Your guide to...



TOP-QUALITY
PLASTICIZERS

Here are plasticizers and resin modifiers for any and every resin system!

No matter what the application or performance specification, one or a combination of the plasticizers offered here will do the job. As shown here, you can select from the widest choice of plasticizers available from any single source. They are recommended for use in compounding:

Flexible Film and Sheeting
Adhesives
Lacquers
Sealing Compounds
Paints
Casting Compounds
Extrusions
Plastisols
Fabric & Paper Coatings

YOU CAN DEPEND UPON THESE PRODUCTS' QUALITY AND PERFORMANCE

open once for "Compatibility" guide • open fully for a listing of products and properties

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TOWOLDMON0026229

PHTHALATES

		Dibutyl	Dicyclohexyl	Diethyl	Diisodecyl	Diisooctyl	Dimethyl	Di(n-octyl,-n-decyl)	Dioctyl	Diphenyl	Ditridecyl	Santicizer® 160	Santicizer 165	Santicizer 213	Santicizer 214	Santicizer 215	Santicizer 262	Santicizer 602	Santicizer 603	Santicizer 630	Santicizer 631	Santicizer 632	Santicizer 636	Santicizer 681	Santicizer 683
VINYL TYPE	Polyvinyl Chloride	100	30	I	100	100	I	100	100	80	100	100	100	100	100	100	100	100	100	100	100	100	100	90	100
	Polyvinyl Acetate	100	50	100	I	I	100	I	I	70	I	100	I	10	I	I	40	I	I	I	I	I	I	I	I
	Polyvinyl Butyral	100	50	50	25	15	50	15	15	50	25	100	10	50	20	30	20	25	25	25	25	20	25	5	20
	Polyvinylidene Chloride	75	20	75	10	25	50	25	25	20	10	75	50	25	10	15	25	15	20	25	25	10	25	20	10
	Polystyrene	100	20	100	100	100	100	100	50	70	100	100	100	75	75	100	50	100	100	100	100	75	100	60	75
CELLULOSIC	Nitrocellulose	100	50	100	100	100	60	100	100	80	100	100	100	40	40	40	100	100	100	50	60	40	100	70	40
	Ethyl Cellulose	100	50	100	100	100	100	100	100	30	100	100	100	75	75	100	100	100	100	100	100	75	100	80	75
	Cellulose Acetate	25	I	85	I	I	80	I	I	I	I	10	I	I	I	I	I	I	I	I	I	I	I	I	I
	Cellulose Acetate Butyrate	100	20	100	50	50	100	50	50	20	50	100	50	40	20	40	50	50	40	25	30	20	50	35	20
	Cellulose Acetate Propionate	30	10	100	15	20	100	20	20	10	15	80	50	20	5	I	25	20	40	5	10	5	20	5	5
MISCELLANEOUS THERMOPLASTIC	Chlorinated Rubber	100	20	25	100	100	25	50	33	20	100	80	100	25	25	100	30	100	50	100	100	25	100	100	25
	High Styrene-Butadiene	50	20	25	50	50	20	50	50	20	50	50	50	40	40	40	50	50	50	40	40	40	50	35	40
	Protein Compounds	20	I	20	I	I	20	I	I	I	I	10	I	I	I	I	I	I	I	I	I	I	I	I	I
	Shellac	I	I	5	I	I	5	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Acrylic Type Resins	70	25	100	25	25	100	25	25	25	25	70	25	15	I	20	70	25	25	10	10	I	25	I	I
	Polyamides	25	10	I	20	25	I	25	25	10	20	25	25	I	I	5	20	20	20	I	I	I	20	25	I
THERMOSETTING	Polyester	20	20	10	15	20	5	20	20	20	15	20	20	5	5	5	15	10	15	5	5	5	10	5	5
	Epoxy	25	10	10	I	I	I	I	I	10	I	25	10	I	I	I	15	I	10	I	I	I	I	I	I
	Phenolic	50	25	25	25	25	25	25	25	30	25	50	50	25	25	25	25	25	25	25	25	25	25	25	25
	Alkyd	70	25	25	25	25	25	25	25	25	25	50	50	25	25	20	25	25	25	25	25	25	25	25	25
	Melamine	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	Polyurethane	25	10	15	25	25	15	25	25	10	25	25	25	20	20	20	25	25	25	20	20	20	25	20	20
	Nitrile & Neoprene Rubbers	100	50	100	33	100	100	100	50	50	33	100	50	50	50	40	70	50	50	50	50	50	50	65	50

