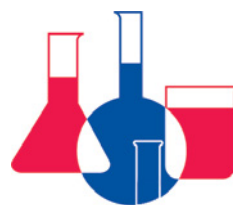




SIGNATURE ESTERS

Technical Bulletin



PROTACHEM ISP

(Isostearyl Palmitate)

PROTACHEM ISL

(Isostearyl Linoleate)

PRO-AQUA ISL

(Isosteareth-200 Linoleate)

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PROTACHEM ISP^[TM]

INCI Name: Isostearyl Palmitate

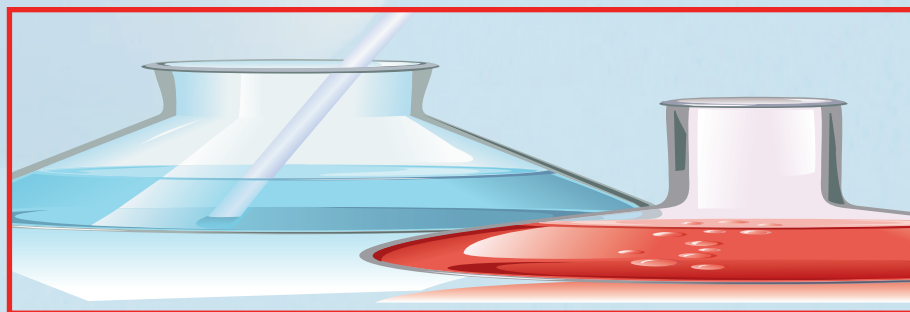
OIL SOLUBLE ESTER

Protachem ISP (*Isostearyl Palmitate*) is a non-comedogenic, saturated liquid emollient with an extraordinary skin feel and low freezing point. Virtually colorless, odorless, and tasteless, suggests ideal use in lip products.

In stick formulations, Protachem ISP provides excellent pour and mold-release properties, while imparting remarkable spreadability.

Protachem ISP functions as a co-solubilizer for silicones and waxes in sunscreens, and may be considered to be an “oil-free” ingredient for cosmetics.

When incorporated into creams or lotions at levels as low as 3%, Protachem ISP imparts a light, silky emolliency, eliminating the greasy feel of mineral oil or other heavier esters.



Protachem ISP is derived from renewable, non-animal source raw materials which is a real plus in today's rapidly evolving consumer marketplace.

ELEGANT SILKY FEEL

PROTACHEM ISL ^[TM]

INCI Name: Isostearyl Linoleate

OIL SOLUBLE ESTER

Protachem ISL (Isostearyl Linoleate) is a medium viscosity plant derived ester with bifunctional properties (emolliency and moisturization).

It is an unusual emollient that combines the non-occlusive lubricity of a branched chain monoester with the full-bodied non-oily characteristics of a fatty acid ester.

Protachem ISL is derived from isostearyl alcohol and linoleic acid. Linoleic acid is required for maintenance of cutaneous barrier function. In insufficient amounts, skin becomes scaly, exhibits hyperproliferation and increased transepidermal water loss (TEWL).

Protachem ISL supplies this essential fatty acid to the skin which assists in repairing the Intercellular Moisture Barrier increasing the intrinsic moisturization of skin and reducing TEWL.

Protachem ISL has excellent pigment dispersing properties and may be used in various types of make-up, lip gloss, lipstick, mascara and blush formulations. It is highly recommended in creams or lotions where it can partially or totally replace mineral or plant oils that tend to be oily or greasy.

In sunscreen products, it can solubilize oil soluble sunscreen actives and helps to reduce the oiliness often associated with these products and provide a non-greasy emollient feel to skin while improving the water-resistant properties of the product.

MOISTURIZATION

PRO-AQUA ISL ^[TM]

INCI Name: Isosteareth 200 Linoleate

WATER SOLUBLE ESTER

Pro-aqua ISL (*Isosteareth-200 Linoleate*) is the sister product to our ever popular specialty emollient, **Protachem ISL** (*Isostearyl Linoleate*) which has been proven to deliver long-term moisturization to dry skin.

Due to the highly lipophilic nature of the **Protachem ISL**, this product was limited to use in emulsions and anhydrous systems - **until now**.

Pro-aqua ISL was developed to offer the same benefits of **Protachem ISL** in surfactant and water based formulations. **Pro-aqua ISL** can be used in clear shampoos and styling products to improve shine, in surfactant based bath and body products to impart a pleasant after-feel to the skin and in water based gel

Pro-aqua ISL also acts as an emulsifier or co-emulsifier in O/W lotions and creams

Typical Properties

Pro-aqua ISL is available in a pastille form and is readily water soluble.

