

## **GIOVAREZ® BTB-50\***

(INCI: Isododecane (and) Behenyl Methacrylate/t-Butyl Methacrylate Copolymer)

**GIOVAREZ® BTB-50** is a 50% solution of an acrylic polymer (Alkyl Methacrylate Copolymer in Isododecane). It is a clear, almost water-white liquid, which dries to a glossy, clear, continuous, hard but flexible, water-insoluble film. When formulated into cosmetic products, the polymer film becomes more flexible due to oils and esters present in the formulated product which act as plasticizers for the acrylic film. The film forming and skin adhesion properties of **GIOVAREZ® BTB-50** also suggest its use in colostomy adhesives.

**GIOVAREZ® BTB-50** can be diluted and .20.extended with esters such as **PELEMOL® IPM** (Isopropyl Myristate), **PELEMOL® 899** (Ethylhexyl Isononanoate and Isononyl Isononanoate), **PELEMOL® IN-2** (Isononyl Isononanoate), **PELEMOL® PTO** (Pentaerythrityl Tetraethylhexanoate).

Trade Name	<b>GIOVAREZ® BTB-50</b>
INCI	Behenyl Methacrylate/t-Butyl Methacrylate Copolymer
CAS #	13475-82-6, 928122-87-6
EINECS#	Polymer Exempt

### **APPLICATIONS**

The use of **GIOVAREZ® BTB-50** is strongly indicated in:

- Mascara
- Eye Liner Pencils
- Barrier Creams
- Sunscreens
- Lipstick
- Make-up
- Coating and Fillers
- Colostomy Adhesives

\* **GIOVAREZ® BTB-50** has been successfully formulated into several transfer resistant and waterproof products such as:

- Transferproof Lipstick
- Waterproof Mascara
- Waterproof Sunscreen
- Transferproof Leg Make-up

Formulations can be found attached to this Phoenomenon.

**\*Patent Pending**

## TYPICAL PROPERTIES

Refractive Index	1.438
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## SPECIFICATIONS

Color, Gardner	2 maximum
Non-volatiles %	50.0 ± 2
Viscosity	10,000 cp maximum

## SOLUBILITY

Castor Oil	i
Ethanol	i
Isododecane	m
Mineral Oil	i
Propylene Glycol	d
Isopropyl Myristate	m
Water	i
Cyclomethicone	i
Dimethicone	i
Butyl Acetate	m

m	=	Miscible (soluble in all proportions)			
d	=	Dispersible	i	=	Insoluble

## SAFETY

*RIPT Study (50 human subjects) conclusions follow:	
SKIN IRRITATION	NON-PRIMARY IRRITANT
SKIN SENSITIZATION	NON-PRIMARY SENSITIZER

**GIOVAREZ® BTB-50** can be considered for use in Hypoallergenic products.

**HET-CAM** studies\*\* have shown **GIOVAREZ® BTB-50** to have practically no ocular irritation potential in vivo when tested on 100% basis.

\* Studies conducted by AMA Labs., 216 Congers Rd. New City, NY 10956

\*\***HET- CAM** studies were performed by Consumer Product Testing Co., 70 New Dutch Lane, Fairfield, NJ.

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 9.22/08  
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**PHOENIX CHEMICAL**  
**WATERPROOF SUNSCREEN SPF 30**  
**PTC3-70/1**