I = Incompatible Figures = Compatibility, PHR

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Compatibility Guide

ADIPATES			PHOSPHATES					SULFONAMIDES					PHTHALYL GLYCOLLATES			PERMANENT						MISCELLANEOUS				
Diisodecyl	Dioctyl	Di(n-octyl, n-decyl)	Santicizer 140	Santicizer 141	Tributoxyethyl	Tricresyl	Triphenyl	Santicizer 1-H	Santicizer 3	Santicizer 8	Santicizer 9	Santolite® MHP	Santolite MS-80%	Santicizer E-15	Santicizer B-16	Santicizer M-17	Santicizer 405	Santicizer 409	Santicizer 411	Santicizer 480	Santicizer 481	Santicizer 482	Santicizer 483	Aroclor®	HB-40®	Mod-Epox®	Monfar®	Triphenyl Phosphite
50	75	75	100	100	60	100	20	1	1	1	1	15	15	25	100	20	100	100	100	100	100	100	100	35	40	10	10	10
1	1	1	40	50	40	40	80	50	50	100	50	50	50	100	100	100	75	100	75	20	50	100	1	50	1	1	10	1
1	25	1	100	100	50	100	50	50	50	100	50	50	50	100	100	100	40	75	40	30	30	50	15	50	50	1	10	1
10	15	15	75	75	50	75	20	20	25	50	20	25	25	75	75	75	10	25	10	10	10	15	25	50	20	1	10	1
25	100	20	15	50	100	15	20	10	10	20	10	10	10	30	30	30	1	50	1	40	20	1	50	100	100	1	10	1
35	35	35	100	100	100	100	75	75	80	80	50	100	100	100	100	100	100	100	100	100	100	100	100	100	10	1	10	1
100	100	50	70	100	50	70	30	80	60	60	75	75	75	75	75	75	10	33	10	50	75	25	100	75	100	5	15	5
1	1	1	35	20	10	15	35	20	45	90	30	25	25	100	50	100	1	1	1	1	1	1	1	1	1	1	1	1
50	25	25	30	80	25	30	50	40	40	50	25	50	50	100	50	100	100	100	100	70	80	80	50	50	30	5	10	5
1	1	1	40	100	40	40	50	50	50	100	50	50	50	100	50	100	50	10	50	40	40	50	20	10	1	1	1	1
100	100	100	100	100	100	100	50	25	25	50	25	50	50	80	80	100	50	50	50	70	50	50	50	100	100	5	10	5
20	20	20	50	50	50	50	20	25	25	25	25	25	25	50	50	50	15	25	10	30	20	20	40	50	25	1	20	1
1	1	1	20	25	10	30	10	30	30	50	40	25	25	25	40	20	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	25	25	40	60	25	25	10	30	10	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	25	100	25	25	25	25	25	25	25	25	25	50	70	60	1	1	1	10	10	10	50	10	20	1	1	1
25	25	25	25	25	15	25	10	50	50	50	25	50	50	1	20	1	1	1	1	20	15	1	25	25	1	1	10	1
1	1	1	20	20	20	20	10	5	5	10	5	20	20	5	20	5	5	10	5	15	20	10	20	25	1	5	10	1
1	1	1	25	25	25	25	10	20	20	50	50	25	25	25	25	25	1	1	1	1	1	1	1	50	1	100	25	100
25	25	25	50	50	50	50	50	50	50	50	50	50	50	50	50	50	15	25	15	25	15	15	25	25	25	25	25	25
25	50	25	70	70	50	70	50	40	30	25	25	25	25	70	70	70	20	25	20	20	25	20	25	25	15	5	25	0.5
1	1	1	1	1	1	1	1	25	25	50	80	25	25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	15	15	25	25	25	25	10	10	10	20	10	25	25	25	25	25	10	15	10	25	15	10	25	25	15	1	10	1
33	20	33	33	40	50	55	50	50	50	50	50	50	50	50	50	50	25	50	25	25	25	30	50	50	50	25	50	25

