

**VERSICOL CHEMICAL CORPORATION**  
**SPECIALTY BENZOATE ESTERS**

**HIGH COMPATIBILITY ● LOW VISCOSITY ●**

**MODERATE TO HIGH SOLVATING ● LOW**

**VOLATILITY ● STAIN RESISTANCE ●**

**EXTRACTION RESISTANCE ● FAST SET**

**TIMES ● FLEXIBILITY ● SPECIALTY**

**PERFORMANCE ● HIGH COMPATIBILITY**

**● LOW VISCOSITY ● MODERATE TO**

**HIGH SOLVATING ● LOW VOLATILITY ●**

**STAIN RESISTANCE ● EXTRACTION**

**RESISTANCE ● FAST SET TIMES ● FLEXIBILITY**

**● SPECIALTY PERFORMANCE ● HIGH COMPATIBILITY**



MARKETED BY  
**HARWICK STANDARD**  
**DISTRIBUTION CORPORATION**  
60 S. Seiberling Street • Akron, Ohio 44305

# VELSICOL CHEMICAL CORPORATION

*Velsicol is a growing, global corporation focused on producing high performance specialty chemicals based on benzoic acid and cyclopentadiene that serve a variety of niche markets.*

*Top-selling products include a full line of specialty plasticizers ranging from innovative benzoate esters to high performance polymeric and monomeric. With such a broad line, we are able to serve the adhesives, caulks, sealants, coatings and PVC resins markets.*

*Velsicol also is proud to be the world's largest marketer of refined benzoic acid and derivatives. Our investments in this area ensure that you can expect only the highest quality derivatives and continual development of new products from Velsicol.*

*Cyclopentadiene is the basis for the third line of chemicals we manufacture. These derivatives are used in the production of flame retardants and agricultural pesticides.*

# Specialty Benzoate Esters

Velsicol's Specialty Liquid and Solid Benzoate Esters ..... 2-3

## Applications of Specialty Esters

Polyvinyl Chloride Plastics ..... 4

Polyurethane ..... 4

Varnishes ..... 4

Adhesives ..... 5

Latex Coatings ..... 5

Hot Melt Adhesives ..... 5

Application Guide ..... 6

FDA Status ..... 7



VELSICOL CHEMICAL CORPORATION  
SPECIALTY BENZOATE ESTERS

## Specialty Benzoate Esters

Benzoflex® esters are used extensively in many applications ranging from floor tile to roto-molded children's toys. Benzoflex esters, as a class, are considered high-solvating plasticizers that are compatible enough to be used as a sole or primary plasticizer, but more often are used in blends to provide specialty performance characteristics.

### SPECIALTY LIQUID BENZOATE ESTERS

#### Benzoflex® 9-88 SG

Benzoflex® 9-88 SG is recommended as a plasticizer for cast urethane applications that require a minimum cure interference and maximum in compatibility. The excellent degree of compatibility in cast polyurethane systems allows use at high levels to achieve durometer readings ranging as low as 20-25 Shore A hardness for graphic art painting rolls.

#### Benzoflex® 131

Benzoflex® 131 isodecyl benzoate is a clear, low viscosity organic liquid that reduces the viscosity of vinyl plastisols. Benzoflex 131 is moderately volatile when compared to primary plasticizers such as Benzoflex 9-88. The volatile nature of Benzoflex 131 may be used to advantage in such applications as vinyl compounding. It is a moderate solvator for vinyl and has excellent stain resistance.

#### Benzoflex® 2-45

Benzoflex® 2-45, diethylene glycol dibenzoate, is a plasticizer industrially known for its excellent compatibility with polyvinyl acetate (PVA) homopolymer and copolymer emulsions. Benzoflex 2-45 plasticizer-based adhesives have excellent quick grab and set times. While Benzoflex 2-45 does thicken polyvinyl acetate emulsions, the adhesives are comparatively stable.

#### Benzoflex® 284

Benzoflex® 284, propylene glycol dibenzoate, is an effective high solvating plasticizer. Its exceptional stain resistance makes Benzoflex 284 ideal for resilient polyvinyl chloride (PVC) flooring top coats. PVC formulations containing Benzoflex 284 can be processed at lower temperatures and/or a quicker production rate.

