

# Imperial Oil Products and Chemicals Division

Imperial Oil

## Sarnia Sourced Hydrocarbon Fluids at a Glance

### Table of Typical Properties



	Occupational Exposure Limit ppm [2]	Flash Point TCC °C	Distillation			Aniline Point °C	Kauri Butanol Value	Evaporation Rate (nBuAc=100)	Composition - Vol.%			Benzene (vppm)	Specific Gravity @ 15.6°C
			IBP °C	DPT °C	Paraffins				Naphthenes	Aromatics			
<b>Low Boiling Aliphatics</b>													
EXXSOL HP 95 Cyclopentane	482	<-18	34 [1]	60 [1]	---	---	---	<1	99	<0.01	<1	0.748	
EXXSOL Methylpentane	353	<-18	47 [1]	79 [1]	---	28	945	99	1	0.01	<1	0.663	
EXXSOL Hexane	85	<-18	58 [1]	83 [1]	---	28	839	93	7	<0.01	<1	0.673	
IOSOL 1520 Solvent	167	<-18	67	92	68	29	689	94	6	0	<0.1 [6]	0.679	
<b>Conventional Mineral Spirits</b>													
VAR SOL 3139 Solvent	73	44	160	196	55	38	14	50	31	18	5	0.790	
VAR SOL 140 Solvent	56	65	189	207	60	35	6	49	32	19	<1	0.802	
<b>Low Odour Mineral Spirits</b>													
VAR SOL DX 3139 Solvent	97	43	162	193	64	34	15	54	40	6	<1	0.779	
VAR SOL DX 3641 Solvent	93	64	190	208	68	36	6	52	42	6	<1	0.792	
<b>Low Aromatic/Aliphatic Mineral Spirits</b>													
EXXSOL D3135 Solvent	213	43	161	177	67	30	24	55	44	<0.1	<1	0.775	
EXXSOL D40 Solvent	197	43	160	196	67	32	18	51	49	<0.1	<1	0.778	
EXXSOL D60 Solvent	184	64	188	208	71	31	6	51	48	<0.1	<1	0.790	
<b>Isoparaffins</b>													
ISOPAR K Solvent	175	59	183	202	82	27	7	94	6	<0.1	<1	0.762	
ISOPAR M Solvent	152	97 [3]	223	254	88	27	<1	86	14	<0.1	<1	0.793	
<b>Aromatics</b>													
Toluene	50	8	111 [4]	111 [4]	10 [5]	106	288	0.1	0.0	99.9	<0.01 [6]	0.871	
Xylene	46	28	139 [4]	142 [4]	10 [5]	101	76	0.0	0.0	100.0	<0.01 [6]	0.872	
SOLVESSO 200 ULN Solvent	15	112 [3]	238	281	12 [5]	99	<1	0.2 [7]	99.8	<1	0.995		

#### Test Methods

Flash Point (TCC), by ASTM D56 (modified).  
 Distillation, by ASTM D86 (modified).  
 Aniline Point, by ASTM D611 (modified).  
 Kauri Butanol Value, by ASTM D1133 (modified).  
 Evaporation Rate, by ASTM D3539 (modified).

#### Note:

- [1] By ASTM D5399 (modified).
- [3] By ASTM D93 (modified).
- [4] By ASTM D850 (modified).
- [5] Mixed Aniline Point by ASTM D611 (modified)
- [6] Volume %
- [7] Total Saturates

#### Note:

All Hydrocarbon Solvents test +30 Saybolt Colour except SOLVESSO 200 ULN Solvent which tests < 1 ASTM Colour [by ASTM D1500 (modified)].