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Plasticizer	Molecular Weight	Acidity (max./100 gm max)	Appearance	Color (APHA) (maximum)	Moisture (KF in methanol) (% maximum)	Odor	Refractive Index (at 25°C)	Specific Gravity (at 25°/25°C)	Density (at 25°C) (lb./gal)	Crystalizing Point (°C)
PHTHALATES										
Dibutyl	278.34	* 0.12	* Clear, oily liquid	* 20	* 0.15	* Slight, characteristic	1.4095 to 1.4115	* 1.044 to 1.048	8.72	< -35
Dicyclohexyl	330.41	* 0.12	* White lumps or granules	* 500 (melten)	* 0.1	* Moderate aromatic, slight alcohol, characteristic	—	1.09	—	—
Diethyl	222.11	* 0.12	* Clear, oily liquid	* 10	* 0.15	* Slight, aromatic, mint	1.4990 to 1.5010	* 1.115 to 1.119	9.35	+ 5.2
Diisodecyl	446.65	* 0.12	* Clear, oily liquid	* 50	* 0.10	* Slight, characteristic	1.4794 to 1.4864	* 0.963 to 0.969	8.05	-53 solid, clear gel
Diisooctyl	390.63	* 0.12	* Clear, oily liquid	* 30	* 0.10	* Slight, characteristic, mint	1.4810 to 1.4880	* 0.980 to 0.985	8.21	0%
Dinonyl	376.58	* 0.12	* Clear, oily liquid	* 30	* 0.25	* Slight, aromatic, mint	1.4812 to 1.4862	* 0.970 to 1.982	8.92	0.0 wt. 2°C soln
Di-n-octyl-n-decyl	418 (average)	* 0.01	* Clear, oily liquid	* 50	* 0.10	* Slight, characteristic	* 1.4810 to 1.4860	* 0.9680 to 0.9720	8.1	-30
Dioctyl	390.56	* 0.12	* Clear, oily liquid	* 25	* 0.10	* Slight, characteristic, mint	* 1.4845 to 1.4858	* 0.980 to 0.985	8.21	-50 waxy and gel
Diphenyl	314.31	* 1.20	* Essentially white, fused solid with a slightly yellow to brown cast	* 100 (10wt. 50ml acetone)	0.25	—	1.577 (@ 70°C)	1.20	—	—
Ditridecyl	530	* 0.12	* Clear liquid	* 100	* 0.1	* Clear, characteristic	* 1.4613 to 1.4700	* 0.960 to 0.955	7.93	—
Santicizer® 100	312.36	* 0.1	* Clear, oily liquid	* 40	* 0.15	* Slight, characteristic, mint	* 1.535 to 1.540	* 1.115 to 1.123	9.3	< -35
Santicizer 141	—	* 0.12	* Clear, oily liquid	* 40	* 0.12	* Slight similar to DOP's	* 1.484 to 1.487	* 0.990 to 0.996	8.26	—
Santicizer 210	—	* 0.25	* Clear, oily liquid	* 75	* 0.15	Characteristic, very low	* 1.571 to 1.574	* 1.040 to 1.045	8.68	—
Santicizer 214	—	* 0.15	* Clear, oily liquid	* 100	* 0.15	Characteristic, very low	* 1.481 to 1.486	* 0.964 to 0.956	7.9	—
Santicizer 215	—	* 0.12	* Clear, oily liquid	* 100	* 0.10	Characteristic	* 1.506 to 1.516	* 0.974 to 0.980	8.14	—