#### Benzoflex® 354

Benzoflex® 354 is the benzoic acid diester of 2,2,4-trimethyl-1,3-pentanediol. The diester is compatible with a wide range of synthetic resinous materials, and it imparts a softening and flexibilizing effect to these resins. Benzoflex 354 is suggested for use as a resin plasticizer/modifier in the formulation of specialty coatings and adhesives and PVC plastisols.

# Specialty Benzoate Esters

## **Benzoflex® 400**

Benzoflex® 400 is a low volatile, moderately solvating plasticizer. It was designed to be used in applications requiring a plasticizer lower in volatility than low molecular weight esters. Benzoflex 400 is an efficient, cost/performance alternate to the high alkyl benzyl phthalate.

## **Benzoflex® P-200**

Benzoflex® P-200, polyethylene glycol dibenzoate, is a clear, low volatile plasticizer. It is compatible with several polymers such as PVC, PVA, phenolformaldehyde and some alkyds. The low volatility and polar nature of Benzoflex P-200 make it useful in formulations containing thermosetting polymers, such as phenolics resins.

## **Benzoflex® 1046**

Benzoflex® 1046 is a specialty benzoate plasticizer imparting excellent stain resistance in PVC or PVC acetate copolymers. Its high resin solvation at elevated temperatures, coupled with its tolerance for fillers, makes it the plasticizer of choice for wall coverings and vinyl floor coverings. In addition, its excellent rheological properties make it highly desirable for plastisol and organosol applications.

## **Benzoflex® 6000**

Benzoflex® 6000 has excellent compatibility in PVC, promoting fusion and building physical properties. It imparts excellent stain resistance when formulated into vinyl flooring and wall coverings. Due to minimal migration from the PVC polymer, Benzoflex 6000 provides excellent paintability of plasticized surfaces.

## **Velate® 262**

Velate® 262 isodecyl benzoate is a low viscosity, low odor organic compound that is useful as a latex paint coalescing aid. It has been evaluated thoroughly in a variety of types of latex paints versus an alcohol/ester coalescent to demonstrate its utility as a coalescent.

## SPECIALTY SOLID BENZOATE ESTER

## **Benzoflex® 352**

Benzoflex® 352 is a white crystalline solid with the very high melt point of 118°C that can offer significant performance advantages in a variety of hot melt adhesive applications.

## *Polyvinyl Chloride Plastisols*

Velsicol's specialty Benzoflex® products are very useful for flooring and general purpose vinyl plastisol formulations.

Benzoflex 1046 and 284 are used in flooring in vinyl top coat formulations and as stain resistant plasticizers.

Benzoflex 131 is an effective product for plastisol viscosity reduction and low odor. Benzoflex 400 is very low in volatility while Benzoflex 354 works well in vinyls with exceptional resistance to fabric dye migration.

Benzoflex 2-45 also is compatible with and an excellent solvator for polyvinyl chloride. Flexible vinyl formulations based on Benzoflex 2-45 can be processed quicker and/or at lower temperatures than vinyls based on di-2-ethylhexyl phthalate. Benzoflex 2-45 is resistant to extraction from the vinyl by aliphatic and oily solvents.

## *Polyurethane*

Benzoflex 9-88 SG is recommended for cast polyurethane applications that require minimum cure interference and maximum compatibility. The excellent degree of compatibility in cast polyurethane systems allows the use of Benzoflex 9-88 SG at high levels in order to achieve durometer readings ranging as low as 20-25 Shore A hardness for graphic art printing rolls. Benzoflex 9-88 SG demonstrates excellent inert filler acceptance, which generally provides both good wear characteristics and lower formulation costs. Benzoflex 9-88 SG also contributes improved tear strength, better rebound and reduced swell with certain solvents. It is adaptable to both metering and hand batch polyurethane mix systems.

Benzoflex 9-88 SG is recommended for polyurethane uses such as business machine rolls, printing rolls, duplicating rolls, gaskets and seals, coating rolls, drive rolls, low and medium durometer mechanical goods and feed rolls.

