UNCOMPROMISING CHEMISTRY DESIGN FOR DIAPHRAGM PUMPS

Fluoropolymers and perfluoro elastomers are materials containing fluorine atoms in their chemical structures. Due to their outstanding chemical resistance and their extremely low surface energy – for low material adhesion – VACUUBRAND uses these materials for all media-contacted parts in their chemical diaphragm vacuum pumps.

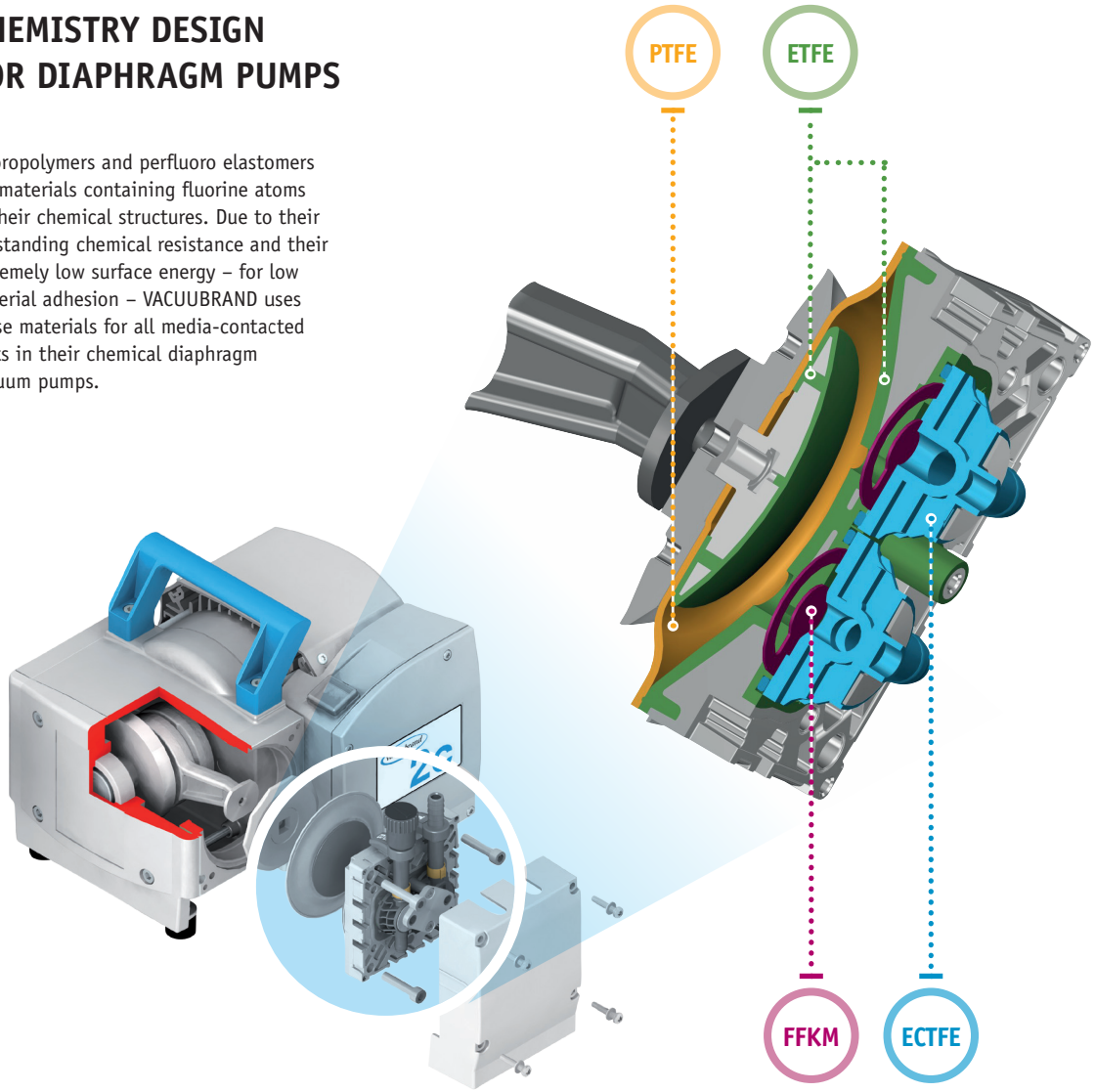

TABLE FOR CHEMISTRY COMPATIBILITY

	PTFE	ETFE/ECTFE	FFKM
Acid amides Dimethylformamide (DMF), Acetamide, Formamide	++	++	++
Acids, dilute or weak Acetic acid, Carbonic acid, Butyric acid	++	++	++
Acids, strong or concentrated Hydrochloric acid, Sulfuric acid, Nitric acid, Trifluoroacetic acid (TFA)	++	++	++
Alcohols, aliphatic Methanol, Ethanol, Butanol	++	++	++
Aldehydes Formaldehyde, Ethanal, Hexanal	++	++	++
Amines N-Methyl-2-pyrrolidone (NMP), Triethylamine	++	++	+
Bases Sodium hydroxide, Potassium hydroxide, Ammonia	++	++	++
Esters Ethyl acetate, Butyl formate, Amyl butyrate	++	++	++
Ethers Diethyl ether, Tetrahydrofurane, Dioxane	++	++	++
Hydrocarbons, aliphatic Pentane, Hexane, Heptane	++	++	++
Hydrocarbons, aromatic Benzene, Toluene, Xylene	++	++	++
Hydrocarbons, halogenated Methyl chloride, Chloroform, Ethylene chloride	++	++	++
Ketones Acetone, Cyclohexanone	++	++*	++
Oxidizing acids, oxidizing agents Ozone, Hydrogen peroxide, Chlorine	++	+	++
Sulfoxides Dimethyl sulfoxide (DMSO)	++	++	++

PTFE: Polytetrafluoroethylene
ETFE: Ethylene tetrafluoroethylene
ECTFE: Ethylene chlorotrifluoroethylene
FFKM: Perfluoro elastomer

++ excellent chemical resistance
\+ good to limited chemical resistance
– poor chemical resistance
** for some solvents '+'*