	<b>Trade Name</b>	<b>CTFA Name</b>	<b>Company</b>	<b>Percent</b>
A	Distilled Water	Water	House	40.15
A	Butylene Glycol	Butylene Glycol	House	2.00
A	Allantoin	Allantoin	House	0.10
A	Versene Na	Disodium EDTA	Dow Chemical	0.20
A	Methyl Paraben	Methyl Paraben	House	0.30
B	<b>PELEMOL P-49</b>	<b>Pentaerythrityl Tetraisononanoate</b>	<b>Phoenix Chemical</b>	7.00
B	Arlacel 165	Glyceryl Stearate, PEG-100 Stearate	Uniqema	8.00
B	DC 200/10cs	Dimethicone	Dow Corning	3.00
B	Lanette O	Cetearyl Alcohol	Cognis	2.00
B	<b>PELEMOL II</b>	<b>Isostearyl Isostearate</b>	<b>Phoenix Chemical</b>	2.00
B	Tween 60	Polysorbate 60	Uniqema	0.80
B	Propyl Paraben	Propyl Paraben	House	0.20
C	DC65ZCI	Zinc Oxide, Cyclomethicone PEG/PPG-18/18 Dimethicone Dimethicone	Kobo	4.00
C	DC45TS	Titanium DiOxide Cyclomethicone Polyglyceryl-6 Polyricinoleate Stearic Acid Aluminum Hydroxide	Kobo	5.00
C	Parsol MCX	Ethylhexyl Methoxycinnamate	Roche	5.45
C	Uvinol M-40	Benzophenone-3	BASF	4.00
C	Escalol 587	Ethylhexyl Salicylate	ISP	4.00
C	Escalol 597	Octacrylene	ISP	5.00
D	<b>GIOVAREZ BTB-50</b>	<b>Behenyl Methacrylate/t-Butyl Methacrylate Copolymer</b>	<b>Phoenix Chemical</b>	6.00
E	Germaben II	Propylene Glycol Diazolidinyl Urea Methyl Paraben Propyl Paraben	ISP	0.80

100.00

**Procedure:**

Heat phase A to 75-80°C. Heat phase B in separate vessel to 75-89°C.  
 Premix phase C and mix until uniform. (homomix) Once uniform add phase C to phase B and phase D to phase BC. Maintain temp of phase BCD of 75-80°C.  
 Add phase BCD to Phase A with homomixing. Mix 5 minutes. Begin sweep mixing and cool batch to 50°C. Add phase E to batch. Cool to 30-35°C drop batch.

**PHOENIX CHEMICAL  
WATERPROOF SUNSCREEN SPF 30  
PTC3-146/1**

	<b>Trade Name</b>	<b>CTFA Name</b>	<b>Company</b>	<b>Percent</b>
A	Distilled Water	Water	House	40.15
A	Butylene Glycol	Butylene Glycol	House	2.00
A	Allantoin	Allantoin	House	0.10
A	Versene Na	Disodium EDTA	Dow Chemical	0.20
A	Methyl Paraben	Methyl Paraben	House	0.30
B	<b>PELEMOL P-49</b>	<b>Pentaerythrityl Tetraisononanoate</b>	<b>Phoenix Chemical</b>	8.00
B	Arlacel 165	Glyceryl Stearate, PEG-100 Stearate	Uniqema	8.00
B	DC 200/10cs	Dimethicone	Dow Corning	3.00
B	Lanette O	Cetearyl Alcohol	Cognis	2.00
B	<b>PELEMOL ICB</b>	<b>Isocetyl Behenate</b>	<b>Phoenix Chemical</b>	1.00
B	Tween 60	Polysorbate 60	Uniqema	0.80
B	Propyl Paraben	Propyl Paraben	House	0.20
C	DC65ZCI	Zinc Oxide, Cyclomethicone PEG/PPG-18/18 Dimethicone Dimethicone	Kobo	4.00
C	DC45TS	Titanium DiOxide Cyclomethicone Polyglyceryl-6 Polyricinoleate Stearic Acid Aluminum Hydroxide	Kobo	5.00
C	Parsol MCX	Ethylhexyl Methoxycinnamate	Roche	5.45
C	Uvinol M-40	Benzophenone-3	BASF	4.00
C	Escalol 587	Ethylhexyl Salicylate	ISP	4.00
C	Escalol 597	Octacrylene	ISP	5.00
D	<b>GIOVAREZ BTB-50</b>	<b>Behenyl Methacrylate/t-Butyl Methacrylate Copolymer</b>	<b>Phoenix Chemical</b>	6.00
E	Germaben II	Propylene Glycol Diazolidinyl Urea Methyl Paraben Propyl Paraben	ISP	0.80
				100.00

**Procedure:**

Heat phase A to 75-80°C. Heat phase B in separate vessel to 75-89°C. Premix phase C and mix until uniform. (homomix) Once uniform add phase C to phase B and phase D to phase BC.

Maintain temp of phase BCD of 75-80°C. Add phase BCD to Phase A with homomixing.

Mix 5 minutes. Begin sweep mixing and cool batch to 50°C. Add phase E to batch. Cool to 30-35°C drop batch.