Santicizer 261	396.5	* 0.27	* Clear, oily liquid	* 150	* 0.10	—	* 1.519 to 1.523	* 1.045 to 1.057	9.2	< -27.0
Santicizer 267	—	* 0.10	* Clear, oily liquid	* 50	* 0.10	* Characteristic, mild	* 1.482 to 1.486	0.971 to 0.977	8.1	—
Santicizer 278	—	* 0.12	* Clear, oily liquid	* 100	* 0.10	Characteristic	* 1.4673 to 1.4695	* 0.977 to 0.967	8.18	—
Santicizer 430	—	* 0.12	* Clear, oily liquid	* 70	* 0.10	—	* 1.5095 to 1.5150	* 0.987 to 0.994	8.25	—
Santicizer 431	—	* 0.12	* Clear, oily liquid	* 40	* 0.10	—	* 1.4990 to 1.5045	* 0.984 to 0.990	8.22	—
Santicizer 432	—	* 0.12	* Clear, oily liquid	* 40	* 0.15	—	* 1.484 to 1.487	* 0.970 to 0.982	8.15	—
Santicizer 436	—	* 0.12	* Clear, oily liquid	* 75	* 0.10	—	* 1.478 to 1.486	* 0.963 to 0.977	8.11	—
Santicizer 441	—	* 0.20	* Clear, oily liquid	* 40	* 0.10	—	* 1.472 to 1.478	* 0.963 to 0.970	8.05	—
Santicizer 443	—	* 0.12	* Clear, oily liquid	* 40	* 0.10	—	* 1.488 to 1.489	* 0.973 to 0.981	8.06	—
ADIPATES										
Dioctyladipate	466.0	* 0.50	* Clear, oily liquid	* 90	* 0.10	* Mild	* 1.4435 to 1.4529	* 0.962 to 0.973	7.65	< -50
Di-n-octyl-n-decyl-adipate	594 (average)	* 0.05	* Clear, oily liquid	* 50	* 0.10	Characteristic	* 1.444 to 1.450	* 0.914 to 0.927	7.63	-5
Dioctyl	370.54	* 0.25	* Clear, oily liquid	* 25	* 0.10	* Mild	1.441 to 1.448	* 0.921 to 0.927	7.72	< -70
PHOSPHATES										
Tricresyl	368.38	* 0.20	* Clear, oily liquid	* 70	* 0.10	* No foreign odor	1.556	* 1.157 to 1.173	9.7	< -25
Triphenyl	326.31	* 0.06	* White flakes	20 (melten)	—	* Very faint, aromatic, mint	1.550 (@ 50°C)	1.264 (50°/20°C)	10.5	49
Santicizer 140	340.3	* 0.20	* Clear, oily liquid	* 40	* 0.15	* Essentially odorless	1.500 to 1.520	* 1.203 to 1.213	10	< -35
Santicizer 141	362.40	* 0.20	* Clear, oily liquid	* 60	* 0.10	* Slight, sweet	* 1.487 to 1.510	* 1.047 to 1.097	9.1	< -70
Isodecyldiphenyl	—	* 1.0	* Clear, oily liquid	* 75	* 0.20	* Characteristic, mild	* 1.436 to 1.438	* 1.017 to 1.023	8.50	< -70
Tributyl	266.32	* 0.61	* Clear, oily liquid	* 25	* 0.20	* Characteristic	* 1.422 to 1.424	* 0.973 to 0.978	8.14	< -80
GLYCOLATES										
Santicizer E-30	390.22	* 0.17	* Clear, oily liquid	* 20	* 0.15	* Slight, mint	1.496 to 1.500	* 1.180 to 1.185	9.85	(mper/cools to gel readily)
Santicizer E-16	334.37	* 0.13	* Clear, oily liquid	* 45	* 0.15	* Slight, characteristic	1.488 to 1.492	* 1.095 to 1.105	9.15	< -35
