

Max. continuous working temperatures °C and temperature ranges for materials, within fluid power fluids

Material	Continuous material service temperature range °C	Intermittent material service temperature range °C	Service Fluids									Service Fluids											
			Fluids based on mineral oils				Greases		Fuels			Fire-resistant hydraulic fluids					Environmentally acceptable fluids				Other service fluids		
			Motor oils	Hypoid gear oils	Automatic transmission fluid	ISO 6743-4 Hydraulic oils (HL, HM, HV)	Mineral oil based greases	Silicon based greases	Diesel fuel	Fuel for gasoline/petrol engines - normal	Fuel for gasoline/petrol engines - super	ISO 6743-4 HFA-Fluids (5/95 waterbased)	ISO 6743-4 HFB-Fluids (60/40 invert emulsion)	ISO 6743-4 HFC-Fluids (water glycol)	ISO 6743-4 HFD-Fluids (phosphate ester ALKYL (Aerol))	ISO 6743-4 HFD-Fluids (phosphate ester ARYL (Ind.))	ISO 6743-4 HETG fluids (Vegetable oil based)	ISO 6743-4 HEES fluids (Synthetic ester based)	ISO 6743-4 HEPG fluids (Synthetic glycol based)	ISO 6743-4 HEPR fluids (Synthetic hydrocarbons)	Water	Air	Brake fluids
			+150 -40	+150 -40	+160 -50	+100 -30	+100 -30	+250 -50				+60 +5	+60 +5	+60 -30	+100 -50	+150 -0	+60 -10	+100 -40	+100 -50	+150 -50	+60 (1) -5	+200 +2	+130 -50
Maximum continuous service temperature in fluids °C												Maximum continuous service temperature in fluids °C											
NBR 70 IRHD NBR 90 IRHD Nitrile (medium)	+ 100 - 30	+ 120 - 30	100	90	100	100	100	100	*	*	*	60	60	60	NS	NS	60	60	60	100	80	100	NS
FKM 75 IRHD FKM 90 IRHD Fluoro-elastomer	+ 200 - 20	+ 250 - 20	150	150	160	100	100	200	150	150	150	60	60	NS	NS	150	60	100	80	150	100	200	NS
EPDM 70 IRHD EPDM 80 IRHD	+ 120 - 50	+ 150 - 50	NS	NS	NS	NS	NS	120	NS	NS	NS	NS	NS	60	80	80	NS	NS	NS	NS	120	120	120
VMQ 70 IRHD Silicone	+ 200 - 55	+ 250 - 55	*	*	*	*	100	*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*	100	200	80
HNBR 75 IRHD Hydrogenated nitrile	+ 130 - 30	+ 150 - 30	130	110	130	100	100	130	*	*	*	60	60	60	NS	NS	60	60	80	130	130	130	NS
IIR Butyl	+ 120 - 40	+ 140 - 40	NS	NS	NS	NS	NS	120	NS	NS	NS	NS	NS	60	100	120	NS	NS	NS	NS	120	120	80
FFKM Perfluoro-elastomer	+300 +200 +40 -20		150	150	160	100	100	200	150	150	150	60	60	60	100	150	60	100	100	150	150	200	130
AU Polyester PU	+ 100 - 30	+ 110 - 30	100	100	100	100	100	100	60	60	60	40	40	NS	NS	NS	60	60	60	100	40	40	NS
EU Polyether PU	+ 100 - 40	+ 110 - 45	100	100	100	100	100	100	60	60	60	60	60	40	NS	NS	60	80	60	100	60	80	NS
Polyester- Elastomer	+ 100 - 40	+ 120 - 40	100	100	100	100	100	100	60	60	60	60	60	NS	NS	NS	60	80	60	100	60	80	NS
PA Polyamide	+ 100 - 40	+ 120 - 40	100	100	100	100	100	100	100	100	100	60	60	60	100	100	60	100	100	100	60	80	80
POM Acetal	+ 100 - 45	+ 120 - 40	100	100	100	100	100	100	100	100	100	60	60	60	100	100	60	100	100	100	80	80	80
PPS Polyphenylene sulphide	+ 200 - 40	+ 200 - 40	150	150	160	100	100	200	150	150	150	60	60	60	100	150	60	100	100	150	150	200	130
PTFE Polytetra-fluoroethylene	+ 200 - 200	+ 200 - 200	150	150	160	100	100	200	150	150	150	60	60	60	100	150	60	100	100	150	150	200	130
Thermosetting polyester resin	+ 200 - 200	+ 130 - 200	100	100	100	100	100	100	100	100	100	60	60	40	100	100	60	100	100	100	80	100	NS
PEEK Polyether-etherketone	+ 250 - 65	+ 300 - 65	150	150	160	100	100	250	150	150	150	60	60	60	100	150	60	100	100	150	150	200	130

In view of the variations in formulation of both oils and polymers, the compatibility of all combinations should be confirmed by testing and field service performance for each application. [1] Temperature range for water in fluid power applications