## *Varnishes*

Benzoflex® P-200 is a clear, low volatility plasticizer, which is compatible with several polymers such as polyvinyl chloride, polyvinyl acetate, phenolformaldehyde and some alkyd resins.

Use of Benzoflex P-200 provides improvement in flexibility, flex strength and heat distortion values without sacrificing electrical properties.

## *Adhesives*

Benzoflex® P-200 also is used in PVA adhesives to improve adhesion characteristics to polyolefin surfaces. Milk carton adhesives, for example, is the type of latex adhesive in which the Benzoflex P-200 may be used.

The Benzoflex P-200 also is useful in alkyd-modified phenolformaldehyde varnishes.

Benzoflex 2-45, diethylene glycol dibenzoate, is a plasticizer known for its excellent compatibility with polyvinyl acetate homopolymer and copolymer emulsions. Benzoflex 2-45 plasticizer-based adhesives have excellent quick grab and set times. While Benzoflex 2-45 does thicken polyvinyl acetate emulsions, the adhesives are comparatively stable.

## *Latex Coatings*

Velate® 262 is an effective, efficient coalescent for all latex paints. The advantage of using Velate 262 as a coalescent versus the alcohol/isobutyric acid ester is Velate 262's good, low odor characteristics. When incorporated into paint and then applied, the odor dissipates quickly.

In all the paint systems tested, Velate 262 performed overall as well or better than the other coalescents. Velate 262 is clearly efficient at providing low-temperature coalescence to a variety of paint systems.

## *Hot Melt Adhesives*

Benzoflex 352 is a white crystalline solid with a very high melt point that can offer performance advantages in polyamide-based hot melts. Incorporating Benzoflex 352 into hot melt adhesive systems provides fast set times due to its high degree of crystallinity and high melt point. Additionally, the white color tends not to darken light polyamides and the flaked form is easily incorporated in mixing or extrusion equipment.

Benzoflex 352 reduces viscosity and improves wetting while extending the bond-forming window without dramatically slowing setting speed as dimer acid and most other solid and liquid plasticizers do.

Additionally, Benzoflex 352 serves as a flow improvement additive in powder coatings as well as a processing aid in plastics.

In hot melt systems, Benzoflex 352 can provide:

- fast set times, good open times
- effective molten viscosity reduction
- high SAFT fail temperatures
- high block temperatures of delayed tack adhesives
- excellent strength of bonds.

# Application Guide

## Specialty Benzoate Application Guide

	Benzoflex 9-88 SG	Benzoflex 131	Benzoflex 2-45	Benzoflex 284	Benzoflex 354	Benzoflex 400	Benzoflex 6000	Benzoflex P-200	Benzoflex 1046	Velate 262
<b>Adhesives</b>										
PvAc Polyalethin	◆	◆	◆	◆		◆		◆		
<b>Caulk</b>										
Acrylic		◆		◆						
<b>Sealants</b>										
Automotive	◆			◆		◆	◆		◆	
<b>Vinyl</b>										
PVC Plastisol	◆	◆	◆	◆	◆	◆				
Flooring	◆	◆	◆	◆			◆		◆	
<b>Other</b>										
Castable Polyurethane	◆			◆		◆	◆			
Reactive Systems	◆			◆						
Acrylic Coating					◆	◆				
Plastisols		◆		◆	◆		◆		◆	
Peroxide Carrier		◆								◆
Latex Paints		◆								◆
Floor Polish										

Benzoflex® and Velate® are registered trademarks of Velsicol Chemical Corporation.



## *FDA Status*

Benzoflex® 9-88 SG and 2-45 are not considered a hazardous substance as defined by either the Federal Hazardous Substances Act or by the Department of Transportation under 49CFR. Both are approved for use in food packaging adhesives to the limitations defined in 21CFR175.105. Benzoflex 9-88 SG and 2-45 also are approved by the FDA for use as a component of paper and paperboard packaging directly in contact with food subject to the limitations as defined in 21CFR176.170 and 21CFR176.180.



VELSICO CHEMICAL CORPORATION  
SPECIALTY BENZOATE ESTERS

*Velsicol has developed guidelines to help ensure the safe handling, storage and transportation of its products. Information is available through Storage and Handling guidelines and Material Safety Data Sheets. Should there be any questions or concerns about the use or handling of Velsicol products, contact the worldwide headquarters at (800) 843-7759 or fax to (847) 298-9014.*

*The information in this brochure is, to the best of our knowledge, true and accurate. The representations about the products are based on test results achieved under laboratory practices supervised and controlled by Velsicol Chemical Corporation. Since preparation or conditions of use of their formulations may vary, Velsicol is unable to guarantee the same performance as indicated. Nothing contained herein shall constitute a guarantee or warranty with respect to the products or its formulations' uses, nor does Velsicol assume any liability therefore. The user is responsible for determination of suitability of any material or practice for a specific purpose and for adoption of such safety precautions as may be necessary. Material Safety Data Sheets are available for Velsicol products mentioned in this brochure. Users of these products are urged to study and use the information in the Material Safety Data Sheets. Velsicol does not warrant against infringement of any patent which might arise by the use of Velsicol's products in any combination with other products or arising in the operation of any process.*

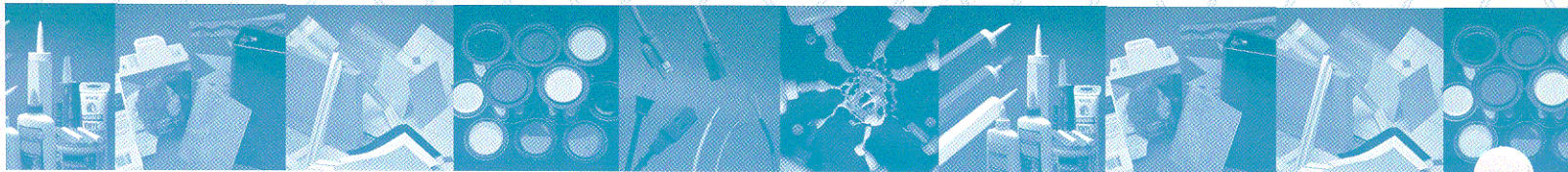
MARKETED BY  
**HARWICK STANDARD  
DISTRIBUTION CORPORATION**

60 S. Seiberling Street • Akron, Ohio 44305



**VELSICOL**  
CHEMICAL CORPORATION

**10400 W. Higgins Road, Suite 600  
Rosemont, Illinois 60018-3713 USA  
[www.velsicol.com](http://www.velsicol.com)**





# Harwick Standard Distribution Corporation

## Plasticizers

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.

### Non-Phthalate C-9

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer® DHIN	1-2 cyclohexane dicarboxylic acid diisononyl ester	R-1,2/P-1	✓						Performance similar to DOP in NBR compounds

### Adipates

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer® DOA	Di-2 ethylhexyl adipate	R-1,2/P-1,2	✓	✓					FDA, low water extraction, UV stability
Merrol® 4206 (DBEA)	Dibutoxyethyl adipate	R-1,2,3/P-2		✓					
Polycizer DBEEA Merrol 4226	Dibutoxyethoxyethyl adipate	R-1,2,3		✓	✓	✓	✓		

### Azelates

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Merrol DOZ-E	Di-2 ethylhexyl azelate	R-1,2/P-1,2	✓	✓	✓				Excellent low temp

#### Polymer Usage Key

R-1	NBR, NBR/PVC
R-2	CR, CPE, CSM
R-3	ECO, Fluoroelastomers, Polyacrylates

#### Polymer Usage Key

P-1	PVC
P-2	PVAC, PS, ABS, Cellulosics
P-3	Eng, Resins, Polyester, Alloys

## Benzoates

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Benzoflex® 9-88	Dipropylene glycol dibenzoate	R-1/P-1,2			✓			✓	Polyurethanes
Benzoflex 50	Diethylene/ dipropylene glycol dibenzoate	R-1/P-1,2			✓			✓	Water-based adhesives
Benzoflex 2088	Diethylene glycol dibenzoate, triethylene glycol dibenzoate, dipropylene glycol dibenzoate	R-1/P-1,2			✓	✓		✓	High solvator, low VOC's, FDA

## Chlorinated Paraffins

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Flame Resistance	High Solvating	Miscellaneous
Chloro Flo/ Paroil Series	Liquid chlorinated paraffins	R-2/P-1	✓		✓		✓		

## Mono-Esters

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer Butyl Oleate	N-butyl oleate	R-2/P-2		✓					Primary light color plasticizer for polychloroprene
Polycizer MO	Vegetable Oil	R-2		✓	✓		✓	✓	Low & high temp for polychloroprene
Plasticizer OLN	Oleyl nitrile	R-1				✓		✓	Low & high temp for polychloroprene
Natoflex® IOT	Isooctyl tallate	R-1,2	✓	✓					
Merrol 818T	Alkyl tallate	R-1/P-2	✓	✓					

### Polymer Usage Key

R-1	NBR, NBR/PVC
R-2	CR, CPE, CSM
R-3	ECO, Fluoroelastomers, Polyacrylates
P-1	PVC
P-2	PVAC, PS, ABS, Cellulosics
P-3	Eng, Resins, Polyester, Alloys

## Petroleum Process Oils

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Stan-Lube Series	Paraffinic oils	Non-polar	✓						Light color, good for EPRs
Stan-Plas Series	Naphthenic oils	R-1	✓						General Processability
Duoprime® Series	White oils	Non-polar	✓						FDA

## Phosphate Esters

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Flame Resistance	High Solvating	Miscellaneous
Lindol®	Tricresyl phosphate	P-1,2	✓		✓		✓	✓	
Phosflex® 41L Merrol 521	Isopropylated triaryl phosphate	R-1,2/P-1					✓		
Phosflex T-BEP	Tributoxyethyl phosphate	R-1,2,3/P-1,2		✓			✓	✓	
Phosflex 71-B	Butylated triphenyl phosphate	R-1,2/P-1					✓		
Phosflex 362	2-ethyhexyl diphenyl phosphate	R-1,2/P-1,2					✓		
Phosflex 390	Isodecyl diphenyl phosphate	R-1,2/P-1,2					✓		

### 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 process that is recommended herein.

### Polymer Usage Key

R-1	NBR, NBR/PVC
R-2	CR, CPE, CSM
R-3	ECO, Fluoroelastomers, Polyacrylates
P-1	PVC
P-2	PVAC, PS, ABS, Cellulosics
P-3	Eng. Resins, Polyester, Alloys

## Phthalates

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Merrol DAP	Diallyl phthalate	R-1,2/P-3						✓	Co-curing
Polycizer DBP Merrol DBP	Di-n-butyl phthalate	R-1,2/P-1,2	✓					✓	Good emollient for cosmetics
Polycizer DIDP	Diisodecyl phthalate	R-1,2/P-1,2			✓	✓			Also E grade
Polycizer DINP Merrol DINP	Disisononyl phthalate	R-1,2/P-1,2			✓				
Polycizer DOP Merrol DOP	Di-2-ethylhexyl phthalate	R-1,2/P-1,2	✓						
Polycizer DUP	Diundecyl phthalate	R-1,2/P-1,2		✓	✓		✓		Low fogging Also CA grade

## Polymeric

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Permeability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Admex® P-27	Polyester adipate	R-1/P-1,2				✓			High purity, good electrical properties
Admex 409	Polyester adipate	R-1/P-1,2	✓			✓		✓	Good electrical properties
Admex 412	Polyester adipate	R-1/P-1		✓	✓				Low viscosity, easy processing
Amdex 429	Polyester adipate	R-1,2/P-1,2				✓			Non-fogging, humidity resistance
Admex 523	Mixed polyester	R-1/P-1,2	✓			✓	✓		Low viscosity
Admex 760	Polyester adipate	R-1,2/P-1,2			✓	✓			Excellent permanence, low water extractability
Admex 761	Polyester adipate	R-1/P-1,2					✓		
Admex 770	Mixed polyester	R-1,2/P-1,2			✓	✓			Excellent weatherability (decals)
Admex 775	Mixed polyester	R-1/P-1,2							Excellent resistance to aqueous & organic solvents
Admex 910-001	Mixed polyester	R-1/P-1,2					✓		Low water extraction
Admex 1723	Mixed polyester	R-1/P-1,2			✓				Printability
Admex 2632	Mixed polyester	R-1/P-1,2	✓						FDA