Santicizer M-17	266.24	* 0.23	* Clear, oily liquid	* 20	* 0.15	* Slight, characteristic, mint	1.504	* 1.217 to 1.227	10.20	< -35
SULFONAMIDES										
Santicizer 1-8	253.36	—	* Yellow brown fused mass	* 200 (melten)	* 0.15	—	—	1.175	—	(in vacuum jacket) @ 5 min.
Santicizer 3	199.23	* 1.00	* Practically white solid	* 80 (melten)	* 0.25	—	1.512 to 1.532 (65°C)	1.166 to 1.176 (65°/65°C)	—	* 80.0 min.
Santicizer 8	309.22	* 0.80	* Light yellow, viscous liquid free of turbidity or extraneous matter	* 20° (melten)	—	* Slight, characteristic	1.560	1.180	9.82	<-20
Santicizer 9	311.4	pH 4.0 min	* Fine, white to light cream, granular particles	* 85 (33% wt. % in acetone)	* 1.0	Essentially none	1.4775 to 1.4785 (25g 75g butyl acetate)	1.251 (solid)	—	105
Santolite® MHP	—	neg. ROH @	* Hard, practically colorless resin	* 80 (25g: 75g butyl acetate)	—	Faint formaldehyde	1.54	1.26	—	82
Santolite MS 80%	—	—	* Light-colored, viscous liquid. Free flowing above 20°C	* 80 (25g: 75g butyl acetate)	—	—	—	1.216	10.5	—
PERMANENT										
Santicizer 405	—	* 1.0	* Clear, viscous liquid	* 250 (50ml, 50ml 95% ethanol)	* 0.15	* Characteristic	1.478	* 1.129 to 1.132	9.41	—
Santicizer 409	—	* 1.5	* Clear, liquid	* 150 (50ml, 50ml 95% ethanol)	* 0.15	Very faint odor	1.4654	* 1.080 to 1.084	9.01	—
Santicizer 413	—	* 1.0	* Slightly yellow, viscous liquid, some solids on standing	* 175 (50ml, 50ml 95% ethanol	* 0.15	* Slight, characteristic	1.4722	* 1.104 to 1.110	9.20	—
Santicizer 430	—	* 0.60	* Clear, oily liquid	* 200	* 0.15	Slight, characteristic	1.4943	* 1.039 to 1.044	8.72	—
Santicizer 431	—	* 0.35	* Clear, oily liquid	* 200	* 0.15	Slight, characteristic	1.4785	* 1.072 to 1.078	8.96	—
Santicizer 462	—	* 1.1	* Clear, liquid	* 325	* 0.15	Slight, characteristic	1.4756	* 1.097 to 1.103	9.11	—
Santicizer 483	—	* 0.14	* Clear, oily liquid	* 125	* 0.15	Slight, characteristic	* 1.5013 to 1.5050	* 1.043 to 1.057	8.74	—
OTHER										
MS-40®	—	—	Practically colorless, oily liquid	* 150	* 125 ppm	Faint, characteristic	1.5600 to 1.5150	* 1.001 to 1.007 (25° 15.5°C)	8.37	—
Mod Epon®	—	* 0.05 neg ROH @	* Only liquid or light-yellow solid	* 80	—	—	* 1.567 to 1.990	* 1.176 to 1.182 (20°/15.5°C)	9.83	25
Triphenyl Phosphite	310.28	* 0.10 neg ROH @	* Only liquid or light-yellow solid	* 50	—	—	* 1.567 to 1.990	* 1.176 to 1.182 (20°/15.5°C)	9.83	25

