Harwick Standard Distribution Corporation

Plasticizers & Process Oils

Harwick Standard offers a broad line of plasticizers to meet the needs of both rubber compounders and flexible PVC formulators. By offering a large range of products, we provide our customers the versatility of identifying a plasticizer family that is effective with various polymers, and gives several product options from which to choose for optimum performance characteristics - from general use to most demanding requirements.

Harwick Standard's experienced technical and sales staff can assist in selecting the best plasticizer to meet your requirements. Please contact us for assistance with your compounding needs.

Plasticizers

Adipates

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer® DOA	Dioctyl adipate	R-1,2/ P-1,2	103-23-1	√		√			Low water extraction, UV stability
Polycizer DINA	Diisononyl adipate	R-1,2/ P-1,2	33703-08-01	√	√				Low volatility vs. DOA
Merrol® 4206 (DBEA)	Di(butoxyethyl) adipate	R-1,2,3/ P-2	141-18-4	√					Very good low temperature resistance
Polycizer DBEEA	Di(butoxyethoxyethyl) adipate	R-1,2,3	141-17-3	√	√	√	√		Very good low temperature resistance

Azelates

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Merrol DOZ-E	Dioctyl azelate	R-1,2/ P-1,2	103-24-2	√	√				Excellent low temperature

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Benzoates

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Benzoflex® 9-88	Dipropylene glycol dibenzoate	R-1/ P-1,2	Proprietary		√			√	Polyurethanes
Benzoflex 50	Diethylene/ dipropylene glycol dibenzoate	R-1/ P-1,2	Proprietary		√			√	Water-based adhesives
Benzoflex 2088	Diethylene glycol dibenzoate, triethylene glycol dibenzoate, dipropylene glycol dibenzoate	R-1/ P-1,2	Proprietary		√	√		√	High solvating plasticizer with low volatile organic compounds (VOC's) FDA 21 CFR 175.105(a)

Chlorinated Paraffins

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Flame Resistance	High Solvating	Miscellaneous
Chloroflo® 42	Liquid chlorinated paraffins	R-2/ P-1	63449-39-8/ 85535-86-0		√		√		C18-C28 long chain chlorinated paraffins, 40% Chlorine
Paroil®140	Liquid chlorinated paraffins	R-2/ P-1	63449-39-8/ 85535-86-0		√		√		C18-C28 long chain chlorinated paraffins, 42% Chlorine
Paroil 142-LV	Liquid chlorinated paraffins	R-2/ P-1	63449-39-8		√		√		Long chain 20 plus carbons, 43% Chlorine
Paroil 54 NR	Liquid chlorinated paraffins	R-2/ P-1	63449-39-8/ 85535-86-0		√		√		C12-C24 chlorinated alkenes, 54% Chlorine
Paroil 58 NR	Liquid chlorinated paraffins	R-2/ P-1	63449-39-8/ 85535-86-0		√		√		Mid chain chlorinated alkenes, 59% Chlorine
Paroil 60 H	Liquid chlorinated paraffins	R-2/ P-1	63449-39-8		√		√		Medium chain 14-17 carbons, 60% Chlorine
Paroil 63 NR	Liquid chlorinated paraffins	R-2/ P-1	68527-02-6		√		√		Medium chain 14-17 carbons, 62% Chlorine

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Mono-Esters

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer Butyl Oleate	Butyl oleate	R-2/ P-2	142-77-8	√					Primary light color plasticizer for CR (polychloroprene)
Polycizer MO	Vegetable Oil	R-2	8001-30-7	√	√		√	√	Low & high temperature plasticizer for CR
Natro-Flex® IOT	Isooctyl tallate	R-1,2	68333-78-8	√					Low temperature aliphatic ester for CR, NBR, and PVC