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Imperial Oil



## Imported Hydrocarbon Fluids at a Glance

### Table of Typical Properties

	Distillation Range °C	Flash Point TCC °C (a)	Specific Gravity 15.6/15.6°C	Aniline Point °C	KB Value	Evaporation Rate n-BuAc=100	Surface Tension @ 25°C dynes/cm	Hildebrand Solubility Parameter	Viscosity @ 25°C cSt	Composition, wt%		
										Cyclo Paraffins	Paraffins	Aromatics
<b>Aromatic Fluids</b>												
<b>SOLVESSO 100 Solvent</b>	160-171	46	0.87	14 (c)	92	27	29	8.6	0.9	---	<1.0	99.3 (d)
<b>SOLVESSO 150 Solvent</b>	184-204	66	0.90	15 (c)	94	9	30	8.6	1.2	---	<1.0	99.5 (d)
<b>SOLVESSO 150 ND Solvent</b>	188-200	65	0.89	14 (c)	89	10	29	8.6	1.2	---	<1.0	99.2 (d)
<b>SOLVESSO 200 Solvent</b>	232-278	104 (b)	1.00	12 (c)	99	<1	36	9	2.7	---	<1.0	99.9 (d)
<b>Dearomatized Aliphatic Fluids</b>												
<b>EXXSOL Heptane Fluid</b>	94-98	-8	0.67	68	29	418	20	7.4	0.6	3	97	<0.005
<b>EXXSOL D80 Fluid</b>	208-234	82 (b)	0.80	76	26	2	26	7.4	2.2	46	54	0.2
<b>EXXSOL D95 Fluid</b>	225-239	96 (b)	0.80	78	26	<1	26	7.3	2.6	44	56	0.2
<b>EXXSOL D110 Fluid</b>	249-267	117 (b)	0.81	83	26	<1	27	7.2	3.5	45	54	0.4
<b>EXXSOL D130 Fluid</b>	279-311	137 (b)	0.83	89	23	<1	28	7.2	6.9	62	38	1.3
<b>Isoparaffins</b>												
<b>ISOPAR C Fluid</b>	98-104	-8	0.70	78	27	383	19	7.2	0.7	1	99	<0.005
<b>ISOPAR E Fluid</b>	115-140	7	0.72	72	29	208	21	7.3	0.9	---	100	<0.005
<b>ISOPAR G Fluid</b>	167-176	44	0.75	84	27	29	23	7.3	1.5	3	97	<0.005
<b>ISOPAR H Fluid</b>	179-188	54	0.76	85	26	16	23	7.3	1.8	4	96	<0.005
<b>ISOPAR L Fluid</b>	189-207	62	0.77	85	27	8	24	7.3	2.0	11	89	<0.005
<b>ISOPAR V Fluid</b>	272-311	129 (b)	0.82	96	23	<1	27	7.2	14.8	46	54	0.1

(a) Tag Closed Cup, ASTM D 56

(d) Volume %

(b) Pensky-Martens Closed Cup ASTM D 93

(c) ASTM D 611 (Mixed Aniline Point)

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## Imported Oxygenated Fluids at a Glance

### Table of Typical Properties



#### ALCOHOLS

Product	Distillation Range °C	Specific Gravity 20/20°C	Viscosity @ 25°C cSt	Vapour Pressure @20°C mmHg	Flash Point TCC (a) °C	Acidity Wt % (max) (c)	Evaporation Rate n-BuAc=100	Pour Point °C	Purity Wt % (min)	Water Content Wt % (max)	Solubility in Water @ 25°C wt%
<b>Alcohols</b>											
Isopropyl Alcohol	82.2 - 82.4	0.786	2.61	47	12	0.001	124	---	99.8	0.1	Infinite
Secondary Butyl Alcohol	99.3 - 100.3	0.808	2.86	13.9	22	0.002	82	---	99.0	0	18.1

Product	Distillation Range °C	Specific Gravity 20/20°C	Viscosity @ 20°C cSt	Vapour Pressure @100°C mmHg	Flash Point TCC (a) °C	Acidity Wt % (c)	Evaporation Rate n-BuAc=100	Pour Point °C	Purity Wt %	Water Content Wt %	Solubility in Water @ 25°C wt%
<b>Higher Alcohols (Branched)</b>											
EXXAL 7 (Isoheptyl Alcohol)	167 - 176	0.826	9.2	78	>60.0	<0.001	---	<-65	>98.0	<0.2	Negligible
EXXAL 8 (Isooctyl Alcohol)	185 - 193	0.833	13	27	>60.0	<0.001	---	<-65	>99.0	<0.1	Negligible
EXXAL 9 (Isononyl Alcohol)	203 - 215	0.836	17	16	>60.0	<0.001	---	<-65	>99.0	<0.1	Negligible
EXXAL 10 (Isodecyl Alcohol)	217 - 224	0.838	21	8	>93.3 (b)	<0.001	---	<-65	>99.0	<0.1	Negligible
EXXAL 12 (Dodecyl Alcohol)	241 - 254	0.844	38	5	>93.3 (b)	<0.002	---	<-65	>98.0	<0.1	Negligible
EXXAL 13 (Tridecyl Alcohol)	256 - 266	0.848	49	3	>93.3 (b)	<0.001	---	<-65	>98.5	<0.1	Negligible

