

Lubritherm[®] Fluid biodegrades oils/hydrocarbons and eliminates contaminants -fast.

Lubritherm[®] All-Temp Hydraulic Fluid exhibits an exclusive biodegradation stimulation capability. Extensive lab and field testing indicates that it acts like a synthetic enzyme catalyst, without the limitations of temperature and pH associated with biological enzymes¹.

Lubritherm quickly catalyzes the degradation of oils and hydrocarbons without itself being depleted or requiring change-out of the initial fluid charge; validated by twelve years of successful field operations.

Lubritherm Hydraulic Fluid is originally approved under the Environment Canada Environmental Choice Program, as environmentally safe.

Benefits of Lubritherm Hydraulic Fluid:

- ◆ Simpler and less intensive initial hydraulic system change-over from mineral or vegetable oils to Lubritherm Hydraulic Fluid.
- ◆ Service life up to 10 years. Lubritherm does not require to be changed out under normal operating conditions within LubeCorp's recommended pressure and temperature zones.
- ◆ Maintains hydraulic fluid integrity over many years of operation by eradicating ingressed contaminants through synthetic enzyme bioremediation.
- ◆ Lubritherm is factory filtered to one micron in size, which provides exceptional fluid cleanliness for demanding applications.
 - a. Micro-sizing is done by utilising reduction chemistry on the monomolecular matrix.
 - b. Lubritherm has an exclusive flatted matrix molecular arrangement, wherein the various chemical molecules form a covalent bond matrix, laced together.

NOTES:

The major metabolic pathways of hydrocarbon biodegradation are well known. The initial steps in the biodegradation of hydrocarbons by bacteria and fungi involve the oxidation of the substrate by oxygenases², for which molecular oxygen O₂ is required (the substrate being alkanes, oils, fats, and other hydrocarbons; the O₂ is dissolved air in the water or solution). Lubritherm enables the combination of oxygen O₂ at the molecular level with the substrate, triggering the subsequent conversion of alkanes, etc. to carboxylic acids that are further biodegraded via β-oxidation³ to a harmless reduction of carbon dioxide, water, and a tiny amount of cell biomass which is mostly innocuous protein.

¹Biological enzymes are catalysts which act in a narrow operating range of temperature and pH. When these enzymes catalyze a redox reaction they are classified as oxygenases².

²Oxygenases is defined as: Enzymes that oxidize a substrate by transferring the oxygen from molecular oxygen O₂ to the substrate; that catalyze reactions in which O₂ is introduced into an acceptor molecule.

³β-oxidation is the biochemical process by which alkanes, oils, fats, and other hydrocarbons are broken down and metabolized so that they can be used as a source of energy in aerobic respiration. It is the oxidative degradation of saturated fatty acids in which two-carbon units are sequentially removed from the molecule with each turn of the cycle.

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Originally Approved by:

