



HARWICK STANDARD
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ISO 9001-2000
REGISTERED

PLASTICIZER SC-B

Plasticizer SC-B, a capric-caprylic diester of triethylene glycol, is generally recognized as an ideal softener and low temperature plasticizer for SBR, nitrile, neoprene and natural rubber. In addition, it has the effect of reducing the heat hardening properties of these polymers. As a result, it is used in formulations designed to meet automotive, aeronautical and government specifications, including critical FDA applications required under 21 CFR 177.2600.

TYPICAL PROPERTIES

| | |
|-------------------------------|--------|
| Specific Gravity @ 15°C | 0.967 |
| Color, Gardner | 1.5 |
| Free Fatty Acid (as Oleic), % | .10 |
| Saponification Value | 265 |
| Hydroxyl Value | 10 |
| Viscosity (SUS @ 20°C) | 90 |
| Refractive Index @ 25°C | 1.4460 |
| Moisture, % | 0.1 |

Continued.....

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA THAT ARE BELIEVED TO BE ACCURATE AND RELIABLE. APPLICATION AND PERFORMANCE INFORMATION ARE PROVIDED ONLY AS A GUIDE, SINCE THE CONDITIONS OF USE ARE BEYOND THE CONTROL OF HARWICK STANDARD DISTRIBUTION CORPORATION. CONSEQUENTLY, HARWICK STANDARD MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE GOODS OR USES OF THE GOODS OR THE PERFORMANCE OF THE GOODS AND MAKES NO WARRANTIES OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY. BUYER ACKNOWLEDGES THAT HARWICK STANDARD WILL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, DIRECT OR SPECIAL DAMAGES ARISING, DIRECTLY OR INDIRECTLY, IN RESPECT TO SUCH GOODS OR THE USE OR FAILURE THEREOF, WHETHER BASED ON BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE.



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PLASTICIZER SC-B

Continued

OTHER APPLICATIONS FOR PLASTICIZER SC-B:

- Highly recommended for use as a plasticizer in general vinyl compounding, for any application requiring extreme low temperature flexibility combined with very high plasticizing action.
- Imparts excellent "hand" and drape to vinyl films and is eminently suited to curtaining and upholstery materials, tablecloths, fabric coatings and artificial leathers.
- Acts as its own lubricant in vinyl compositions and is used for this purpose in high temperature calendaring and embossing operations.
- Has considerable value in plastisols and organosols where, apart from giving low viscosity formulations, it is also used as a viscosity control agent.
- Very effective in all pigmented systems. It is outstanding in dispersion, pastes, and emulsion systems and is also used as a viscosity control agent.
- Can be emulsified and then employed very effectively for the plasticizing of synthetic latices which are used in the paint, protective coatings and other allied industries.
- Enhances the general quality and processability of the product when used in small concentrations, regardless of other plasticizers in the system.
- Used in nitrocellulose lacquers to give increased flexibility at normal and subnormal temperatures.

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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 |

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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 | | | ✓ | ✓ | ✓ | ✓ | |



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| P-1 | PVC |
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| P-3 | Eng, Resins, Polyester, Alloys |

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