Phosphate Esters

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Flame Resistance	High Solvating	Miscellaneous
Lindol™	Tricresyl phosphate	P-1,2	1330-78-5		√		√	√	Applications in polar elastomers and PVC
Phosflex™ 41L Merrol 521	Isopropylated triphenyl phosphate	R-1,2/ P-1	68937-41-7 /115-86-6				√		Applications in polar elastomers such as NBR
Phosflex T-BEP	Tris(2-butoxyethyl) phosphate	R-1,2,3,4/ P-1,2	78-51-3	√			√	√	Applications in many elastomers; least polar phosphate ester
Phosflex 390	Diphenyl isodecyl phosphate	R-1,2,4/ P-1,2	29761-21-5 /115-86-6				√		Applications in non-polar elastomers

Phthalate Free

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer DHIN	1,2 cyclohexane dicarboxylic acid di-isononyl ester	R-1,2/ P-1	474919-59-0		√				Performance similar to DINP, DOP in NBR compounds

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Phthalates

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Merrol DAP	Diallyl phthalate	R-1,2/ P-3	131-17-9					√	Co-curing
Polycizer DBP Merrol DBP	Dibutyl phthalate	R-1,2/ P-1,2	84-74-2					√	Good emollient for cosmetics
Polycizer DINP	Diisononyl phthalate	R-1,2/ P-1,2	28553-12-0		√				General purpose
Polycizer DOP	Di(2-ethylhexyl) phthalate	R-1,2/ P-1,2	117-81-7						General purpose
Polycizer L9P	Dinonyl phthalate	R-1,2/ P-1,2	68515-45-7	√	√				Good low temperature
Polycizer DPHP	Bis(2-propylheptyl) phthalate	R-1,2/ P-1,2	53306-54-0		√		√		Good high temperature
Polycizer DUP-E	Diundecyl phthalate	R-1,2/ P-1,2	3648-20-2	√	√		√		Low fogging
Polycizer DOTP	Dioctyl terephthalate	R-1,2/ P-1,2	6422-86-2	√		√	√		Low level extraction when exposed to soapy water. Non-phthalate replacement

Polymerics

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Perme-ability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Admex™ 334F	Fatty acid capped glycol adipate	R-1/ P-1,2	Proprietary				√		Excellent compatibility, critical applications
Admex 523	Dibasic acid glycol polyester phthalate	R-1/ P-1,2	Proprietary			√	√		Widely compatible with low fusion temperature
Admex 761	Mixed Dibasic acid glycol polyester	R-1/ P-1,2	Proprietary				√		Speciality type polymeric plasticizer
Merrol P-6320	Dibasic acid glycol polyester adipate	R-1,2/ P-1	Proprietary	√		√			Solvent & oil resistance, low temperature flexibility
Polycizer P-6400	Fatty acid capped glycol adipate	P-1,2	Proprietary		√	√			Excellent for humidity aging and dielectric properties
Merrol P-6420	Dibasic acid glycol polyester adipate	P-1	63149-79-1			√			Good color

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Sebacates

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer DBS	Dibutyl sebacate	R-1,2/ P-1,2	109-43-3	√				√	FDA 21 CFR 175.105, 175.300, and 177.2600
Polycizer DBES	Di(butoxyethyl) sebacate	R-1,2/ P-1,2	141-19-5	√					Excellent low temperature
Polycizer DOS Merrol DOS	Dioctyl sebacate	R-2/ P-1,2	122-62-3	√		√			Low temperature greases & caulks

Specialty

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Perme-ability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Plasticizer SC-B	Triethylene glycol dicaprate/caprylate	R-1,2,3	Proprietary	√				√	FDA 21CFR 177.2600(c)(4)(iv)
Plasticizer SC-E	Triethylene glycol di(2-ethylhexanoate)	R-1,2,3	94-28-0	√					Flexibilitity over a wide temperature range
CalEster 600	Pentaerythritol ester of fatty acids	R-1,2	Proprietary	√	√	√	√	√	Excellent low and high temperature
Plas Chek® 775	Epoxidized soybean oil	R-1/ P-1,2,3	8013-07-8		√	√		√	Good heat stabilizer