GENERAL PROPERTIES OF REPRESENTATIVE AROCLOR® PLASTICIZERS AND RESINS (*MONSANTO SPECIFICATIONS)

PROPERTY	AROCLOR 1221	AROCLOR 2221	AROCLOR 1242	AROCLOR 2242	AROCLOR 4454	AROCLOR 1260	AROCLOR 1262	AROCLOR 5442	AROCLOR 5460	AROCLOR 5460	AROCLOR 1268
	⬡	⬡	⬡	⬡	⬡	◆	◆	■	■	■	□
Appearance	Clear, mobile oil	Clear, mobile oil	*Clear, mobile oil	*Clear, mobile oil	Light yellow viscous oil	*Light-yellow, soft, sticky resin	*Light-yellow sticky viscous resin	*Yellow, clear, sticky resin	*Light-yellow, clear, brittle resin	*Clear, yellow to amber, brittle resin or flakes	*White to off-white powder
Odor, maximum	*50 APHA	*100 APHA	*100 APHA	*100 APHA	*100 APHA	*150 APHA	*130 APHA	*2 NPA (melten)	*2 NPA (melten)	*2 NPA (melten)	1.5 NPA (melten)
Chlorine, per cent	20.5-21.5	20.5-22.5	42	42	54	60	61.5-62.5	42	60	59.5-60.5	60
Acidity, mg KOH g. maximum	*0.014	*0.014	*0.015	*0.010	*0.10	*0.014	*0.014	0.05	0.1	0.3	0.05
Discolors, ppm, maximum	—	—	*50	*50	*50	*50	—	—	—	—	—
Avg. Coefficient of Expansion, or °C	0.00731 (15°-100°C)	0.00717 (25°-100°C)	0.00561 (25°-65°C)	0.00578 (25°-65°C)	0.00566 (25°-65°C)	0.00567 (90°-100°C)	0.00564 (25°-65°C)	0.00113 (25°-90°C)	0.00065 (25°-65°C)	0.00179 (25°-174°C)	0.00091 (90°-180°C)
Specific Gravity	*1.382-1.392 (25°/25°C)	*1.378-1.390 (25°/25°C)	*1.381-1.392 (25°/25°C)	*1.405-1.415 (65°/15.5°C)	*1.495-1.505 (65°/15.5°C)	*1.545-1.566 (90°/25°C)	*1.532-1.563 (90°/25°C)	1.470 (25°/25°C)	1.610 (25°/25°C)	1.626 (25°/25°C)	1.804-1.807 (25°/25°C)
Density, pounds per gallon, 25°C	9.05	10.55	11.30	11.84	12.62	13.50	13.72	12.24	13.91	13.51	13.99
Distillation Range, °C, corrected (ASTM D 20 modified)	275-320	290-325	325-364	340-375	365-390	385-420	390-425	210-300 (5 mm. Hg)	290-320 (5 mm. Hg)	290-335 (5 mm. Hg)	435-450
Evaporation Loss, %, 105°C, 5 hours (ASTM D 6, modified) 135°C, 5 hours	1.0-1.5	1.0-1.5	0.0-0.4 0.3-0.6	0.0-0.2 0.1-0.3	0.0-0.2 0.1-0.3	0.0-0.4 0.2-0.6	0.0-0.4 0.2-0.6	0.01 0.1	0.0-0.2 0.1-0.3	0.03	0.0-0.06 0.1-0.2
Flash Point (Cleveland Open Cup), °F °C	440-450 227-232	450-460 232-238	470-490 243-254	490-525 254-274	NONE	NONE	NONE	390 199	NONE	NONE	NONE
Fire Point (Cleveland Open Cup), °F °C	490 254	520 271	NONE**	NONE	NONE	NONE	NONE	450 232	NONE	NONE	NONE
Pour Point (ASTM D 97), °F °C	5 (crystals) -15 (crystals)	-10 -23	-10 -23	-7 -22	50 10	30 -1	30 -1	15 -9	— —	— —	— —
Softening Point (ASTM E 28), °F °C	— —	— —	— —	— —	— —	— —	— —	190-197 88-92	250-266 121-130	280-295 138-146	360-370 182-188 (ball and ring)
Refractive Index, n $^{25}_{D}$ at 20°C	1.617-1.618	1.620-1.622	1.627-1.629	1.630-1.632	1.630-1.641	1.647-1.649	1.6501-1.6517	—	1.604-1.607	1.600-1.605	—
Viscosity, Seconds Saybolt Universal (ASTM D 88)	100°F: 37.5-43.5 130°F: 34.5-38.5 210°F: 32.5-34.5	100°F: 41.5-46.5 130°F: 36.5-39.5 210°F: 33.5-35.5	100°F: 52-62 130°F: 44-52 210°F: 36-39	100°F: 100-120 130°F: 72-80 210°F: 44-48	100°F: 2000-2500 130°F: 950-1250 210°F: 240-260	8000-9500 212°F	6000-8500 (140°F, 71°C) 98°F, 100	— 210°F	390-600	98-135 (210°F, 100°C)	— — —

