

CARGILLE IMMERSION OIL SPECIFICATIONS

STANDARD OILS

Type of Oil:		Type A	Type B	Type 300
Catalog No.:		16482	16484	16252
Refractive Index @ 23° C:				
F Line (4861 Å)		1.5239	1.5236	1.5238
e Line (5461 Å)		1.5180	1.5180	1.5180
D Line (5893 Å)		1.5150	1.5150	1.5150
C Line (6563 Å)		1.5114	1.5115	1.5116
Dispersion:				
	$n_F - n_C$:	0.0125	0.0119	0.0123
	Abbe V_D :	41.3	43.2	41.8
	Abbe V_e :	41.0	42.8	41.5
Temperature Coefficient: (15 - 35° C)				
		-0.00033	-0.00031	-0.00033
Stability:				
(Change in $n_D^{25^\circ C}$	60° C:	0	0	0
after 24 hrs. @ temp.)	100° C:	0	0	0
Fluorescence (1):				
(Ultra-Violet)	Short Wave:	Low	Low	Low
	Long Wave:	Low	Low	Low
Color: (Gardner)				
		1	1	1
Viscosity:				
(Centistokes)	cSt \pm 10% @ 23° C:	150	1250	300
		Low	High	Medium
Density: @ 23° C				
	g/cc:	0.923	0.923	0.923
	(US) lb/gal:	7.70	7.70	7.70
Cloud Point:				
		< -13° C	< -13° C	< -13° C
Flash Point: (Cleveland Open Cup)				
		325° F	325° F	325° F
Neutralization No.:				
	(mg KOH/g)	0.01 max	0.01 max	0.01 max

(1) Relative to Cedarwood Oil

SPECIAL IMMERSION OILS

Type of Oil:		Type 37**	Type NVH	Type OVH
Catalog No.:		16237	16485	16487
Refractive Index @ 23° C:				
F Line (4861 Å)		1.5238	1.5230	1.5230
e Line (5461 Å)		1.5180	1.5178	1.5178
D Line (5893 Å)		1.5150	1.5150	1.5150
C Line (6563 Å)		1.5115	1.5118	1.5118
Dispersion:				
	$n_F - n_C$:	0.0123	0.0113	0.0111
	Abbe V_D :	42.0	45.7	46.3
	Abbe V_e :	41.7	45.4	46.0
Temperature Coefficient: (15 - 35° C)				
		-0.00035	-0.00034	-0.00034
Stability:				
(Change in $n_D^{25°C}$	60° C:	0	0	0
after 24 hrs. @ temp.)	100° C:	0	0	0
Fluorescence (1):				
(Ultra-Violet)	Short Wave:	Low	Low	Low
	Long Wave:	Low	Low	Low
Color: (Gardner)				
		1	1	< 3
Viscosity:				
(Centistokes)	cSt ± 10% @ 23° C:	1250 High	21000 Very high	46000 Very high
Density: @ 23° C				
	g/cc:	0.917	0.919	0.918
	(US) lb/gal:	7.73	7.67	7.66
Cloud Point:				
		< -13° C	< -13° C	< -13° C
Flash Point: (Cleveland Open Cup)				
		325° F	325° F	325° F
Neutralization No.:				
	(mg KOH/g)	0.01 max	0.01 max	0.04 max

(1) Relative to Cedarwood Oil

** All values standardized at 37° C

FLUORESCENCE MISCROSCOPY IMMERSION OILS

Type of Oil:		Type LDF	Type FF	Type HF
Catalog No.:		16241	16212	16245
Refractive Index @ 23° C:				
F Line (4861 Å)		1.5239	1.4850	1.5234
e Line (5461 Å)		1.5181	1.4811	1.5180
D Line (5893 Å)		1.5150	1.4790	1.5150
C Line (6563 Å)		1.5115	1.4766	1.5117
Dispersion:				
	$n_F - n_C$:	0.0125	0.0084	0.0118
	Abbe V_D :	41.3	57.0	43.8
	Abbe V_e :	41.0	56.5	43.6
Temperature Coefficient: (15 - 35° C)				
		-0.00036	-0.00037	-0.00038
Stability: (Change in $n_D^{25^\circ C}$ after 24 hrs. @ temp.)				
	60° C:	-0.0004	0	+0.0001
	100° C:	-0.0043	0	+0.0006
Fluorescence (1): (Ultra-Violet)				
	Short Wave:	Very low	None	Very low
	Long Wave:	Very low	None	Very low
Color: (Gardner)				
		< 1	< 1	< 1
Viscosity: (Centistokes)				
	cSt ± 10% @ 23° C:	500 Medium	170 Low	700 Medium
Density: @ 23° C				
	g/cc: (US) lb/gal:	0.984 8.21	0.877 7.32	0.9306 7.77
Cloud Point:				
		< -14° C	< -6° C	< 2° C
Flash Point: (Cleveland Open Cup)				
		171° F	420° F	> 340° F
Neutralization No.: (mg KOH/g)				
		< 0.01 max	0.01 max	0.03 max

(1) Relative to Cedarwood Oil