



PRODUCT DATA SHEET

EsoDant 55

DMDM HYDANTOIN

(INCI: 1,3-DIMETHYLOL-5,5-DIMETHYL HYDANTOIN)

EsoDant - 55

Product Code FP 003 | Synonym : DMDM Hydantoin | INCI : 1,3-Dimethylol-5,5-Dimethyl Hydantoin

Description :	EsoDant - 55 is a highly effective, water-soluble antibacterial preservative. EsoDant - 55 is specifically engineered for use in Personal Care Products and Cosmetic formulations to provide protection across a wide range of pH and temperature. EsoDant - 55 is globally approved and has a long history of safe use across the entire range of rinse-off and leave-on personal care formulations.		
Features and Benefits	EsoDant - 55 demonstrates the following features and benefits in personal care products: • Low cost-in-use • Long-lasting activity against Gram-negative and Gram-positive bacteria • Excellent toxicity and safety profile • Non-irritating to eyes, skin, or mucous membranes • Global regulatory approvals • Easy-to-use, water-soluble liquid • Stable and effective from pH 3 - 10 • Temperature stable to 80°C		
Application / Use	EsoDant - 55 provides superior product preservation against microbiological attack and is easily incorporated into water-based personal care products, such as: • Body washes and liquid soaps • Shampoos and conditioners • Shaving creams, gels, and lotions • Creams and lotions • Wet wipes • Colour cosmetics • Sun care products • Floor cleaners • Window / glass cleaners • Home care detergents • Shampoo / detergents for automobiles		
Physical properties and Product Specifications	Appearance Clear colorless liquid Odour Low characteristic Colour APHA Not more than 10 pH as is 6.5 - 7.5 Water Content (KFR) 44.0 - 46.0 % w/w Free formaldehyde Max 1.0 % w/w Total formaldehyde 17.0 - 19.0 % w/w Active matter 53 % Minimum Density at 25°C 1.145 - 1.160 gm/ml Gram Negative (CFU/GRAM) Should be absent Yeast & Mold (CFU/GRAM) Not more than 100		
Chemical Identification	CTFA / INCI Name Active Ingredients DMDM Hydantoin	CAS Number 6440-58-0	EINECS Number 229-222-8
Ingredient Information	Active Ingredients 1,3-Dimethylol-5,5-dimethylhydantoin 53 - 55 % Inert Ingredients Water 44 - 46 % EsoDant - 55 is a composition comprised of the active ingredient 1,3-Dimethylol-5,5-dimethylhydantoin and inert ingredients. Each batch of EsoDant - 55 is produced to exact specifications, and a certificate of analysis can be provided with each order. The above is presented as typical composition and does not constitute specifications.		

Formulating Considerations

The microbiological performance of EsoDant - 55 in most personal care and cosmetic products is excellent. The use of proper handling and application techniques as EsoDant - 55 is incorporated into formulations will enhance the overall performance of EsoDant - 55 and help to optimize treatment costs. The following guidelines are presented for your consideration. As part of a best practice manufacturing strategy, confirm compatibility in the development of new products.

Typical Use Levels - EsoDant - 55 is typically used at levels of 0.20 - 1.0 % by weight in the final formulation based on application such as personal care or home care. The actual level of treatment to protect any particular system depends on a variety of factors including, but not limited to, the initial level of microbiological contamination, the components of the system, the likelihood of exposure to repeat microbiological challenges, and the temperature and pH of the system. Because personal care formulations vary with each manufacturer and these variations may impact the preservative, it is recommended that the manufacturer confirm the efficacy and stability of EsoDant - 55 in use. The optimum use level will always be a function of several factors, including the composition of the formulation, anticipated microbial challenge, processing and storage conditions, and even local regulatory considerations (see Regulatory Status). Ester India can supply samples and technical support to help you determine the best preservative system and optimum use levels for your specific situation.