#### KETONES

Product	Distillation Range °C	Specific Gravity 20/20°C	Viscosity @ 25°C cP	Flash Point TCC (a) °C	Acidity Wt % (max) (c)	Evaporation Rate n-BuAc=100	Purity Wt % (min)	Hildebrand Solubility Parameter	Surface Tension @ 25°C dynes/cm	Water Content Wt % (max)	Solubility in Water @ 25°C wt%
<b>Ketones</b>											
Methyl Ethyl Ketone	79-80	0.806	0.47	-4	0.003	380	99.5	9.3	24	0.1	26.3

#### ETHERS

Product	Distillation Range °C	Specific Gravity 20/20°C	Viscosity @ 25°C cSt	Vapour Pressure @20°C mmHg	Flash Point TCC (a) °C	Colour Pt-Co (max)	Water Content Wt % (max)	Purity Wt % (min)
<b>Ethers</b>								
Isopropyl Ether	---	0.725	0.44	118	<-18	10	0.1	99.0

(a) Tag Closed Cup, ASTM D 56

(c) As Acetic Acid

(b) Pensky-Martens Closed Cup, ASTM D93

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## Imported JAYFLEX Plasticizers at a Glance

### Table of Typical Properties

Product	Acidity (a) wt% (max)	Colour Pt-Co (max)	Ester Content wt% (min)	Water Content Wt % (max)	Specific Gravity 20/20°C	Pour Point °C	Viscosity @ 0°C cSt	Viscosity @ 20°C cSt	Viscosity @ 40°C cSt	Viscosity @ 100°C cSt
<b>JAYFLEX Plasticizers</b>										
JAYFLEX 77 (Diisooheptyl Phthalate)	<0.01	15	99.6	<0.1	0.992	-45	170	47	19	3.5
JAYFLEX DIOP (Diisooctyl Phthalate)	<0.01	15	99.6	<0.1	0.984	-45	300	73	26	4.3
JAYFLEX DINP (Diisononyl Phthalate)	<0.01	15	99.6	<0.1	0.974	-39	470	100	33	4.9
JAYFLEX L11P (Di-L-Undecyl Phthalate)	<0.015	20	99.6	<0.1	0.954	-1	N/A	71	27	5.0
JAYFLEX L11P-E (Di-L-Undecyl Phthalate - Electrical Grade)	<0.015	15	99.6	<0.1	0.954	-12	N/A	71	28	5.1
JAYFLEX L711P (Linear Phthalate)	<0.01	15	99.6	<0.1	0.972	-48	204	60	22	4.1
JAYFLEX DIDP (Diisodecyl Phthalate)	<0.01	10	99.6	<0.1	0.967	-42	600	123	38	5.4
JAYFLEX DIDP-E (Diisodecyl Phthalate - Electrical Grade)	<0.01	15	99.6	<0.1	0.968	-42	657	125	39	5.4
JAYFLEX DTD (Ditridecyl Phthalate)	<0.02	25	99.5	<0.1	0.954	-21	2400	360	89	8.5
JAYFLEX L9P (Di-L-Nonyl Phthalate)	<0.01	10	99.6	<0.1	0.970	-48	190	55	22	4.2
JAYFLEX L911P (Di-L-Nonyl, Undecyl Phthalate)	<0.015	20	99.6	<0.1	0.962	-32	220	64	25	4.6
JAYFLEX DINA (Diisononyl Adipate)	0.01	10	99.0	<0.1	0.922	-60	63	24	12	3.2
JAYFLEX DIDA (Diisodecyl Adipate)	0.02 (b)	<0.5 (c)	---	<0.05	0.921 (d)	-63	---	---	14	3.6
JAYFLEX DTD (Ditridecyl Adipate)	0.02 (b)	<0.5 (c)	---	<0.035	0.915 (d)	-57	---	---	27	5.4
JAYFLEX TIOTM (Triisooctyl Trimellitate)	0.02	50	99.0	<0.1	0.991	-29	1700	330	93	9.9
JAYFLEX TINTM (Triisononyl Trimellitate)	0.02	60	99.0	<0.1	0.978	-33	2900	480	130	11.9

(a) Acidity wt% as parent acid

(b) Total Acid Number, mg KOH/g

(c) Colour ASTM

(d) @15.6/15.6°C

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