Trimellitates

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Perme-ability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Polycizer TOTM, Polycizer TOTM-E	Trioctyl trimellitate	R-1,2/ P-1,2	3319-31-1		√		√	√	Excellent water resistance
Merrol 810TM-E	Tri(n-octyl, n-decyl) trimellitate	R-2	67989-23-5	√	√		√	√	Excellent oxidation and water resistance
Polycizer TINTM	Triisononyl trimellitate	R-1,2/ P-1,2	53894-23-8		√	√	√	√	Extreme low volatility

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Process Oils

Aromatic Petroleum Process Oils

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Low Temperature/ Flexibility	Low Volatitity	Low Extraction	Flame Resistance	High Solvating	Miscellaneous
Stan-Flux LV-1	Aromatic oil	R-4	64742-05-8	300	8.0	38/101	0.8	214/420	Dark color, good for SBR, NR, and CR

Naphthenic Petroleum Process Oils

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Viscosity SUS @ 40°C 100°F-secs.	Color- ASTM D-1500	Aniline Point °C/°F	Volatility 22 hrs 107/225 °C/°F	Flash Point COC °C/°F	Miscellaneous
Stan-Plas 100/105	Naphthenic oil	R-1,4	64742-52-5/ 64742-53-6	105	1.5	75/170	10.0	151/305	General Processability
Stan-Plas 101C	Naphthenic oil	R-1,4	64742-52-5/ 64742-53-6	105	1.5	75/170	10.0	151/305	General Processability, meets 21CFR 178.3620(c)
Stan-Plas 150	Naphthenic oil	R-1,4	64742-52-5	155	2.0	75/170	6.0	170/335	General Processability
Stan-Plas 300	Naphthenic oil	R-1,4	64742-52-5	300	2.0	75/170	1.8	195/380	General Processability
Stan-Plas 500	Naphthenic oil	R-1,4	64742-52-5	520	2.0	85/184	1.0	200/390	General Processability
Stan-Plas 1200	Naphthenic oil	R-1,4	64742-52-5	1200	2.0	90/195	0.2	230/450	General Processability
Stan-Plas 2000	Naphthenic oil	R-1,4	64742-52-5	2000	3.5	95/205	0.08	250/480	General Processability

Paraffinic Petroleum Process Oils

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Viscosity SUS @ 40°C 100°F-secs.	Color- ASTM D-1500	Aniline Point ° C/°F	Volatility 22 hrs 107/225 °C/°F	Flash Point COC °C/°F	Miscellaneous
Stan-Lube 10	Paraffinic oil	R-4	64742-54-7	80	1.5	100/212	0.8	200/590	Light color, good for EPR & EPDM
Stan-Lube 15	Paraffinic oil	R-4	64741-88-4	150	2.0	105/220	0.6	205/400	Light color, good for EPR & EPDM
Stan-Lube 60	Paraffinic oil	R-4	64742-54-7	500	2.0	115/240	0.2	270/520	Light color, good for EPR & EPDM
Stan-Lube 80	Paraffinic oil	R-4	64742-01-4	2500	7.0	127/260	0.01	310/590	Light color, good for EPR & EPDM

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Paraffinic Petroleum Process Oils (con't)

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Viscosity SUS @ 40°C 100°F-secs.	Viscosity cSt @ 40°C	Color-Sayboldt D-156	Pour Point °C/°F	Flash Point COC °C/°F	Miscellaneous
Technical White Oil Grades: Meets the requirements of U.S. FDA regulation 21 CFR 178.3620(b)									
Stan-Lube 60-T	Paraffinic oil	R-4	8042-47-5	62	10	plus 28	-33 / -27	174 / 345	Very light color, technical grade, good for EPR & EPDM
Stan-Lube 90-T	Paraffinic oil	R-4	8042-47-5	90	16.5	plus 28	-12 / -10	177 / 350	Very light color, technical grade, good for EPR & EPDM
Stan-Lube 220-T	Paraffinic oil	R-4	8042-47-5	220	43	plus 28	-12 / -10	216 / 420	Very light color, technical grade, good for EPR & EPDM
Stan-Lube 350-T	Paraffinic oil	R-4	8042-47-5	350	68	plus 28	-12 / -10	216 / 420	Very light color, technical grade, good for EPR & EPDM
Stan-Lube 6006	Paraffinic oil	R-4	8042-47-5	75		plus 20		150/300	Very light color, technical grade, good for EPR & EPDM
Stan-Lube 6056	Paraffinic oil	R-4	8042-47-5	570		plus 20		240/460	Very light color, technical grade, good for EPR & EPDM

