Hallite Seals

Materials & fluid compatibility

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

			SERVICE FLUIDS								
			Fluids based on mineral oils				Greases		Fuels		
Material	Continuous material service temperature range °C	Intermittent material service temperature range °C	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
Temperature range for fluid °C			+ 150 - 40	+ 150 - 40	+ 160 - 50	+ 100 - 30	+ 100 - 30	+ 250 - 50			
			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	*	*	*
FKM 75 IRHD FKM 90 IRHD Fluoro-elastomer	+ 200 - 20	+ 250 - 20	150	150	160	100	100	200	150	150	150
EPDM 70 IRHD EPDM 80 IRHD	+ 120 - 50	+ 150 - 50	NS	NS	NS	NS	NS	120	NS	NS	NS
VMQ 70 IRHD Silicone	+ 200 - 55	+ 250 - 55	*	*	*	*	100	*	NS	NS	NS
HNBR 75 IRHD Hydrogenated nitrile	+ 130 - 30	+ 150 - 30	130	110	130	100	100	130	*	*	*
IIR Butyl	+ 120 - 40	+ 140 - 40	NS	NS	NS	NS	NS	120	NS	NS	NS
FFKM Perfluoro-elastomer	+300 +200 +40 -20		150	150	160	100	100	200	150	150	150
AU Polyester PU	+ 100 - 30	+ 110 - 30	100	100	100	100	100	100	60	60	60
EU Polyether PU	+ 100 - 40	+ 110 - 45	100	100	100	100	100	100	60	60	60
Polyester elastomer	+ 100 - 40	+ 120 - 40	100	100	100	100	100	100	60	60	60
PA Polyamide	+ 100 - 40	+ 120 - 40	100	100	100	100	100	100	100	100	100
POM Acetal	+ 100 - 45	+ 120 - 45	100	100	100	100	100	100	100	100	100
PPS Polyphenylene sulphide	+ 200 - 40	+ 200 - 40	150	150	160	100	100	200	150	150	150
PTFE Polytetra-fluoroethylene	+ 200 - 200	+ 200 - 200	150	150	160	100	100	200	150	150	150
Thermosetting polyester resin	+ 100 - 50	+ 130 - 200	100	100	100	100	100	100	100	100	100
PEEK Polyether-etherketone	+ 250 - 65	+ 300 - 65	150	150	160	100	100	250	150	150	150

* Denotes that values vary greatly for individual elastomers within this group NS Denotes that the elastomer is not suitable

The work of the BFPA technical working group 'TC16/WG8'in the compilation of this table is acknowledged.

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Materials & fluid compatibility

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

SERVICE FLUIDS											
Fire-resistant hydraulic fluids					Environmentally acceptable fluids				Other service fluids		
ISO 6743-4 HFA fluids (5/95 water based)	ISO 6743-4 HFB fluids (60/40 invert emulsion)	ISO 6743-4 HFC fluids (water glycol)	ISO 6743-4 HFDR fluids (phosphate ester ALKYL (aero))	ISO 6743-4 HFDR 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
+ 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											
60	60	60	NS	NS	60	60	60	100	80	100	NS
60	60	NS	NS	150	60	100	80	150	100	200	NS
NS	NS	60	80	80	NS	NS	NS	NS	120	120	120
NS	NS	NS	NS	NS	NS	NS	NS	*	100	200	80
60	60	60	NS	NS	60	60	80	130	130	130	NS
NS	NS	60	100	120	NS	NS	NS	NS	120	120	80
60	60	60	100	150	60	100	100	150	150	200	130
40	40	NS	NS	NS	60	60	60	100	40	40	NS
60	60	40	NS	NS	60	80	60	100	60	80	NS
60	60	NS	NS	NS	60	80	60	100	60	80	NS
60	60	60	100	100	60	100	100	100	60	80	80
60	60	60	100	100	60	100	100	100	80	80	80
60	60	60	100	150	60	100	100	150	150	200	130
60	60	60	100	150	60	100	100	150	150	200	130
60	60	40	100	100	60	100	100	100	80	100	NS
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.