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Procipient®(Dimethyl Sulfoxide USP, Ph. Eur.) Grade Product Sheet

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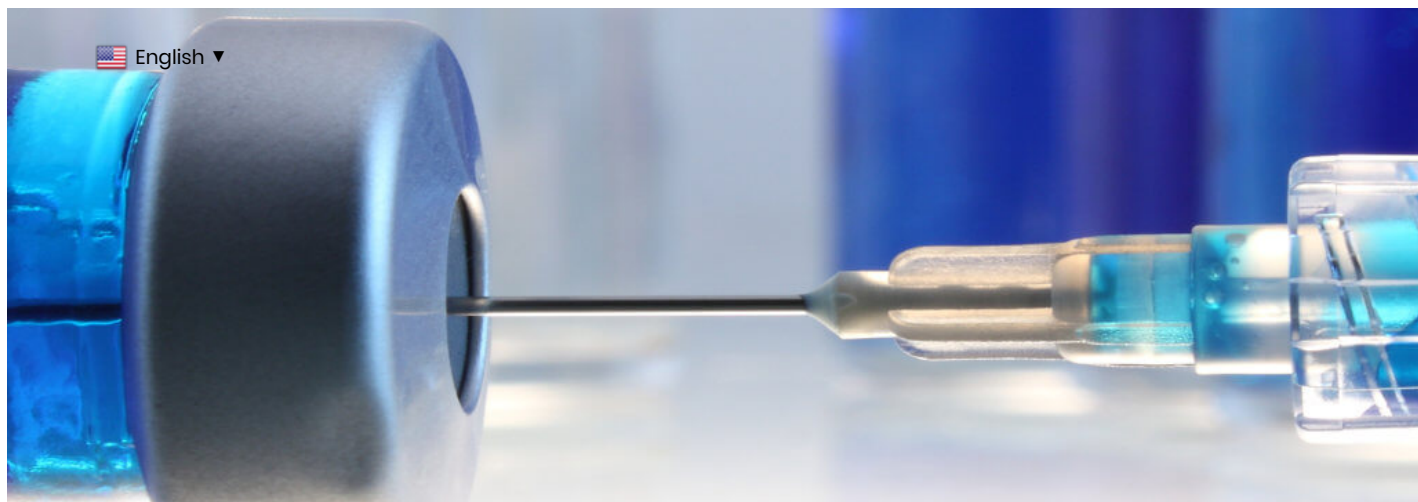
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> Procipient®(Dimethyl Sulfoxide USP, Ph. Eur.) Grade Product Sheet

The Right DMSO for Drug Delivery Application

Procipient®(Dimethyl Sulfoxide USP, Ph. Eur.) is the only grade of DMSO suitable for Healthcare and Drug Delivery applications. Gaylord Chemical's USP grade is the only DMSO that is manufactured under cGMP conditions, in compliance with API guidelines. Supported by a Drug Master File (DMF) on file with the FDA and Health Canada, the product conforms to both the USP and Ph. Eur. Monographs.

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Versatile


- As an Active Pharmaceutical Ingredient (API)
- Excipient in Drug Delivery Systems to enhance efficacy of therapeutic agents
- To solubilize active ingredients and polymers in drug delivery and Medical Devices
- Depot Delivery as an API solvent
- A Process aid in dosages and devices manufacture
- Cryopreservation in cell culture, vaccines and drug delivery, also in storage of human umbilical cord blood, hemopoietic stem cells, and biological tissue.

Procipient® Characteristics

API Solubility

Procipient® (Dimethyl Sulfoxide USP, PhEur) provides outstanding solubility for an extensive range of Active Pharmaceutical Ingredients

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(API)  Compatibility for polymers and excipients plus a list of API solubility measurements are available here (<https://www.gaylordchemical.com/literature/dmso-solubility-data/>).

Physical Properties

Procipient, an odorless DMSO, is a clear water-white liquid, of low viscosity (2.0 cP @ 25°C) having a density similar to water (1.0955 g / mL @ 25C). It is completely water miscible. DMSO has the ability to significantly depress the freezing point of water, and the high polarity of DMSO is responsible for its almost universal solvent properties.

Low Toxicity

DMSO is essentially non-toxic by all routes of administration. It is oxidized in the body and resulting metabolic products are excreted in the urine. Its absorption, distribution, metabolism, and elimination (ADME) properties have been studied extensively in both man and animals¹.

Procipient® Applications in Healthcare

Pharmaceutical Active

The product RIMSO-50™ contains Dimethyl Sulfoxide USP and is indicated for the symptomatic relief of patients with interstitial cystitis². The product is instilled directly into the bladder using a catheter or aseptic syringe.

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Drug Delivery English

DMSO has been described in new technology to produce anhydrous emulsions for the delivery of hydrolytically unstable drugs, or to provide reservoirs for transdermal delivery systems³.

DMSO continues to be evaluated as a penetration enhancer⁵ in transdermal formulations containing anti-inflammatory, steroidal⁶ and antiviral drugs⁷. It has also been formulated as a component of topical anesthetics⁸. Human skin irritation trials⁹ have shown that subjects experienced very low levels of skin irritation when subjected to DMSO / ethanol formulations having DMSO present at levels as high as 70%.

In the treatment of wounds, DMSO has been reported as a solvent for sprayable films and dressings used to promote healing of biological tissue¹⁰. Additionally, it has been patented as a penetrant in formulations designed to treat skin and mucosal lesions in a topical manner¹¹.

Medical Devices

DMSO has been used to dissolve medical polymers that precipitate in situ to form biodegradable implants¹². Such medical devices may be designed to aid in tissue regeneration¹³, or in the controlled release of active substances¹⁴.

Process Aid

Antisolvent methods which use DMSO to disperse a polymer in the formation of microcapsules have been described⁴.

Cryopreservation English

DMSO has been used to preserve a variety of cell types, including human bone marrow¹⁵, ovarian tissue¹⁶, pancreatic and platelet cells¹⁷, and hematopoietic stem and progenitor cells¹⁸. DMSO freely permeates the cell and protects intracellular organelles by mixing with water inside the cell. This depresses the freezing point of the medium, thus preventing damage to the cell from ice formation.

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