Appearance:	Off-white colored pastille.
Color (Gardner):	3 Maximum
Melt Point:	50°C
pH (5% Aq. Sol.):	3.0 - 5.0

WATER SOLUBLE ESTER

SIGNATURE ESTERS_[tm]



Protachem ISP OIL SOLUBLE

Protachem ISP (Isostearyl Palmitate) is a non-comedogenic, saturated liquid emollient with an extraordinary skin feel and low freezing point. Virtually colorless, odorless, and tasteless, suggests ideal use in lip products. Functions as a co-solubilizer for silicones and waxes in sunscreens, and may be considered to be an "oil-free" ingredient for cosmetics.

When incorporated into creams or lotions at levels as low as 3%, ISP imparts a light, silky emolliency, eliminating the greasy feel of mineral oil or other heavier esters.



Protachem ISL OIL SOLUBLE

Protachem ISL (Isostearyl Linoleate) is a medium viscosity plant derived ester with bi-functional properties (emolliency and moisturization).

ISL supplies essential fatty acid to the skin which assists in repairing the Intercellular Moisture Barrier increasing the intrinsic moisturization of skin and reducing TEWL.

ISL has excellent pigment dispersing properties and may be used in various types of make-up, lip gloss, lipstick, mascara and blush formulations. It is highly recommended in creams or lotions where it can partially or totally replace mineral or plant oils that tend to be oily or greasy. In sunscreen products, it can solubilize oil soluble sunscreen actives and helps to reduce the oiliness often associated with these products and provide a non-greasy emollient feel to skin while improving the water-resistant properties of the product.



Pro-Aqua ISL WATER SOLUBLE

Pro-aqua ISL (Isosteareth-200 Linoleate) is the sister product to our popular Protachem ISL (Isostearyl Linoleate) which is proven to deliver long-term moisturization to skin. Due to the highly lipophilic nature of Protachem ISL this effect was excluded from use in surfactant based hair and skin care formulations.

Moisturizing Shampoo

Featuring Pro-Aqua ISL and Protapon SCI

Phase	Trade name	INCI name	% WT.
A1	Water	Aqua	212
A2	Pro-Aqua ISL	Isosteareth-200 Linoleate	20
A3	Protachem ES-2	Sodium Laureth Sulfate	80
A4	DL-Panthenol	Panthenol	12
A5	Protapon SCI	Sodium Cocoyl Isethionate	56
A6	Protachem EGDS	Glycol Distearate	16
A7	Protacide DMDMH	DMDM Hydantoin	12
			100.00%

MANUFACTURING PROCEDURE:

- 1) COMBINE THE INGREDIENTS IN PHASE A AND HEAT TO 160°. MIX UNTIL COMPLETELY MELTED AND UNIFORM. IT SHOULD APPEAR WHITE AND THICK. ADD EACH ONE SLOWLY.
- 2) LET IT REST. COOL TO ROOM TEMPERATURE.
- 3) FILL INTO COMPONENTS.

All information contained herein is intended primarily to demonstrate the utility of Protameen Chemical products. Suggestions for uses or applications are only opinions. The user is responsible for determining the suitability of these products for their own particular purpose. We assume no liability in the presentation of this data, nor should this information be constructed as granting license to practice any methods or compositions of matter covered by U.S. or foreign patents

Elegant Body Lotion

Featuring ProAqua ISL, Protachem ISP & Protachem ISL

Phase	Trade name	INCI name	% WT.
A1	DI Water	Water	695.00
A2	Protacide NA3 EDTA	Trisodium EDTA	2.00
A3	Glycerin USP	Glycerin	25.00
A4	DL-Panthenol	Panthenol	10.00
A5	ProAqua ISL	Isosteareth-200 Linoleate	10.00
A6	Protacide PSP Blend	preservative	10.00
A7	Protamer Z-10	Carbomer	8.00
B1	COCOA BUTTER (DEODORIZED)	Theobroma Cacao (Cocoa) Seed Butter	60.00
B2	Protachem ISL	Isostearyl Linoleate	40.00
B3	Protachem ISP	Isostearyl Palmitate	30.00
B4	Procol CS-W	Cetearyl Alcohol (and) Polysorbate 60	25.00/50.00
B5	Vitamin E USP	Tocopheryl Acetate	5.00
C1	TEA 99%	Triethylamine	5.00

MANUFACTURING PROCEDURE:

- 1) COMBINE THE INGREDIENTS IN PHASE A AND HEAT TO 65°-70°C. MIX UNTIL COMPLETELY MELTED AND UNIFORM.
- 2) COMBINE THE INGREDIENTS IN PHASE B AND HEAT TO 65°-70°C. MIX UNTIL COMPLETELY MELTED AND UNIFORM.
- 3) ADD PHASE B TO PHASE A UNDER PROPELLER MIXING
- 4) ADD PHASE C TO PHASE AB UNDER PROPELLER MIXING, MIXING UNTIL UNIFORM AND THICK
- 5) FILL INTO COMPONENTS

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