## Polymeric (continued)

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Permeability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Admex 6187	Polyester adipate	R-1/P-1,2				✓	✓		Solvent & oil resistance
Admex 6985	Polyester adipate	R-1/P-1,2				✓	✓	✓	Very low volatility
Admex 6994	Mixed polyester	R-1/P-1,2				✓			Mar resistance, low fogging
Admex 6995	Polyester adipate	R-1/P-1,2			✓				UV weatherability
Admex 6996	Polyester adipate	R-1/P-1,2		✓					Printability
Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Merrol P-6320	Polyester adipate	R-1,2/P-1		✓		✓			Solvent & oil resistance, low temp flexibility
Merrol P-6412	Polyester adipate	R-1,2/P-1,2				✓			Medium viscosity, FDA
Merrol P-6410	Polyester adipate	P-1,2			✓	✓			
Merrol P-6420	Polyester adipate	P-1				✓			Good color

## Sebacates

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/ Flexibility	Low Volatility	Low Extraction	Heat Aging Resistance	High Solvating	Miscellaneous
Polycizer DBS	Di-n-butyl sebacate	R-1,2/P-1,2		✓				✓	FDA
Polycizer DOS Merrol DOS	Di-2-ethylhexyl sebacate	R-2/P-1,2	✓	✓		✓			Low temp greases & caulks

Harwick Standard Distribution Corporation

[www.harwickstandard.com](http://www.harwickstandard.com)

330-798-9300

### Polymer Usage Key

R-1	NBR, NBR/PVC
R-2	CR, CPE, CSM
R-3	ECO, Fluoroelastomers, Polyacrylates
P-1	PVC
P-2	PVAC, PS, ABS, Cellulosics
P-3	Eng, Resins, Polyester, Alloys



## Specialty

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/Flexibility	Permeability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Plasticizer SC-B	Triethyleneglycol dicaprate/caprylate	R-1,2,3		✓				✓	FDA
Plasticizer SC-E	Triethyleneglycol di 2-ethylhexanoate	R-1,2,3		✓					Flexibility over a wide temp range
Hercoflex® 600	Pentaerythritol ester of fatty acids	R-1,2		✓	✓	✓	✓	✓	Excellent low and high temp
Hercoflex 707, 707A	Pentaerythritol ester of fatty acids	R-1,2		✓	✓	✓	✓	✓	Excellent low and high temp
Polycizer ESO Merrol E-68	Epoxidized soybean oil	R-1/P-1,2,3			✓	✓		✓	Good heat stabilizer

## Trimellitates

Tradename(s)	Chemical Name	Polymer Usage	General Purpose	Low Temperature/Flexibility	Permeability	Migration Resistance	Low Extraction	Heat Aging	Miscellaneous
Polycizer TOTM	Tri-2-ethylhexyl trimellitate	R-1,2/P-1,2			✓		✓	✓	Also E&CA grades, excellent water resistance
Merrol 810TM-E	Tri(n-octyl/n-decyl) trimellitate	R-2		✓	✓		✓	✓	Oxidation resistance, excellent water resistance
Polycizer TINTM	Trisononyltrimellitate	R-1,2/P-1,2			✓	✓	✓	✓	



## Harwick Standard Distribution Corporation

60 South Seiberling Street

P.O. Box 9360

Akron, OH 44305-0360

Phone: 330-798-9300

Fax: 330-798-0214

Technical Fax: 330-798-9328

Sales Fax: 330-798-4089

[www.harwickstandard.com](http://www.harwickstandard.com)

Polymer Usage Key	
R-1	NBR, NBR/PVC
R-2	CR, CPE, CSM
R-3	ECO, Fluoroelastomers, Polyacrylates
P-1	PVC
P-2	PVAC, PS, ABS, Cellulosics
P-3	Eng, Resins, Polyester, Alloys

® Permission to use registered tradename(s) of products with such registration indicated has been granted by the rightful owners.