industrial solvents derived mainly from Petroleum and natural gas. So it can be used as:-

① Fuels and energy:- (C_1-C_4) :- Methane is the chief component of Natural gas used for electricity generation, heating and cooking. Propane and butane are compressed into liquefied Petroleum gas (LPG) for portable heating, cooking and vehicle fuel.

Liquid Alkanes (C_5-C_{18}) - fractions like Petrol (gasoline), kerosene and diesel are composed of medium-chain alkane utilized globally for internal combustion engines and transport.

(2) Industrial Solvent and Lubricants:-

Solvents ($C_6 - C_8$) - Liquid alkanes like hexane serve as non-polar industrial solvents for extracting vegetable oils, cleaning machinery and formulating paints.

Lubricants and waxes (C_{17} and higher) - High-molecular weight alkanes form heavy mineral oils and greases that reduce mechanical ~~fric~~ friction. Solid paraffine waxes are used for candle, polishes and water-proof coating. Very heavy residue like asphalt/tar are applied for road surfacing.

(3) Chemical Feedstocks:- (Petrochemicals) - Alkanes undergo cracking and catalytic oxidation to manufacture crucial industrial intermediates, including alcohols, aldehyde and carboxylic acid. Derivatives, halogenated compounds, like CCl_4 and chloroform and raw materials used to manufacture carbon black for printing inks and tires.