*Monsanto Company specifications
**NONE indicates no flash or fire up to boiling point

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Pour Point (°C)	Boiling Point (at 760 mm. Hg)	Vapor Pressure (mm Hg) at 150°C	at 200°C	at 300°C	Viscosity (centistokes) at 0°C	at 25°C	at 98.9°C	Surface Tension at 20°C (dynes/cm.)	Thermal Expansion Coefficient (at 10°C to 40°C) (c.c./c.c./°C)	* Specification Flash Point (C.O.C.) (°F)	Fire Point (C.O.C.) (°F)	Assay (Ester Content) (%)	Sulfur (Copper-strip test)	Solubility in water (at 25°C) (%)
–40	340 0	1	9	300	55 0	10 5	2 6	35	0 00078	340	395	98 min	—	0 001 (20°C)
—	270 to 275 (5 mm Hg)	0 05	1 1	—	—	—	—	36 6 (75°C to 1°)		405	445	* 99 0 min	—	<0 01
–40 (supercools readily)	290	0	56	—	31 0	9 0	1 8	35 3 (98 5°C)	—	305	345	99 min	Negative	0 1 (32°C)
–45	250 to 257 (5 mm Hg)	0 013	0 35	—	647 0	91 0	3 6	29	0 00074	450	470	—	—	<0 001
–46	220 to 232 (5 mm Hg)	< 0 05	1 8	—	327 0	65 0	6 3	—	0 00073	430	490	99 min to 101	Negative	<0 01
–26 (supercools)	252	03	26	—	84	11 4	1 6	32	0 00092 (0° to 30°C)	380	315	99 0 min	Negative	0 6 (32°C)
–26	230 to 257 (5mm Hg)	0 01	0 25	—	—	130	34	31	0 00091	425	—	—	—	
–67	300	0 06	1 2	—	340 0	56 0	4 3	33 (25°C)	0 00074	475	490	99 to 101	Negative	<0 005
—	295	0 15	3 2	95	—	—	—	—	—	435	—	—	—	<0 01
–37	295 (5mm Hg)	—	—	—	1160	160	5	—	—	450	—	—	—	
–45	370	0 10	2	90	—	41 5	—	39 0 (25°C)	0 00080	390	—	—	—	0 0002 (20°C)
–62	—	0 14	3 6	—	760 0	45 0	3 0	—	—	390	—	—	Negative	<0 005
–63	—	10 6	70 1	—	—	11 2	—	33 6 (74°C)	—	315	335	—	—	Practically insoluble
–63	—	11 0	53 1	—	—	29 6 (7 0°C	4 5	31 0 (76°C)	0 00051	325	355	—	—	Practically insoluble
–36	—	—	—	—	—	78	6 5	—	—	495	—	—	—	Practically insoluble
–27	—	—	0 33	34	900	92	5 2	34 3 (25°C)	0 00056	470	515	—	—	—
–45	—	—	—	—	—	34 5 (7 0°C)	3 0	—	—	412	—	—	—	—
–54	—	—	—	—	400 0	60 0	4 5	—	0 00078	395	—	—	—	—
–60	—	—	—	—	450 0	61 0	4 3	—	0 00074	370	—	—	—	—
–65	—	—	—	—	250 0	50 0	4 0	—	0 00074	365	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
–65	240 (5 mm Hg)	0 02	0 58	—	—	14 5 (7 0°C)	3 6	30	0 00077	—	—	—	—	<0 01
0	—	0 04	0 80	—	—	9 5 (7 0°C)	2 8	29	0 00076	405	480	—	Negative	<0 01
–60	314 (5 mm Hg)	< 0 15	2 5	—	—	9 2 (7 0°C)	2 4	29	0 00078	372	430	—	—	<0 01
—	470	—	0 5	29	3756 0	89 0	4 0	44 5	0 00037	470	695	—	—	<0 002 gm. 100 ml
—	370	0 13	1 9	—	—	28 (65°C)	2 0	—	—	437	—	—	—	0 001 (34°C)
–37	390	0 09	1	760 (250°C)	908 0	33 0	2 6	42	0 00057	450	none at 525	—	—	<0 005
–54	375	0 095	1 3	—	61 0	14 4	2 5	36 7 (23°C)		435	460	—	—	0 003
–70	335 230	< 0 10	1 5	—	—	12 0 (0°C)	—	30	0 00081	435	485	—	—	0 11
–80	137 185	7 3	> 500	—	—	3 6 (0°C)	—	25	0 00105	380	400	—	—	0 1
—	320	0 47	7	480	616 0	56 0	2 9	—	—	396	—	—	Negative	0 0179 (30°C)
< –60	345	0 1	3 0	190	279 0	46 0	3 5	—	—	390	—	—	Negative	0 0017 (30°C)
–26	310	0 3	8	600	1476 0	82 0	2 9	43 6 (25°C)	—	380	—	—	Negative	0 05 (30°C)
—	390	—	—	—	—	—	—	—	—	—	—	—	—	0 0045 (30°C)
240	—	0 6 (150°C)	—	—	—	—	—	—	—	391	—	—	—	Slight
—	342	0 45	8 5	—	30 000	354 0	5 0	44 5 (25°C)	—	345	—	—	—	0 13 (23°C)
—	360 (approx)	0 25	3 2	—	—	—	—	—	—	420	—	—	—	1 (34°C)
—	—	—	—	—	—	—	—	—	—	—	—	—	—	Practically insoluble
—	—	—	—	—	—	—	—	—	—	—	—	—	—	Nil
–1 3	—	—	—	—	—	10 500 to 13 500	—	—	—	555	—	—	—	Practically insoluble
0	—	—	—	—	—	7 900 to 9 900	—	—	0 00071	530	570	—	—	Practically insoluble
+21 1	—	—	—	—	—	9 000 to 9 800	—	—	—	540	—	—	—	Practically insoluble
–1	—	—	—	—	—	856	—	—	—	475	535	—	—	Practically insoluble
10	—	—	—	—	—	2 818	—	—	—	485	535	—	—	Practically insoluble
10	—	—	—	—	—	6 422	—	—	—	525	580	—	—	Practically insoluble
–31	—	—	—	—	—	396	—	—	—	485	525	—	—	Practically insoluble
–26	345 to 396	2	15	730	90 0	29 0 (37 8°C)	3 6	40 1 (25°C)	—	343	385	—	—	
—	390	—	11 (220°C)	—	—	—	—	—	—	375	525	—	—	Hygroscopic
—	360	—	11 (220°C)	—	—	17 5	—	—	—	375	525	—	—	Hygroscopic

