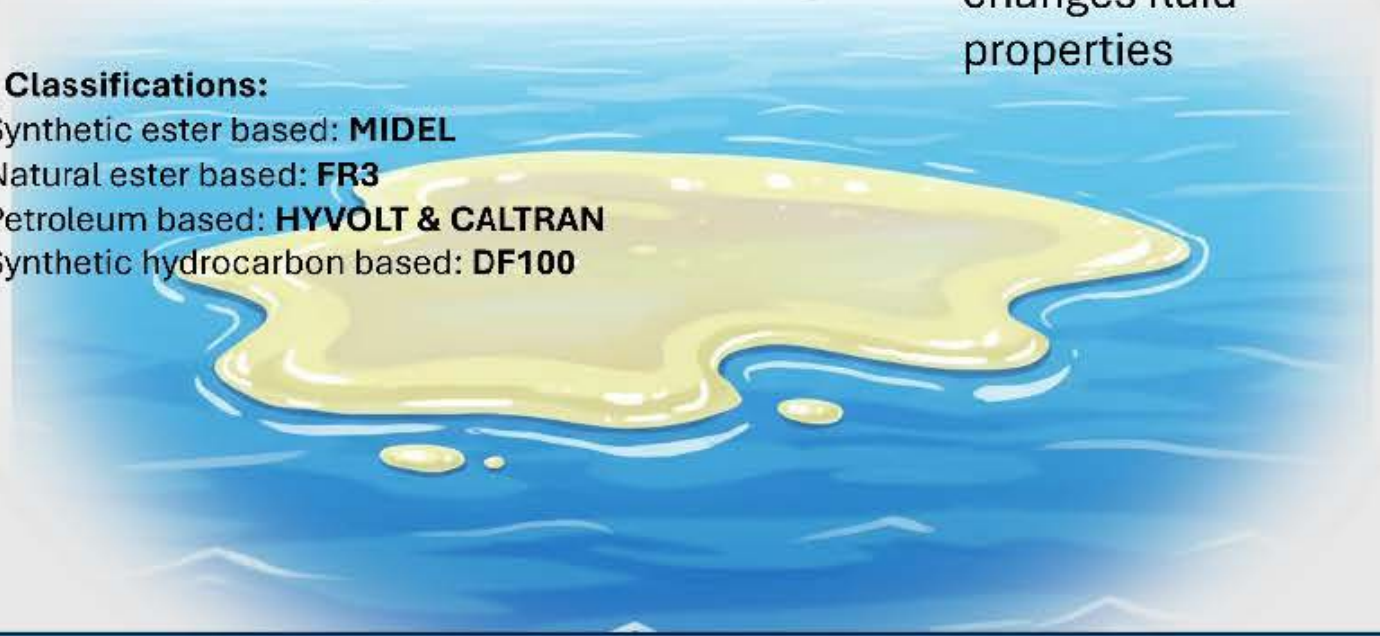
Examination of Physical and Chemical Characteristics of Dielectric Fluids

Dielectric fluids are electrically non-conductive liquids that are becoming increasingly present in the marine environment.

UV exposure causes photo-oxidation and changes fluid properties

Fluid Classifications:

1) Synthetic ester based: **MIDEL**
2) Natural ester based: **FR3**
3) Petroleum based: **HYVOLT & CALTRAN**
4) Synthetic hydrocarbon based: **DF100**



As the number of wind farms increases, the spills of dielectric fluids will increase, so physical and chemical knowledge is needed for spill response. Dielectric fluids are dense with low evaporation and poor solubility and spreading on water. Photo-oxidation by the sun increases density, viscosity, solubility and spreading.

Property Changes with Photo-Oxidation