**PHOENIX CHEMICAL  
WATERPROOF MASCARA  
PTC3-63/1**

	Trade Name	INCI Name	Company	Percent
A	<b>PELEMOL GTB</b>	<b>Tribehenin</b>	<b>Phoenix Chemical</b>	8.00
A	<b>PELEMOL H S A</b>	<b>Hydroxystearic Acid</b>	<b>Phoenix Chemical</b>	6.00
A	Stearic Acid	Stearic Acid	House	10.00
A	Beeswax 422P	Beeswax	S&P	6.00
A	<b>PELEMOL D-2000</b>	<b>Polypropylene Glycol 2000 Dimer Dinoleate</b>	<b>Phoenix Chemical</b>	1.00
A	<b>GIOVAREZ BTB-50</b>	<b>Behenyl Methacrylate/t-Butyl Methacrylate Copolymer</b>	<b>Phoenix Chemical</b>	10.00
	<b>PHOENOMULSE CE-1</b>	<b>Polyhydroxystearic Acid, Isononyl Isononanoate, Ethylhexyl Isononanoate, Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate/Methy Perfluorobutyl Ether Methyl Perfluoroisobutyl Ether</b>	<b>Phoenix Chemical</b>	8.00
A	Germaben II	Propylene Glycol, Diazolidinyl Urea Methyl Paraben Propyl Paraben	ISP	1.00
B	Distilled Water	Water	House	30.50
B	Keltrol F	Xanthan Gum	CP Kelco	0.30
C	33-5198	Iron Oxide	Sun Chemical	10.00
C	Arlacel 83	Sorbitan Sesquioleate	Uniqema	0.50
D	Distilled Water	Water	House	4.70
D	TEA	Triethanolamine 99%	House	4.00
				100.00

**Procedure:**

Heat phase B to 80°C with homomixing once dispersed add phase C & D and homomix to disperse pigment. Heat phase A to 85°C then add phase C to Phase AB slowly. Homomix for 5 minutes and switch to sweep. Add phase E and cool to 35°C.

**PHOENIX CHEMICAL  
TRANSFERPROOF LIPSTICK  
PTC3-73/1**

	Trade Name	INCI Name	Company	Percent
A	Synthetic wax 170	Polyethylene	S&P	7.00
A	Ceresin 1022	Ceresin	S&P	3.00
A	Ozokerite 1020P	Ozokerite	S&P	2.00
A	Paraffin SP-674	Paraffin	S&P	2.00
A	<b>PELEMOL H S A</b>	<b>Hydroxystearic Acid</b>	<b>Phoenix Chemical</b>	2.00
A	DC 5562 Carbinol Fluid	Bis-Hydroxyethoxypropyl Dimethicone	Dow Corning	1.00
A	<b>PELEMOL TGC</b>	<b>Trioctyldodecyl Citrite</b>	<b>Phoenix Chemical</b>	4.50
A	Vit. E	Tocopherol acetate	Rohm & Haas	0.10
A	<b>PELEMOL P-49</b>	<b>Pentaerythrityl Tetraisononanoate</b>	<b>Phoenix Chemical</b>	2.05
A	<b>PECOSIL G</b>	<b>Dimethicone, Cyclomethicone, Phenyl Trimethicone, Trimethylsiloxysilicate</b>	<b>Phoenix Chemical</b>	20.00
A	<b>PELEMOL D-2000</b>	<b>Polypropylene Glycol 2000 Dimer Dinoleate</b>	<b>Phoenix Chemical</b>	2.30
A	<b>PELEMOL DP-144B</b>	<b>Dipentaerythrityl Tetrabeheenate Polyhydroxystearate</b>	<b>Phoenix Chemical</b>	4.00
B	Plearglo UVR	Bismuth Oxychloride	Phoenix Chemical	4.00
B	Silk Mica	Mica	Rona	2.65
C	DC345	Cyclomethicone	Dow Corning	15.10
C	<b>GIOVAREZ BTB-50</b>	<b>Isododecane (and ) Behenyl Methacrylate/t-Butyl Methacrylate Copolymer</b>	<b>Phoenix Chemical</b>	10.00
C	<b>PHOENOMULSE CE-1</b>	<b>Polyhydroxystearic Acid, Isononyl Isononanoate, Ethylhexyl Isononanoate, Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate/Methy Perflurobutyl Ether Methyl Perfluoroisobutyl Ether</b>	<b>Phoenix Chemical</b>	8.00
D	Red 7 19-011	FD&C Red 7	Sun	1.10
D	Red I/O	Iron Oxide	Sun	1.55
D	Black I/O	Iron Oxide	Sun	0.20
D	Brown 33-115	Iron Oxide	Sun	0.75
D	TiO2	Titanium Dioxide	Sun	1.00
D	yellow 5	FD&C Yellow 5	Sun	0.20
E	MP-29	TiO <sub>2</sub> , Mica, Iron Oxides	Rona	5.50
				100.00