Addition to the Formulation - EsoDant - 55 is a liquid product that is easily incorporated into water-based systems and can be added at any stage of the production process. The product should be added at a point where there is good agitation or mixing to achieve homogeneous distribution throughout the formulation. For best results, the product should be added as early into the process as possible, provided the temperature and pH of the system are within the appropriate ranges described below.

Effect of Temperature - EsoDant - 55 remains effective over a wide temperature range. It can be heated to 80°C with no loss in performance. For systems that exceed 80°C, add EsoDant - 55 during the cooling stage, after the temperature has decreased below 80°C.

Effect of pH - EsoDant - 55 is stable and provides superior preservation over the wide formulation and product pH range of 3 - 10. This allows for considerable flexibility in processing and even final formulation conditions. EsoDant - 55 is long-term stable up to a pH of 10.

Compatibility - EsoDant - 55 is fully compatible with most personal care formulation ingredients, including all types of cationic, nonionic, and anionic surfactants.

Regulatory Status

EsoDant - 55 is globally approved with the following regional limitations:

Europe

- Rinse-off: Maximum DMDM Hydantoin concentration of 0.6 %
- Leave-on: Maximum DMDM Hydantoin concentration of 0.6 %

Americas Approved for Use

Asia

General

- Rinse-off: Maximum DMDM Hydantoin concentration of 0.6 %
- Leave-on: Maximum DMDM Hydantoin concentration of 0.6 %

Japan

- Rinse-off: Maximum DMDM Hydantoin concentration of 0.02 %
- Leave-on: Not allowed

Chemical Considerations

This product is approved for sale under the following chemical inventories:

Country	Agency	Country	Agency
United States.....	TSCA	Canada.....	DSL
Europe.....	EINECS	Australia.....	AICS
Korea.....	ECL	Japan.....	ENCS / MITI
Philippines.....	PICCS	China.....	IECSC
New Zealand.....	NZIoC	Taiwan.....	NECI

**Handling,
Storage, and
Disposal**

Store in a cool and dry place away from heat and direct sunlight.

Health and Safety Please refer to the Safety Data Sheet (SDS).

Efficacy Challenge Test as per USP 46, Chapter No. 51.

Test Micro Organism	Pseudomonas aeruginosa ATCC-9027 CFU/ml	Staphylococcus aureus ATCC-6538 CFU/ml	Candida albicans ATCC-10231 CFU/ml	Aspergillus brasiliensis ATCC-16404 CFU/ml	E. coli ATCC-8739 CFU/ml
Inoculum	12×10^7	08×10^8	09×10^7	06×10^6	08×10^7
Sample + Inoculum (Initial) (20/12/2024)	09×10^7	05×10^8	07×10^7	04×10^6	05×10^7
Sample + Inoculum (After 14 Days) (03/01/2025)	02×10^4	01×10^5	02×10^4	01×10^3	02×10^4
Sample + Inoculum (After 28 Days) (17/01/2025)	NI	NI	NI	NI	NI

NI - No increase in the number of viable micro-organisms compared with the previous reading.

Challenge Test performed by 3rd party Laboratory.

No express or implied warranties are provided for these products, including any warranties fitness for a specific purpose. Nothing in this document should be interpreted as encouraging the infringement of any existing or future patents. Ester India and its affiliates shall not be held liable for any incidental, consequential, or other damages arising from alleged negligence, breach of warranty, strict liability, or any other legal theory related to the use or handling of these products. The maximum liability of Ester India for any claim related to the manufacture, use, or sale of the products is limited to the original purchase price paid by the buyer. Ester India does not accept responsibility for the information provided in this document or for any results obtained from its use. All information is supplied without warranty, and customers use the products at their own risk. Customers are advised to perform their own testing under actual conditions before commercial application.



📍 128/29-30 GIDC, Nandesari,
Vadodara - 391340, INDIA.

✉ office@esterindia.com
🌐 www.esterindia.com

☎ +91 98980 01188
+91 98988 72338