FLAME-RETARDANT PLASTICIZERS

If you want products that resist burning, build your formulations with one or a combination of flame-retardant plasticizers. Monsanto's liquid and solid flame-retardant plasticizers offer a wide range of compatibilities. Other beneficial properties include permanence, chemical resistance, extraction resistance, flexibility and weatherability.

- **Santicizer® 140**
- **Santicizer 141**
- **Trikresyl Phosphate**
- **Triphenyl Phosphate**
- **11 Aroclor® Plasticizers**
- **6 Montar® Compounds**

FDA REGULATED PLASTICIZERS

Monsanto offers more FDA regulated plasticizers than any supplier for use in compositions related to food packaging and handling, and for articles that come into close contact with the human body. The following list of plasticizers offer you high specification standards of purity, low odor, minimum taste, flexibility, clearness and water resistance for applications such as: food-wrapping paper coatings, packaging films, label adhesives and inks, beverage and blood tubing:

- **Dioctyl Phthalate (high-water-content foods only)**
- **Diisooctyl Phthalate (high-water content foods only)**
- **Diethyl Phthalate**
- **Dioctyl (2-ethylhexyl) Adipate**
- **Santicizer® 141**
- **Santicizer E-15**
- **Santicizer B-16**
- **Santicizer 160**

SOLID PLASTICIZERS

Choose from a variety of plasticizers for use in adhesives, coatings and lacquers, foams, rigid compositions and films. Solid plasticizers decrease your hot processing time at reduced cost. During solvent processing, they require fewer surface-building coats and at less cost. For use such as delayed-tack and heat-seal adhesives and coatings for non blocking films, easier processing of rigid plastics products, toughness of rigid foams, for even flow and uniform filling of resinous impregnants, choose from the following:

	Melting Point (°C)	Softening Range (°C)
Aroclor® 5442	—	46-52
Triphenyl Phosphate	48.5	—
Montar® 1	—	54-160
Santicizer® 3	58	—
Aroclor 4465	—	60-66
Santolite® MHP	62	—
Dicyclohexyl Phthalate	63	—
Diphenyl Phthalate	69	—
Montar 2	—	70-170
Santicizer 1-H	82.5	—
Montar 3	—	86-168
Montar 4	—	92-206
Aroclor 5460	—	98-105
Santicizer 9	105	—
Montar 9	—	130-175
Aroclor 1268	—	150-170
Montar 5	—	155-195

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