**Procedure:**

Heat phase A to 80 -85 °C. Once clear add phase B and Phase D  
 Rollermill 3x to disperse pigments. Once pigments are ground heat back to 80 - 85°C  
 add phase C and phase E. Cool to 65 - 70°C and pour samples. Keep batch covered as

much as possible to minimize evaporation.

## PHOENIX CHEMICAL TRANSFERPROOF LEG MAKEUP PTC3-71/1

	Trade Name	INCI Name	Company	Percent
A	Water	Di Water	House	35.00
A	NaCl	NaCl	House	2.00
A	Hampene Na3	Na3EDTA	House	0.05
A	Glycerine	Glycerine	House	3.00
A	BG	Butylene Glycol	House	3.00
A	Germizide PSB	Phenoxyethanol, Chlorphenesin, Benzoic Acid, Butylene Glycol	Engelhard	1.00
B	<b>PECOSIL G-5</b>	<b>Dimethicone/Phenyl Methicone/ C30-45 Olefin</b>	<b>Phoenix Chemical</b>	<b>3.00</b>
B	<b>PHOENOMULSE CE-1</b>	<b>Polyhydroxystearic Acid, Isononyl Isononanoate, Ethylhexyl Isononanoate, Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate/Methy Perfluorobutyl Ether Methyl Perfluoroisobutyl Ether</b>	<b>Phoenix Chemical</b>	<b>9.45</b>
B	DC45TS	Titanium DiOxide Cyclomethicone Polyglyceryl-6 Rolynicinoleate Stearic Acid Alumium Hydroxide	Kobo	6.00
B	WE70U	Titanium Dioxide, Polyglyceryl-4, Cetyl PEG/Ppg-10/1 Dimethicone, Hexyl Laurate and Isopropyl Titanium Triisostearate	Kobo	5.00
B	WE70R	Iron Oxide, Polyglyceryl-4, Cetyl PEG/Ppg-10/1 Dimethicone, Hexyl Laurate and Isopropyl Titanium Triisostearate	Kobo	0.40
B	WE55Y	Iron Oxide, Polyglyceryl-4, Cetyl PEG/Ppg-10/1 Dimethicone, Hexyl Laurate and Isopropyl Titanium Triisostearate	Kobo	1.40
B	WE70B	Titanium Dioxide, Polyglyceryl-4, Cetyl PEG/Ppg-10/1 Dimethicone, Hexyl Laurate and Isopropyl Titanium Triisostearate	Kobo	0.20
B	Mica AS	Mica & Triethoxycaprylylsilane	LCW	3.00
B	<b>PECOSIL DCF 1818</b>	<b>Cyclomethicone &amp; PEG/PPG-18/18 Dimethicone</b>	<b>Phoenix Chemical</b>	<b>16.30</b>
B	<b>GIOVAREZ BTB-50</b>	<b>Behenyl Methacrylate/t-Butyl Methacrylate Copolymer</b>	<b>Phoenix Chemical</b>	<b>6.00</b>
B	<b>PECOSIL DB</b>	<b>Dimethiconal Behenate</b>	<b>Phoenix Chemical</b>	<b>3.20</b>
B	<b>PELEMOL P-49</b>	<b>Pentaerythrityl Tetraisononanoate</b>	<b>Phoenix Chemical</b>	<b>2.00</b>

100.00

**Procedure:**

Heat phase B to 50°C with homomixing. Heat phase A to 50°C

Slowly add phase A to phase B with homomixing for 5 minutes. Drop batch at 35°C.