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Viscosity SUS @ 40°C 100°F-secs.	Viscosity cSt @ 40°C	Color-Sayboldt D-156	Pour Point °C/°F	Flash Point COC °C/°F	Miscellaneous
White Mineral Oil Food Grades: Exceeds requirements for U.S. FDA regulations 21 CFR 172.878 and 21 CFR 178.3620(a). Meets current standards of the National Formulary (NF) or US Pharmacopeia (USP) and are registered as 3H and H1 lubricants for direct & indirect food contact by NSF. Only Duoprime 350 is Certified to ANSI/NSF Standard 60.									
Duoprime® 350	Paraffinic oil	R-4	8042-47-5	350		plus 30		252/450	Very light color, food and NF grade, good for EPR & EPDM
Stan-Lube 70-W	Paraffinic oil	R-4	8042-47-5	70	12.8	plus 30	-27 / -17	177 / 350	Very light color, food and NF grade, good for EPR & EPDM
Stan-Lube 90-W	Paraffinic oil	R-4	8042-47-5	90	17	plus 30	-15 / 5	177 / 350	Very light color, food and NF grade, good for EPR & EPDM
Stan-Lube 100-W	Paraffinic oil	R-4	8042-47-5	105	20	plus 30	-12 / -10	199 / 390	Very light color, food and NF grade, good for EPR & EPDM

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Paraffinic Petroleum Process Oils (con't)

Tradename(s)	Chemical Name	Polymer Usage	CAS #	Viscosity SUS @ 40°C 100°F-secs.	Viscosity cSt @ 40°C	Color-Sayboldt D-156	Pour Point °C/°F	Flash Point COC °C/°F	Miscellaneous
White Mineral Oil Food Grades: Exceeds requirements for U.S. FDA regulations 21 CFR 172.878 and 21 CFR 178.3620(a). Meets current standards of the National Formulary (NF) or US Pharmacopeia (USP) and are registered as 3H and H1 lubricants for direct & indirect food contact by NSF. Only Duoprime 350 is Certified to ANSI/NSF Standard 60.									
Stan-Lube 130-W	Paraffinic oil	R-4	8042-47-5	130	25	plus 30	-12 / -10	199 / 390	Very light color, food and NF grade, good for EPR & EPDM
Stan-Lube 180-W	Paraffinic oil	R-4	8042-47-5	180	35	plus 30	-12 / -10	199 / 390	Very light color, food and NF grade, good for EPR & EPDM
Stan-Lube 220-W	Paraffinic oil	R-4	8042-47-5	220	43	plus 30	-12 / -10	216 / 420	Very light color, food and NF grade, good for EPR & EPDM
Stan-Lube 500-W	Paraffinic oil	R-4	8042-47-5	500	95	plus 30	-7 / -20	216 / 420	Very light color, food and NF grade, good for EPR & EPDM

Polymer Usage Key	
(Rubber) R-1	NBR, NBR/PVC
(Rubber) R-2	CR, CPE, CSM
(Rubber) R-3	ECO, FKM, ACM, AEM
(Rubber) R-4	EPR, EPDM, NR, IR, BR, TPE, SBR, Block SBR

Polymer Usage Key	
(Plastic) P-1	PVC
(Plastic) P-2	PVAC, PS, ABS, Cellulosics
(Plastic) P-3	Engineering Resins, Polyesters, Alloys

Disclaimer of Liability

The information and recommendations contained herein are based upon data that are believed to be accurate and reliable to be the best of Harwick's knowledge and belief. Application and performance information are provided only as a guide, since the conditions of use are beyond Harwick's control. No warranty is made of the merchantability or fitness for a particular purpose, and Harwick Standard Distribution Corporation shall not be liable for any cost, loss, damage, or liability arising from the failure to achieve a particular result by the application of any method or that is recommended herein

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